California Environmental Protection Agency

Air Resources Board

PUBLIC MEETING AGENDA

December 16, 2011

LOCATION:
Air Resources Board
Byron Sher Auditorium, Second Floor
1001 I Street
Sacramento, California 95814
http://www.calepa.ca.gov/EPAbldg/location.htm

This facility is accessible by public transit. For transit information, call (916) 321-BUSS, website: http://www.sacrt.com
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TO SUBMIT WRITTEN COMMENTS ON AN AGENDA ITEM IN ADVANCE OF THE MEETING GO TO:
http://www.arb.ca.gov/lispub/comm/bclist.php

Friday, December 16, 2011
9:00 a.m.

DISCUSSION ITEMS:

Note: The following agenda items may be heard in a different order at the Board meeting.

Agenda Item #

11-10-1: Public Meeting to Hear a Report on the First Formal Review of the Low Carbon Fuel Standard Program, and an Update on the Low Carbon Fuel Standard Sustainability Provisions

Staff will present to the Board a report summarizing a review of the Low Carbon Fuel Standard (LCFS) program, as required by the LCFS regulation. Staff will also update the Board on the development of the LCFS sustainability provisions.

11-10-2: Public Hearing to Consider Amendments to the Low Carbon Fuel Standard Regulation

Staff will present for the Board's consideration proposed amendments to the LCFS regulation.

11-10-3: Public Meeting to Consider Adoption of Proposition 1B Grants to Reduce Emissions From Goods Movement

Staff will present for the Board's consideration a list of grant awards for local agency projects to reduce freight-related emissions in the four trade corridors.

11-10-4: Public Hearing to Consider Amendments to California's Small Off-Road Engine and Tier 4 Off-Road Compression-Ignition Engine Regulations and Test Procedures; and Amendments to the Exhaust Emission Certification Test Fuel For Off-Road Spark-Ignition Engines, Equipment, and Vehicles

Staff will present for the Board's consideration proposed amendments to align the small off-road engine and tier 4 off-road compression-ignition engine regulations and test procedures with the current federal versions, without affecting the stringency of the emission standards. Staff will also present proposed amendments for the use of 10 percent ethanol on-road motor vehicle test fuel for the exhaust emission certification of off-road spark-ignition engines.

CLOSED SESSION – LITIGATION

The Board will hold a closed session, as authorized by Government Code section 11126(e), to confer with, and receive advice from, its legal counsel regarding the following pending or potential litigation:

Pacific Merchant Shipping Association v. Goldstene, U.S. District Court (E.D. Cal. Sacramento), Case No. 2:09-CV-01151-MCE-EFB.

POET, LLC, et al. v. Goldstene, et al., Superior Court of California (Fresno County), Case No. 09CECG04850.

Rocky Mountain Farmers Union, et al. v. Goldstene, U.S. District Court (E.D. Cal. Fresno), Case No. 1:09-CV-02234-LJO-DLB.

National Petrochemical & Refiners Association, et al. v. Goldstene, et al., U.S. District Court (E.D. Cal. Fresno) Case No. 1:10-CV-00163-AWI-GSA.

Association of Irritated Residents, et al. v. California Air Resources Board, Superior Court of California (San Francisco County), Case No. CPF-09-509562.

Association of Irritated Residents, et al. v. U.S. E.P.A., 2011 WL 310357 (C.A.9), (Feb. 2, 2011).

California Dump Truck Owners Association v. California Air Resources Board, U.S. District Court (E.D. Cal. Sacramento) Case No. 2:11-CV-00384-MCE-GGH.

Engine Manufacturers Association v. California Air Resources Board, Sacramento Superior Court, Case No. 34-2010-00082774.

OPPORTUNITY FOR MEMBERS OF THE BOARD TO COMMENT ON MATTERS OF INTEREST

Board members may identify matters they would like to have noticed for consideration at future meetings and comment on topics of interest; no formal action on these topics will be taken without further notice.

OPEN SESSION TO PROVIDE AN OPPORTUNITY FOR MEMBERS OF THE PUBLIC TO ADDRESS THE BOARD ON SUBJECT MATTERS WITHIN THE JURISDICTION OF THE BOARD

Although no formal Board action may be taken, the Board is allowing an opportunity to interested members of the public to address the Board on items of interest that are within the Board's jurisdiction, but do not specifically appear on the agenda. Each person will be allowed a maximum of three minutes to ensure that everyone has a chance to speak.

TO SUBMIT WRITTEN COMMENTS ON AN AGENDA ITEM IN ADVANCE OF THE MEETING GO TO:
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ONLINE SIGN-UP:
You can sign up online in advance to speak at the Board meeting when you submit an electronic Board item comment. For more information go to:
http://www.arb.ca.gov/board/online-signup.htm

IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT THE CLERK OF THE BOARD:
OFFICE: (916) 322-5594
1001 I Street, Floor 23, Sacramento, California 95814
ARB Homepage: www.arb.ca.gov

SPECIAL ACCOMMODATION REQUEST

Special accommodation or language needs can be provided for any of the following:

- An interpreter to be available at the hearing;
- Documents made available in an alternate format or another language;
- A disability-related reasonable accommodation.

To request these special accommodations or language needs, please contact the Clerk of the Board at (916) 322-5594 or by facsimile at (916) 322-3928 as soon as possible, but no later than 7 business days before the scheduled Board hearing. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

Comodidad especial o necesidad de otro idioma puede ser proveído para alguna de las siguientes:

- Un intérprete que esté disponible en la audiencia.
- Documentos disponibles en un formato alterno u otro idioma;
- Una acomodación razonable relacionados con una incapacidad.

Para solicitar estas comodidades especiales o necesidades de otro idioma, por favor llame a la oficina del Consejo al (916) 322-5594 o envíe un fax a (916) 322-3928 lo más pronto posible, pero no menos de 7 días de trabajo antes del día programado para la audiencia del Consejo. TTY/TDD/Personas que necesiten este servicio pueden marcar el 711 para el Servicio de Retransmisión de Mensajes de California.

SMOKING IS NOT PERMITTED AT MEETINGS OF THE CALIFORNIA AIR RESOURCES BOARD

California Environmental Protection Agency

Air Resources Board

PUBLIC MEETING AGENDA

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TITLE 17. CALIFORNIA AIR RESOURCES BOARD

NOTICE OF PUBLIC HEARING TO CONSIDER AMENDMENTS TO THE LOW CARBON FUEL STANDARD REGULATION

The Air Resources Board (ARB or Board) will conduct a public hearing at the time and place noted below to consider adoption of amendments to the Low Carbon Fuel Standard (LCFS) regulation. The LCFS is a greenhouse gas (GHG) control measure adopted pursuant to AB 32 (California Warming Solutions Act of 2006). It is intended to reduce, on a full-fuel lifecycle basis, the carbon intensity of transportation fuels used in California.

DATE: December 15, 2011

TIME: 9:00 a.m.

PLACE: California Environmental Protection Agency
Air Resources Board
Byron Sher Auditorium
1001 I Street
Sacramento, California 95814

This item may be considered at a two-day meeting of the Board, which will commence at 9:00 a.m., December 15, 2011, and may continue at 8:30 a.m., on December 16, 2011. This item may not be considered until December 16, 2011. Please consult the agenda for the hearing, which will be available at least 10 days before December 15, 2011, to determine the day on which this item will be considered.

INFORMATIVE DIGEST OF PROPOSED ACTION AND POLICY STATEMENT OVERVIEW

Sections Affected: Proposed amendments to California Code of Regulations (CCR), title 17, sections 95480.1, 95481, 95482, 95484, 95485, 95486, and 95488. Proposed adoption of new sections 95480.2, 95480.3, 95480.4, and 95480.5 title 17, CCR.

The following documents are incorporated in the regulation by reference: (1) *Credit Transfer Form* (October 28, 2011), (2) *Credit Allocation Form* (October 28, 2011), (3) Supplement (October 28, 2011) to "Stationary Source Division, Air Resources Board (February 27, 2009, v.2.1), Detailed California-Modified GREET Pathway for California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB) from Average Crude Refined in California;" (4) Supplement (October 28, 2011) to "Stationary Source Division, Air Resources Board (February 28, 2009, v.2.1), Detailed California-Modified GREET Pathway for Ultra Low Sulfur Diesel (ULSD) from Average Crude Refined in California;" and (5) Supplement (October 28, 2022) to "Stationary Source Division, Air Resources Board (February 27, 2009, v.2.1), Detailed California-Modified GREET Pathway for California

Reformulated Gasoline (CaRFG);" all of which are available at the ARB website noted below for this rulemaking.

Background:

The Board approved the LCFS regulation for adoption on April 23, 2009. Background information for the LCFS regulation was provided in the original notice of proposed rulemaking for the April 2009 Board hearing.[1] The regulation entered into full effect on April 15, 2010. Implementation of the carbon intensity (CI) reduction requirements and compliance schedules began on January 1, 2011. The compliance schedules are designed to reduce the CI of transportation fuels used in California by at least 10 percent by the year 2020.[2]

Since the regulation went into effect, regulated parties have operated under the LCFS program with no significant compliance issues. In short, the LCFS is working as designed. Regulated parties are using the LCFS Reporting Tool (LRT) to submit electronically their quarterly progress and annual compliance reports with no known significant problems. Further, fuel producers are innovating and achieving material reductions in their fuel pathways' carbon intensity, an effect the LCFS regulation is expressly designed to encourage, which is reflected in the large number of applications submitted under the "Method 2A/2B" process. To date, ARB staff has posted 26 submittals for Method 2A/2B applications, representing over 100 individual new or modified fuel pathways with substantially lower carbon intensities than those provided in the "Look Up" tables in the regulation,[3] on the LCFS portal.[4] Substantial credit generation also indicates successful implementation of the program; in the first quarter of 2011 alone, regulated parties reported generating about 225,000 metric tons (MT) of LCFS credits versus about 150,000 MTs of deficits.

To the extent questions from stakeholders have arisen, they have been addressed through regulatory advisories widely broadcast to stakeholders on the LCFS list serve,[5] issuance of an LCFS Guidance Document that responds to frequently asked questions,[6] and communications with individual stakeholders on their specific questions.

However, complex regulations like the LCFS generally can benefit from further refinements. Based on feedback from regulated parties as well as other stakeholders, and a review of lessons learned since implementation began, staff has identified

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[1] See "Background" section in "Notice of Public Hearing to Consider Adoption of a Proposed Regulation to Implement the Low Carbon Fuel Standard" for the original April 2009 public hearing, which is incorporated herein by reference and is available at http://www.arb.ca.gov/regact/2009/lcfs09/lcfsnot.pdf.

[2] The LCFS regulation is described in detail in the staff report for the original rulemaking, which was released to the public on March 5, 2009, along with other rulemaking materials available at http://www.arb.ca.gov/regact/2009/lcfs09/lcfs09.htm

[3] See 17 CCR section 95486(b), available at http://www.arb.ca.gov/regact/2009/lcfs09/lcfscombofinal.pdf.

[4] Pursuant to LCFS Regulatory Advisory 10-04, regulated parties are permitted to use the Method 2A/2B pathways and carbon intensities when they are posted by ARB staff prior to a hearing by the Executive Officer to consider taking action on such proposed pathways. See http://www.arb.ca.gov/fuels/lcfs/122310lcfs-rep-adv.pdf.

[5] See Advisories 10-02, 10-03, 10-04, and 10-04A at http://www.arb.ca.gov/fuels/lcfs/lcfs.htm.

[6] See http://www.arb.ca.gov/fuels/lcfs/LCFS_Guidance_(Final_v.1.0).pdf.

specific areas of the regulation for clarification and other improvements. These proposed improvements are expected to better ensure the successful implementation of the LCFS.

Description of the Proposed Regulatory Action

As noted, the proposal clarifies, streamlines, and improves certain provisions of the LCFS regulation; collectively, these changes are expected to help ensure the successful implementation of the program.

The proposed amendments address several aspects of the regulation, including: reporting requirements, credit trading, regulated parties, opt-in and opt-out provisions, definitions, and other clarifying language. A summary description of each of the proposed amendments is provided below; a more detailed discussion of the changes can be found in the ISOR for this proposed regulatory action.

Opt-In and Opt-Out Provisions

Various low-carbon and exempted fuel providers, already meeting 2020 carbon intensity standards, have expressed their intent and desire to opt into the LCFS program as a regulated party, but they are unsure of the process and if they can opt out in the future. To address this concern, staff is proposing to add specific opt-in and opt-out provisions in the regulation. These provisions would specify the process and information submittals needed for a fuel provider to opt in or opt out as a regulated party.

In addition, several out-of-state fuel producers and intermediate fuel suppliers expressed the desire to opt into the program as regulated parties. The current regulatory language does not confer regulated party status to these out-of-state entities because of jurisdictional concerns. These parties are further upstream and closer to the starting point of fuel production than currently designated regulated parties (i.e., fuel importers and California producers). To address this, staff is proposing regulatory amendments that would permit such out-of-state entities to voluntarily elect to become regulated parties and thereby become subject to California jurisdiction.

Further, several gas utilities have expressed a desire to opt into the program when a person, who would normally be qualified to opt in as a regulated party for compressed natural gas (CNG), decides not to do so. An example of this is a school district that operates its own CNG fueling station; if it chooses not to opt into the LCFS program,[7] the gas utilities would be able to opt into the regulation in the school district's place under specified conditions. By opting into the program in lieu of an entity that chooses not to opt in, the gas utility will be able to capture LCFS credits that otherwise would have been orphaned and unavailable for use in the credit market.

[7] Under section 95480.1(b) of the current LCFS regulation, an entity that provides certain low CI fuels for transportation use, such as CNG for school buses, is normally exempt from the regulation and would need to opt into the program in order to become a regulated party and generate LCFS credits.

These proposed opt-in/opt-out provisions are intended to work in tandem with the enhanced regulated party changes described below.

Enhanced Regulated Party

Staff has identified several ways to enhance the regulated party definitions so that more fuel producers and suppliers will become or can become regulated parties. First, as noted above, several out-of-state fuel providers and intermediate entities have expressed their desire to be able to opt in as a regulated party under the regulation. Accordingly, staff is proposing to amend the definition for "producer" to include producers in California and outside the State, and amendments to facilitate regulated party status for intermediate entities. Once an out-of-state producer opts in, it can pass the compliance obligation down to an intermediate entity before the California importer; the intermediate entity, in turn, would need to opt in to formalize its status as the regulated party for that fuel.

Second, several fuel marketers that operate transloading[8] facilities expressed their desire to be regulated under the program as "importers." The current regulatory text would prohibit such entities from becoming regulated parties. This is because the current definition for "import facility" requires the presence of a stationary storage tank into which the fuel is transferred after delivery into the State. Therefore, to confer regulated party status to those marketers, staff is proposing to change the definitions of "importer" and "import facility" such that the regulated party status is conferred to those entities that own title to a fuel in the transportation equipment when the fuel is delivered in California.

Method 2A/2B Certification

The approval of new or modified fuel pathways (i.e., a Method 2A/2B approval)[9] under the regulation currently requires a formal rulemaking. A formal rulemaking is a lengthy and resource-intensive undertaking, requiring an "initial statement of reasons;" a 45-day comment period; a "final statement of reasons," which provides the agency's responses to comments received on the proposal; and a public hearing. This formal process typically takes about six months to a year. Based on the potential efficiency gains, the Board directed staff under Resolution 09-31 to investigate the feasibility of converting the rulemaking process into a more streamlined certification process.[10] From this investigation, staff is proposing to convert the current process into an application program to facilitate more expeditious reviews of Method 2A/2B submittals.

[8] A "transloading" facility is one in which fuel (e.g., ethanol) is delivered by rail tank car and transferred directly into a cargo tanker truck without first going into a stationary storage tank. Indeed, transloading facilities do not have stationary storage tanks for the fuel that is delivered by rail.
[9] See 17 CCR section 95486(c) through (f).
[10] See http://www.arb.ca.gov/regact/2009/lcfs09/res0931.pdf.

Credit Trading

The current LCFS regulation allows regulated parties to trade and transact LCFS credits, but it does not specify ARB's role in the transactions, information about the credit market to be published by ARB, and other relevant provisions and requirements. Therefore, staff is proposing a new section to be added to the LCFS regulation to provide more detail on how credits and deficits will be tracked. The proposal also specifies the process for regulated parties to use for acquiring, banking, transferring, and retiring credits. Other provisions relevant to credit trading are also proposed.

High Carbon-Intensity Crude Oil

The current regulation contains a provision requiring regulated parties of petroleum-based fuels to account for their use of high carbon-intensity crude oil (HCICO) in their crude slates. The purpose of the HCICO provisions is to ensure that increases in the overall CI of CARBOB[11] and ULSD that might occur over time due to the use of more-carbon-intensive crudes are mitigated and do not diminish the emission reductions anticipated from the LCFS regulation. A regulated party is required to use the average CI value shown in the Lookup Table if the fuel/blendstock is derived from crude oil that is either not a HCICO[12], or was included in the 2006 California baseline crude mix (i.e., originated from a location which contributed two percent or more of the total crude oil refined in California in 2006 ["crude basket"]). A crude oil that does not satisfy both of these conditions is referred to as non-basket HCICO.

The current regulation requires the regulated party to account for a "baseline deficit" (the difference in CI between the compliance standard and average CI for CARBOB/ULSD as shown in the Lookup Table), as well as an "incremental deficit" incurred from using a non-basket HCICO (the difference between the average CI for all crudes, including HCICO, and the actual CI of the HCICO used). Petroleum refiners in California assert that the current HCICO provisions are overly burdensome to their industry, while other stakeholders maintain that the LCFS should continue to prevent increases in lifecycle carbon emissions that could occur if higher intensity crudes are used to replace existing supplies. ARB staff worked with stakeholders to determine if there were better options that would both meet the intent of the regulation (to ensure that the LCFS benefits are not diminished due to increases in GHG emissions from higher carbon intensity crude supplies) and address, to the extent possible, the concerns laid out by the various stakeholders.

Accordingly, staff is proposing a refined accounting approach that would improve the regulation in a number of ways. The proposal is similar to the existing provision in that it would continue to require refiners to account for both a "baseline deficit" and an "incremental deficit". This would maintain the requirement that refiners account for sector-wide changes over time due to the CI of crudes processed in California.

[11] CARBOB means the California reformulated gasoline blendstock for oxygenate blending.
[12] HCICO is defined as any crude oil that has a total production and transport carbon-intensity value greater than 15.00 g CO2e/MJ. See section 95486(b)(2)(A).

However, the proposal differs from the existing provision in several ways. First, the concept of a grandfathered "basket" of crudes would be replaced with a "baseline" from which additional HCICO use would be calculated. Second, the baseline deficit would be based on a more recent baseline year to reflect more accurate data than were available for the 2009 rulemaking. Third, the incremental deficit would not apply a 15.00 g CO_2e/MJ bright line for differentiating between HCICOs and non-HCICOs. Instead, the proposal would eliminate the distinction entirely and simply require refiners to account for the difference in actual crude CIs that occur over time relative to a specified baseline. Thus, this would eliminate the "either/or" approach in the current provision and replace it with a continuum-based approach.

It should be noted that ARB is continuing to work with stakeholders on the development of alternatives and may propose additional modifications to this provision. Any additional modifications to this proposal would be made available for a 15-day comment period after the December 2011 Board hearing.

Electricity Regulated Party Revisions

The Board directed staff in Resolution 09-31 to review the provisions applicable to regulated parties for electricity and propose amendments if appropriate. Since the Board approved the regulation in 2009, the markets for electric vehicles and EV fueling infrastructure have evolved and continue to evolve. To reflect this market transformation, staff is proposing amendments that clearly designate the regulated parties for various electric vehicle (EV) charging scenarios, the requirements that would apply to designated regulated parties, and, to maximize the number of electricity-generated credits available for use in the LCFS, the default regulated party if the first-in-line regulated party declines to participate in the LCFS. The proposal would apply to potential regulated parties such as electric utilities, non-utilities installing electric vehicle service equipment (EVSE) with a customer contract, business owners, and fleet operators who include three or more EVs in their fleets.

Energy Economy Ratios

In Resolution 09-31, the Board directed staff to reevaluate the Energy Economy Ratios (EER) for heavy-duty vehicles burning CNG or liquefied natural gas (LNG) vehicles and update them if appropriate. Accordingly, staff has reevaluated those EERs and is proposing to revise them to reflect updated information. In addition, staff has reevaluated and proposes revisions to the EERs for light-duty battery electric vehicles (BEV), plug-in-hybrid electric vehicles (PHEV), and light-duty fuel cell vehicles (FCV). These proposed changes, including proposed changes to how the EERs are used in specified LCFS calculations, reflect engine efficiency and fuel economy data that were not available during the original 2009 rulemaking. These proposed changes will affect how LCFS credits and deficits are calculated, with an overall effect of increasing LCFS credits available for trading.

Reporting Requirements

Staff is proposing several amendments to various reporting requirements, including elimination of the requirement to report renewable identification numbers (RINs) and energy volumes in "gasoline gallon equivalent" (GGE) units. The proposed amendments would also require reporting of volumes in their native units to the nearest whole number. Further, staff is proposing to require the use of the LCFS Reporting Tool (LRT) for reporting purposes. Although the current regulatory text does not explicitly require use of the LRT, it has become the *de facto* standard for reporting purposes by all parties registered as regulated parties, and the proposal would simply formalize what is already occurring in practice.

Miscellaneous Changes

The proposal contains a number of miscellaneous changes. This includes deleting the reference to the alternative fuel specification in the definitions of "compressed natural gas," "biogas," and "liquefied natural gas." This change is proposed to better reflect the GHG basis of the regulation. Further, staff is proposing amendments that would codify a number of provisions specified in the LCFS regulatory advisories released to date. Finally, staff is proposing a number of grammatical, typographical, or other non-substantial corrections.

COMPARABLE FEDERAL REGULATIONS

As noted in the 2009 notice of proposed rulemaking, there were no federal regulations that were comparable to the LCFS regulation at that time. This remains true. Therefore, there are no federal regulations that are comparable to the LCFS regulation or the proposed amendments to the LCFS regulation.

AVAILABILITY OF DOCUMENTS AND AGENCY CONTACT PERSONS

ARB staff has prepared a Staff Report: Initial Statement of Reasons (ISOR) for the proposed regulatory action, which includes a summary of the economic and environmental impacts of the proposal. The ISOR is entitled: Proposed Amendments to the Low Carbon Fuel Standard Regulation.

Copies of the ISOR and the full text of the proposed regulatory language, in underline and strikeout format to allow for comparison with the existing regulations, may be accessed on ARB's website listed below, or may be obtained from the Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, First Floor, Sacramento, California, 95814, (916) 322-2990, on October 26, 2011.

Upon its completion, the Final Statement of Reasons (FSOR) will be available and copies may be requested from the agency contact persons in this notice, or may be accessed on ARB's website listed below.

Inquiries concerning the substance of the proposed regulation may be directed to the designated agency contact persons: Aubrey Sideco, Air Resources Engineer, Substance Evaluation Section, at (916) 324-3334; Floyd Vergara, Chief of the Alternative Fuels Branch, at (916) 327-5986; or Mike Waugh, Chief of the Transportation Fuels Branch, at (916) 322-6020.

Further, the agency representative and designated back-up contact persons, to whom nonsubstantive inquiries concerning the proposed administrative action may be directed are Ms. Lori Andreoni, Manager, Board Administration and Regulatory Coordination Unit, (916) 322-4011, or Ms. Amy Whiting, Regulations Coordinator, (916) 322-6533. The Board staff has compiled a record for this rulemaking action, which includes all the information upon which the proposal is based. This material is available for inspection upon request to the contact persons.

This notice, the ISOR and all subsequent regulatory documents, including the FSOR, when completed, are available on ARB's website for this rulemaking at http://www.arb.ca.gov/regact/2011/lcfs2011/lcfs2011.htm

COSTS TO PUBLIC AGENCIES AND TO BUSINESSES AND PERSONS AFFECTED

The determinations of the Board's Executive Officer concerning the costs or savings necessarily incurred by public agencies and private persons and businesses in reasonable compliance with the proposed regulations are presented below.

Pursuant to Government Code sections 11346.5(a)(5) and 11346.5(a)(6), the Executive Officer has determined that the proposed regulatory action would not create costs or savings to any State agency or in federal funding to the State, costs or mandate to any local agency or school district, whether or not reimbursable by the State pursuant to Government Code, title 2, division 4, part 7 (commencing with section 17500), or other nondiscretionary cost or savings to State or local agencies.

In developing this regulatory proposal, ARB staff evaluated the potential economic impacts on representative private persons or businesses. The ARB is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

The Executive Officer has made an initial determination that the proposed regulatory action would not have a significant statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states, or on representative private persons.

In accordance with Government Code section 11346.3, the Executive Officer has made an initial determination that the proposed regulatory action would not affect the creation or elimination of jobs within the State of California, the creation of new businesses or the elimination of existing businesses within the State of California, or the expansion of businesses currently doing business within the State of California. A detailed

assessment of the economic impacts of the proposed regulatory action can be found in the ISOR.

The Executive Officer has also determined, pursuant to California Code of Regulations, title 1, section 4, that the proposed regulatory action would not affect small businesses, because as most, if not all regulated parties are relatively large businesses, and the proposed amendments clarify, streamline, and enhance the current regulation.

In accordance with Government Code sections 11346.3(c) and 11346.5(a)(11), the Executive Officer has found that the reporting requirements in the proposed amendments to the LCFS regulation which apply to businesses are necessary for the health, safety, and welfare of the people of the State of California.

Before taking final action on the proposed regulatory action, the Board must determine that no reasonable alternative considered by the Board, or that has otherwise been identified and brought to the attention of the Board, would be more effective in carrying out the purpose for which the action is proposed, or would be as effective and less burdensome to affected private persons than the proposed action.

ENVIRONMENTAL ANALYSIS

In accordance with ARB's certified regulatory program, California Code of Regulations, title 17, sections 60006 through 60007, and the California Environmental Quality Act, Public Resources Code section 21080.5, ARB staff has conducted an analysis of the potential for significant adverse and beneficial environmental impacts associated with the proposed regulatory action. The environmental analysis of the proposed regulatory action can be found in Chapter V of the ISOR.

SUBMITTAL OF COMMENTS

Interested members of the public may also present comments orally or in writing at the meeting, and comments may be submitted by postal mail or by electronic submittal before the meeting. The public comment period for this regulatory action will begin on October 31, 2011. To be considered by the Board, written comments, not physically submitted at the meeting, must be submitted on or after October 31, 2011, and received **no later than 12:00 noon on December 14, 2011**, and must be addressed to the following:

Postal mail: Clerk of the Board, Air Resources Board
1001 I Street, Sacramento, California 95814

Electronic submittal: http://www.arb.ca.gov/lispub/comm/bclist.php

You can sign up online in advance to speak at the Board meeting when you submit an electronic board item comment. For more information go to: http://www.arb.ca.gov/board/online-signup.htm.

Please note that under the California Public Records Act (Gov. Code, § 6250 et seq.), your written and oral comments, attachments, and associated contact information (e.g., your address, phone, email, etc.) become part of the public record and can be released to the public upon request.

ARB requests that written and email statements on this item be filed at least 10 days prior to the hearing so that ARB staff and Board members have additional time to consider each comment. The Board encourages members of the public to bring to the attention of staff in advance of the hearing any suggestions for modification of the proposed regulatory action.

Additionally, the Board requests but does not require that persons who submit written comments to the Board reference the title of the proposal in their comments to facilitate review.

STATUTORY AUTHORITY AND REFERENCES

This regulatory action is proposed under the authority granted in Health and Safety Code, sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, and 41511; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal. 3d 411, 121 Cal. Rptr. 249 (1975). This action is proposed to implement, interpret, and make specific sections 38501, 38510, 38560, 38560.5, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, and 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal. 3d 411, 121 Cal. Rptr. 249 (1975).

HEARING PROCEDURES

The public hearing will be conducted in accordance with the California Administrative Procedure Act, Government Code, title 2, division 3, part 1, chapter 3.5 (commencing with section 11340).

Following the public hearing, ARB may adopt the regulatory language as originally proposed, or with non-substantial or grammatical modifications. ARB may also adopt the proposed regulatory language with other modifications if the text as modified is sufficiently related to the originally proposed text that the public was adequately placed on notice and that the regulatory language as modified could result from the proposed regulatory action; in such event, the full regulatory text, with the modifications clearly indicated, will be made available to the public, for written comment, at least 15 days before it is adopted.

The public may request a copy of the modified regulatory text from ARB's Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, First Floor, Sacramento, California, 95814, (916) 322-2990.

SPECIAL ACCOMMODATION REQUEST

Special accommodation or language needs can be provided for any of the following:

- An interpreter to be available at the hearing;
- Documents made available in an alternate format or another language;
- A disability-related reasonable accommodation.

To request these special accommodations or language needs, please contact the Clerk of the Board at (916) 322-5594 or by facsimile at (916) 322-3928 as soon as possible, but no later than 10 business days before the scheduled Board hearing. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

Comodidad especial o necesidad de otro idioma puede ser proveído para alguna de las siguientes:

- Un intérprete que esté disponible en la audiencia.
- Documentos disponibles en un formato alterno u otro idioma.
- Una acomodación razonable relacionados con una incapacidad.

Para solicitar estas comodidades especiales o necesidades de otro idioma, por favor llame a la oficina del Consejo al (916) 322-5594 o envíe un fax a (916) 322-3928 lo más pronto posible, pero no menos de 10 días de trabajo antes del día programado para la audiencia del Consejo. TTY/TDD/Personas que necesiten este servicio pueden marcar el 711 para el Servicio de Retransmisión de Mensajes de California.

CALIFORNIA AIR RESOURCES BOARD

James N. Goldstene
Executive Officer

Date: October 18, 2011

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.arb.ca.gov.

State of California
AIR RESOURCES BOARD

NOTICE OF PUBLIC HEARING DATE CHANGE

NOTICE OF PUBLIC HEARING TO CONSIDER AMENDMENTS TO THE LOW CARBON FUEL STANDARD REGULATION

PLEASE BE ADVISED that the date of the meeting of the California Air Resources Board **has changed** as follows:

DATE: December 16, 2011

TIME: 9:00 a.m.

LOCATION: California Environmental Protection Agency
Air Resources Board
Byron Sher Auditorium
1001 I Street
Sacramento, California 95814

SUBMITTAL OF COMMENTS

To be considered by the Board, written comments, not physically submitted at the meeting, must be submitted on or after October 31, 2011 and received no later than 12:00 noon on December 15, 2011, and must be addressed to the following:

Postal mail: Clerk of the Board, Air Resources Board
1001 I Street, Sacramento, California 95814

Electronic submittal: http://www.arb.ca.gov/lispub/comm/bclist.php

You can sign up online in advance to speak at the Board meeting when you submit an electronic board item comment. For more information go to: http://www.arb.ca.gov/board/online-signup.htm.

To request a special accommodation or language needs for any of the following:

Special accommodation or language needs can be provided for any of the following:

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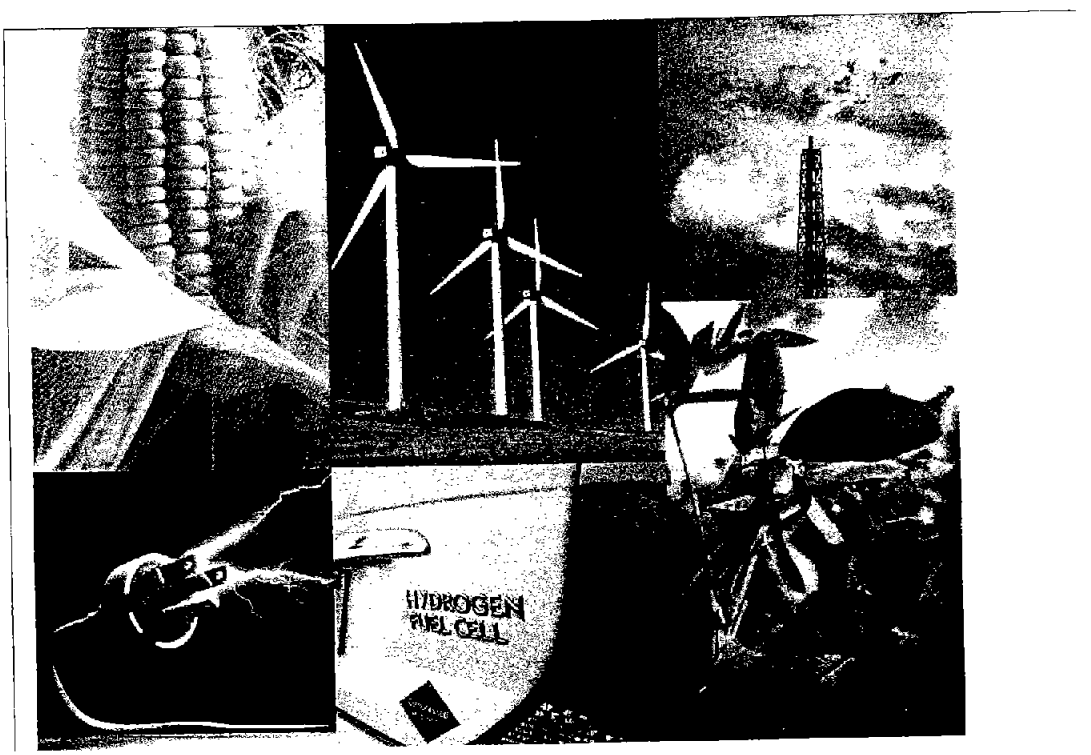
The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.arb.ca.gov.

California Environmental Protection Agency

Air Resources Board

STAFF REPORT: INITIAL STATEMENT OF REASONS FOR PROPOSED RULEMAKING



PROPOSED AMENDMENTS TO THE LOW CARBON FUEL STANDARD

Stationary Source Division
Transportation Fuels Branch
Alternative Fuels Branch

October 2011

State of California
AIR RESOURCES BOARD

STAFF REPORT: INITIAL STATEMENT OF REASONS FOR PROPOSED RULEMAKING

Public Hearing to Consider

PROPOSED AMENDMENTS TO THE LOW CARBON FUEL STANDARD REGULATION

To be considered by the Air Resources Board on December 15, 2011, at:

California Environmental Protection Agency
Headquarters Building
1001 "I" Street
Byron Sher Auditorium
Sacramento, California

Stationary Source Division:
Richard Corey, Chief
Mike Waugh, Chief, Transportation Fuels Branch
Floyd Vergara, Chief, Alternative Fuels Branch
Jim Aguila, Manager, Substance Evaluation Section

Date of Release: **October 26, 2011**
Scheduled for Consideration: **December 15, 2011**

This report has been prepared by the staff of the California Air Resources Board. Publication does not signify that the contents reflect the views and policies of the Air Resources Board, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

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Acknowledgments

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Air Resources Board
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Glossary

List of Acronyms and Abbreviations

ARB or Board	California Air Resources Board
BEV	Battery Electric Vehicle
CA-GREET	California Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation
CARBOB	California Reformulated Gasoline Blendstock for Oxygenate Blending
CBI	Confidential Business Information
CEQA	California Environmental Quality Act
CI	Carbon Intensity
CO_2, CO_2e	Carbon Dioxide, Carbon Dioxide Equivalent
CCS	Carbon Capture and Sequestration
CNG	Compressed Natural Gas
DGS	Distillers Grains with Solubles
EERs	Energy Economy Ratios
EO	Executive Officer
EWG	Electricity Workgroup
EV	Electric Vehicle(s)
EVSE	Electric Vehicle Service Equipment
EVSPs	Electric Vehicle Service Provider(s)
FCV	Fuel Cell Vehicle
gCO_2e/MJ	Grams of CO_2 Equivalent per Megajoule
gge	Gasoline Gallon Equivalent
GHG	Greenhouse Gas
HCICO	High Carbon-Intensity Crude Oil
iLUC	Indirect Land-use Change
ISOR	Initial Statement of Reasons
LCA	Lifecycle Assessment
L-CIS	LCFS Central Information System
LCFS	Low Carbon Fuel Standard
LNG	Liquefied Natural Gas
LRT	LCFS Reporting Tool
OPIS	Oil Price Information Service
$MMTCO_2e$	Million Metric Tons of CO_2 Equivalent
$MTCO_2e$	Metric Ton of CO_2 Equivalent
PHEV	Plug-in-Hybrid Electric Vehicles
RFS2	Renewable Fuel Standard 2
RINs	Renewable Identification Numbers
TOU	Time-of-Use
ULSD	Ultra Low Sulfur Diesel

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Executive Summary

The California Air Resources Board (ARB or Board) staff is proposing amendments to the Low Carbon Fuel Standard (LCFS) regulation.[1] The primary objectives of the proposed amendments are to clarify, streamline, and enhance certain provisions of the regulation. It should be emphasized that the proposal primarily involves refining and improving certain aspects of the regulation and that the vast majority of the regulation remains unchanged by this proposal. Therefore, this Initial Statement of Reasons (ISOR or Staff Report) builds on the comprehensive and extensive work that was done in support of the original 2009 LCFS rulemaking.[2] Accordingly, the rulemaking record and supporting materials for that original rulemaking generally remain applicable to this staff proposal, and this Staff Report addresses only the incremental changes related to the proposed amendments.

Staff developed these proposed amendments to support the overall purpose of the LCFS, which is to reduce greenhouse gas emissions (GHG) by reducing the full fuel-cycle, carbon intensity (CI) of the transportation fuel pool used in California.[3] The proposed amendments address several aspects of the regulation, including: reporting requirements, credit trading, regulated parties, opt-in and opt-out provisions, definitions, and other clarifying language. A summary description of each of the proposed amendments is provided later in this section.

After the Board approved the LCFS for adoption on April 23, 2009, the regulation entered into full effect on April 15, 2010. Implementation of the CI-reduction requirements and compliance schedules began on January 1, 2011. Since the regulation went into effect, regulated parties have operated under the LCFS program with no significant compliance issues.

In short, the LCFS is working as designed and intended. Regulated parties are using the LCFS Reporting Tool (LRT) to submit electronically their quarterly progress and annual compliance reports with no known significant problems. Further, fuel producers are innovating and achieving material reductions in their fuel pathways' carbon intensities, an effect the LCFS regulation is expressly designed to encourage, which is reflected in the large number of applications submitted under the "Method 2A/2B" process. Indeed, 26 submittals for Method 2A/2B applications, representing over 100 individual new or modified fuel pathways with substantially lower carbon intensities

[1] Codified at title 17, California Code of Regulations (CCR), sections 95480 through 95490.
[2] See the initial statement of reasons (http://www.arb.ca.gov/regact/2009/lcfs09/lcfsisor1.pdf and http://www.arb.ca.gov/regact/2009/lcfs09/lcfsisor2.pdf) and final statement of reasons (http://www.arb.ca.gov/regact/2009/lcfs09/lcfsfsor.pdf) for the original 2009 LCFS rulemaking, all of which are incorporated herein by reference.
[3] Adopted pursuant to California Global Warming Solutions Act of 2006 (AB 32) and codified at Health and Safety Code, sections 38500 through 38599.

have been posted to date by staff on the LCFS portal.[4] Substantial credit generation also indicates a successful implementation of the program; in the first quarter of 2011 alone, regulated parties reported generating about 225,000 metric tons (MT) of LCFS credits versus about 150,000 MTs of deficits.

To the extent questions from stakeholders have arisen, they have been addressed through a series of regulatory advisories[5] broadcast to stakeholders subscribed to the LCFS email notification list serve. Staff also provided a LCFS Guidance Document[6] that addresses frequently asked questions, and communicated with individual stakeholders on their specific questions.

With that said, most complex regulations like the LCFS can generally benefit from further refinements. Based on feedback from regulated parties as well as other stakeholders, and by reviewing lessons learned since implementation began, staff identified specific areas of the regulation for clarification and other improvements. These proposed improvements are expected to better ensure the successful implementation of the LCFS program.

To develop these proposed amendments, ARB staff conducted three public workshops, held numerous meetings and discussions with interested parties, and worked closely with stakeholders, including transportation fuel providers and importers, environmental groups, academia, and other interested parties. Materials presented and discussed by staff and other parties at the public meetings were made available for public review on ARB's main LCFS informational portal.[7]

Concurrent with the development of these amendments, ARB staff conducted the first review of the LCFS program. Section 95489 of the regulation requires the Executive Officer (EO) to establish an advisory panel and conduct two reviews of the implementation of the LCFS program through a public process. The reviews are required to address a broad range of implementation topics, including the program's progress against LCFS targets, whether adjustments to the compliance schedule are needed, advances in fuels and production technologies, hurdles or barriers and recommendations for addressing such barriers, and other relevant topics. Section 95489(a) of the regulation defines the minimum scope of each review. Several of the amendments proposed in this Staff Report take into consideration discussions with the advisory panelists on related topics.

---

[4] Pursuant to LCFS Regulatory Advisory 10-04, regulated parties are permitted to use the Method 2A/2B pathways and carbon intensities when they are posted by ARB staff prior to a hearing by the Executive Officer to consider taking action on such proposed pathways. See http://www.arb.ca.gov/fuels/lcfs/122310lcfs-rep-adv.pdf.

[5] See Advisories 10-02, 10-03, 10-04, and 10-04A at http://www.arb.ca.gov/fuels/lcfs/lcfs.htm.

[6] See http://www.arb.ca.gov/fuels/lcfs/LCFS_Guidance_(Final_v.1.0).pdf.

[7] See www.arb.ca.gov/fuels/lcfs/lcfs.htm and www.arb.ca.gov/fuels/lcfs/lcfs_meetings/lcfs_meetings.htm.

Further, it should be noted that the proposal does not reflect the staff's ongoing work to update the indirect land-use change analysis (iLUC),[8] which was considered too preliminary at the time of this Staff Report's release to serve as the basis for a proposed amendment on the iLUC carbon intensity values. This ongoing work is expected to be completed during the latter half of 2012, at which time the staff expects to propose regulatory amendments, if appropriate, for the Board's consideration to reflect the completed update.[9]

Summary of Proposed Amendments

The proposed amendments include revisions to specific provisions and requirements of the regulation. The following is a summary description of each of the proposed amendments:

Opt-In and Opt-Out Provisions

Various low-carbon and exempted fuel providers with fuels already meeting the 2020 carbon intensity standards have expressed their intent and desire to opt into the LCFS program as a regulated party, but they are unsure of the process and if they can opt out in the future. To address this concern, staff is proposing to add specific opt-in and opt-out provisions in the regulation. These provisions would specify the process and information submittals needed for a fuel provider to opt in or opt out as a regulated party.

In addition, several out-of-state fuel producers and some in-state fuel suppliers expressed the desire to opt into the program as regulated parties. The current regulation does not confer regulated party status to these out-of-state entities because of jurisdictional concerns. These parties are further upstream and closer to the starting point of fuel production than currently designated regulated parties (i.e., fuel importers and California producers). Staff is proposing regulatory amendments that would permit such entities to voluntarily elect to become regulated parties and become subject to California jurisdiction. These proposed opt-in provisions are intended to work in tandem with the enhanced regulated party changes described below.

Enhanced Regulated Party

Staff has identified a couple ways to enhance the regulated party definitions so that more fuel producers and suppliers can become regulated parties. First, staff is proposing to amend the definitions of "producer," "importer," and "import facility" to

[8] See Chapter IV, section C, of the 2009 LCFS staff report (http://www.arb.ca.gov/regact/2009/lcfs09/lcfsisor1.pdf) at IV-16 through IV-48 for a general discussion of iLUC analysis. The current work is evaluating advancements in the iLUC analysis for corn ethanol, sugarcane ethanol, and soybean biodiesel.

[9] See http://www.arb.ca.gov/fuels/lcfs/lcfs_meetings/lcfs_meetings.htm for presentations and materials discussed to date related to the iLUC work.

include out-of-state and intermediate entities, such as fuel distributors, suppliers, and marketers as regulated parties. This would have the effect of conferring initial regulated party status to those entities that own title to a fuel and actually deliver or cause delivery of a transportation fuel to California. Second, as noted above, several out-of-state fuel providers and intermediate entities have expressed their desire to be able to opt in as a regulated party under the regulation. Further, several gas utilities have expressed a desire to opt into the program when a person, who would normally be qualified to opt in as a regulated party for compressed natural gas (CNG), decides not to do so. Staff is proposing language to permit these entities to opt into the regulation under specified conditions.

Method 2A/2B Certification

The approval of new or modified fuel pathways (i.e., "Method 2A/2B approval") under the regulation currently requires a formal rulemaking. A formal rulemaking is a lengthy and resource-intensive undertaking, requiring an "initial statement of reasons"; a 45-day comment period; a "final statement of reasons," in which comments received on the proposed rulemaking are responded to; and a public hearing. This formal process typically takes about six months to a year. Based on the potential efficiency gains and in recognition that the activities to process and evaluate Method 2A/2B applications are becoming more routine, the Board directed staff under Resolution 09-31 to investigate the feasibility of converting the rulemaking process for the approval of new or modified pathways into a more streamlined certification process.[10] Based on this investigation, staff proposes to convert the current application process into a certification program to facilitate more expeditious reviews of Method 2A/2B submittals. The staff's proposal maintains transparency and accountability by including provisions retaining the public's ability to review and comment on proposed certifications.

Credit Trading

The current regulatory text permits regulated parties to trade and transact LCFS credits, but it does not specify ARB's role in the transactions, information about the credit market to be published by ARB, and other relevant provisions and requirements. Therefore, staff is proposing a new section to be added to the LCFS regulation to provide more detail on how credits and deficits will be tracked. The proposal also specifies the process for regulated parties to use for acquiring, banking, transferring, and retiring credits. Other provisions relevant to credit trading are also proposed.

High Carbon-Intensity Crude Oil (HCICO)

The current regulation contains a provision requiring regulated parties of petroleum-based fuels to account for their use of high carbon-intensity crude oil (HCICO) in their crude slates. The existing regulation employs a simple "bright line" approach to assigning carbon intensities to petroleum transportation fuels in California

[10] See http://www.arb.ca.gov/regact/2009/lcfs09/res0931.pdf.

(i.e., a crude is determine to either be a HCICO or a non-HCICO). Although the current approach has the benefit of being relatively simple, it has been suggested that, to reflect current market realities, a better approach be developed to account for a continuum of crude oil carbon intensities.

Accordingly, staff is proposing a new accounting approach that would require such regulated parties to account for: (1) the difference in carbon intensity between the LCFS compliance schedules and a specified baseline (i.e., the "baseline deficit"), and (2) the incremental difference in carbon intensity between the specified baseline and the actual carbon intensity of petroleum fuels used in California within a specified timeframe (i.e., the "incremental deficit"). In essence, this approach would require the California petroleum-refining sector to not only account for the carbon-intensity reduction that the compliance schedules would otherwise require relative to a specified baseline, but it would also require this sector to account for changes in the actual carbon intensity of petroleum fuels due to the use of HCICO feedstocks.

The proposal described above calls for the new approach to go into effect on January 1, 2013. Because there could be a lag between implementation of the new approach and the existing "HCICO/non-HCICO" provisions, the proposal also specifies a list of crude oils that the Executive Office has determined, in consultation with stakeholders and sister agencies, to be clearly non-HCICO feedstocks. This list would sunset when the new approach described above goes into effect.

Electricity Regulated Party Revisions

The Board directed staff in Resolution 09-31 to review the provisions applicable to regulated parties for electricity and propose amendments if appropriate. Since the regulation was approved by the Board, the markets for electric vehicles (EV) and EV fueling infrastructure have evolved and continue to evolve. To reflect this market evolution, staff is proposing amendments that would better define the potential regulated parties for electricity and the order of priority in which that status would be conferred. The proposal would apply to potential regulated parties such as electric utilities, non-utilities installing electric vehicle service equipment (EVSE) with a customer contract, fleet operators, and business owners.

Energy Economy Ratios

In Resolution 09-31, the Board directed staff to reevaluate the Energy Economy Ratios (EERs) for heavy-duty vehicles burning CNG or liquefied natural gas (LNG) vehicles and update them if appropriate. Accordingly, staff has reevaluated those EERs and proposes to revise them to reflect updated information. In addition, staff has reevaluated and proposes revisions to the EERs for light-duty battery electric vehicles (BEV), plug-in-hybrid electric vehicles (PHEV), and light-duty fuel cell vehicles. These proposed changes to the EERs, along with proposed changes to how they are used in the calculations specified in the regulation, reflect engine efficiency and fuel economy data that were not available during the original 2009 rulemaking.

Reporting Requirements

Staff proposes several amendments to various reporting requirements to simplify the provisions, including elimination of reporting energy volumes in "gasoline gallon equivalent" units and the reporting of renewable identification numbers (RINs). Similarly, staff also proposes to simplify reporting of significant figures by requiring such figures to be expressed in nearest whole units. Finally, staff proposes to require the use of the LCFS Reporting Tool (LRT) for reporting purposes. Although the current regulatory text does not explicitly require use of the LRT, it has become the *de facto* standard for reporting purposes, and staff's proposal would simply formalize this.

Miscellaneous Changes

The proposal contains a number of miscellaneous changes. This includes deleting the reference to the alternative fuel specification in the definitions of "compressed natural gas," "biogas," and "liquefied natural gas." Staff proposes this change to better reflect the GHG basis of the regulation. Further, staff proposes amendments that would codify a number of provisions specified in the LCFS regulatory advisories released to date. Finally, staff proposes a number of grammatical, typographical, or other non-substantial corrections.

Impacts of Proposed 2011 Amendments to LCFS Regulation

Environmental Impacts

The environmental analysis published in the 2009 LCFS ISOR focused on the significant GHG emission reductions that the regulation would achieve through the production and use of lower-CI transportation fuels. Staff estimated that a reduction of about 16 million metric tons of CO_2-equivalent ($MMTCO_2e$) would come solely from the combustion of transportation fuels in California in 2020. A thorough description of the estimated environmental impacts of the LCFS can be found in the 2009 LCFS ISOR; the assumptions and resulting analyses contained therein are still considered valid.

For the proposed amendments, staff has estimated that there are no significant adverse environmental impacts. Most of the proposed amendments – opt-in/opt-out, enhanced regulated party, credit trading mechanism, Method 2A/2B certification, etc. – are related to making the implementation of the LCFS run more smoothly. There may be environmental benefits related to additional credits generated and introduced into the LCFS credit market, as these credits may obviate the need for additional fuels to be produced at biorefineries. However, as a result of the proposed amendments we do not anticipate a substantive change in GHG emission reductions (there may be a slight increase in reductions due to changes to the baseline). Further, as a result of the proposed amendments, we do not anticipate local adverse environmental impacts.

Economic Impact

Staff estimates that the proposed amendments will generally have a positive economic impact on regulated parties, largely due to additional credits expected to be introduced into the LCFS credit market. Clarifications on opting into the LCFS, a credit-trading mechanism, enhanced regulated parties, and who gets electricity credits are all expected to attract additional credits to the LCFS program. These additional credits should keep credit prices lower than they would otherwise be, thus reducing compliance costs.

The proposed Method 2A/2B certification process will streamline the approval process for stakeholders while maintaining a transparent process. Staff expects the proposed amendments will have no fiscal impacts for federal, state, or local governments.

Analysis of Alternatives

Staff evaluated several alternatives to the proposed amendments. The alternatives are presented below:

1. Take no action (i.e., leave current regulatory language as is). As discussed in Chapter VII, Analysis of Alternatives, this alternative was deemed not feasible because it would not effectuate the various clarifications and enhancements contained in the staff proposal. Consequently, implementation of the regulation would not be as successful as it could be with the staff's proposed changes.

   For example, as noted previously, the proposed enhanced regulated party definitions and opt-in and opt-out provisions are intended to help encourage additional entities to participate in the LCFS regulation. In a number of cases, those proposed changes would help capture and bring into the LCFS credit market those credits that might otherwise be "orphaned" because their generators did not choose to enter into the program. Other refinements that would be foregone in a "no action" alternative would include updates to the EERs, changes to clarify and make transparent credit trading, and the streamlining benefits of converting the Method 2A/2B approval process from a rulemaking to a certification process.

   The two major substantive portions of the staff's proposal that would be adversely affected under a "no action" alternative would be the proposal's changes to the electricity regulated party provisions and the provisions for addressing the carbon intensity of petroleum crude oils and fuels derived from such crude oils. The no-action alternative would prevent the staff's proposed improvements to the electricity regulated party provisions. As noted earlier, the staff's proposal with regard to electricity regulated parties would better reflect the evolution of the EV sector since the 2009 approval of the LCFS regulation. Under the no-action alternative, these evolutionary changes in the EV market would not be reflected in the regulation, thereby depriving credits to those entities that would otherwise qualify for regulated party status under the staff's proposed changes. The no-action

alternative would also deprive consumers with the public education and other value-added benefits called for under the staff's proposal.

For petroleum regulated parties, the no-action alternative would mean that those entities would need to continue to meet the existing requirements for high intensity crude oil (HCICO). Because the HCICO provisions are tied to a 2006 crude slate or "basket," the no-action alternative would preclude adjustments to the HCICO provisions that would better reflect the petroleum market that has evolved since the original 2009 rulemaking. Just as important, the no action alternative would preclude the more accurate accounting of carbon intensities for petroleum crude that would occur under the staff's proposal versus the "bright line" HCICO approach in the current regulation that is based on the grandfathered 2006 crude basket approach.

For the above reasons, staff has determined that a no-action alternative is not feasible and would not accomplish the same objectives as the staff's proposal at the same or lower costs.

2. Staff evaluated the following options for designating the potential electricity regulated parties:

   - Designate electric utilities as potential regulated parties for all EV charging.
   - Designate EV owners as potential regulated parties for electricity delivered to their vehicles.
   - Omit potential default regulated parties.

   When evaluating these alternatives, staff kept three goals in mind. The first goal was to keep the proposed language simple to avoid confusion in regulated party designation and maintain relevancy as the EV-charging market evolves in future years. The second goal was to limit the number of regulated parties to increase the possibility that credits will be captured and made available to other regulated parties. The final goal was to maximize the number of credits captured and available for purchase.

   The first option – designate electric utilities as potential regulated parties for all EV charging – goes against the goal of maintaining relevancy as the EV charging market evolves in future years. Such designation cannot benefit potential charging equipment installers such as non-utility electric vehicle service providers, business owners, and EV fleet owners; therefore, this approach would discourage their efforts to establish the public and private charging networks which are critical to the future EV market.

   The second option – designate individual EV owners as potential regulated parties for electricity delivered to their vehicles – goes against the goal of limiting the number of regulated parties to increase the possibility that credits will be captured and made available to other regulated parties. It is much more difficult to keep track

of the credits from individual EV customers than from larger entities, such as the utilities.

The third option – designate a hierarchy of potential regulated parties without designating a default party – goes against the goal of maximizing the number of credits captured and available for purchase. Given the recordkeeping and other requirements in the LCFS regulation, there is a potential for significant amounts of credits to be "orphaned" or otherwise not captured and put into the credit trading market if the designated regulated party, such as a business owner with an onsite charger, fails to opt in. On the other hand, electric utilities have an inherent interest in being able to generate credits for electricity used for transportation. For this reason, among others, staff proposes to designate electric utilities as the default regulated party to ensure that credits are not orphaned.

3. Staff evaluated several alternative approaches for the treatment of HCICOs in the LCFS regulation:

   a. Current Approach with Amendments: Staff applies a screening mechanism to market crudes to identify crudes that are clearly non-HCICOs, then assigns a default CI value for crudes that are potential-HCICOs. Staff develops a process besides Method 2B to determine if potential-HCICOs are either non-HCICOs or HCICOs.

      Staff determined that this approach offered little benefit over the current approach.

   b. Hybrid California Average/Company-Specific Approach: The base deficit for individual companies is calculated the same as in the current regulation; however, individual companies only incur an incremental deficit if their own crude slate becomes more carbon-intensive over time relative to their crude slate refined in the baseline year.

      Although there is likely greater flexibility to purchase worldwide crude supplies for some companies than the current approach, this approach makes implementation more complicated due to the need for company-specific CI values each year. Staff does not have sufficient company-specific data to fully assess the impacts of this approach on individual oil companies.

   c. Company-Specific Approach: Each oil company would have distinct Lookup Table values and compliance targets for CARBOB and diesel, which are based on the crude slate refined by that company in California in the baseline year. Individual companies only incur an Incremental Deficit if their own crude slate becomes more carbon-intensive over time.

      As with the Hybrid Approach, this approach requires company-specific data that staff does not have. Furthermore, each oil company having its own CI values for

CARBOB and Ultra Low Sulfur Diesel (ULSD) in the market would be unnecessarily complex and discriminatory.

d. Worldwide Average Approach: This approach bases the average Lookup Table CI values for CARBOB and diesel and the compliance schedule on worldwide average crude oil production and refining emissions in the baseline year. An Incremental Deficit is applied to all companies if the worldwide average crude production and refining becomes more carbon intensive over time.

   Since crudes used by California refineries would have little, if any, impact on the CI value of the world average, this approach could result in significantly greater amounts of HCICO being used at California refineries because there is no effective incentive to avoid their use.

e. California Baseline Approach (Eliminate Consideration of HCICOs in the LCFS): All CARBOB and diesel would use the existing CI values in the Look Up Table. Regulated parties would only calculate and be subject to the Base Deficit for all CARBOB and diesel regardless of the crude oil used for refining. The Look-Up Table values for CARBOB and diesel would not be updated.

   This approach would eliminate the current HCICO provision. It does not account for, track, or mitigate increases in upstream emissions from crudes used by California refineries, and is therefore inconsistent with the lifecycle analysis basis of the LCFS. This approach could result in significantly greater amounts of HCICO being used at California refineries because there is no incentive to avoid their use.

I. INTRODUCTION

In this chapter, ARB staff provides a brief overview of the LCFS, information on the implementation of the LCFS program, and the regulatory process and actions taken to develop the staff's proposed amendments.

As noted, ARB staff is proposing various amendments to the LCFS regulation. The primary objectives of the amendments are to further clarify and enhance certain aspects of the regulation. These proposed amendments support the primary purpose of the LCFS, which is to reduce greenhouse gas (GHG) emissions by reducing the carbon intensity of transportation fuels used in California by 10 percent by 2020.

Additional information on the LCFS regulation and its underlying principles can be found in the 2009 staff report prepared for the adoption of the LCFS regulation.

A. Overview of the LCFS Regulation

On April 23, 2009, the Board approved the LCFS for adoption. The regulation became effective on January 12, 2010; additional provisions became effective on April 15, 2010. The first year of the program, 2010, was intended solely as a reporting year (i.e., for regulated parties to begin acclimating to the recordkeeping, reporting, and other administrative provisions by using the LCFS Reporting Tool (LRT), filing demonstrations of pathways, etc.). Actual implementation of the carbon intensity requirements and compliance schedules began on January 1, 2011.

The LCFS establishes two sets of performance standards that regulated parties must meet each compliance year. One set of annual standards is for gasoline and the alternative fuels that substitute for gasoline. The second set of standards is for diesel fuel and its substitutes. Each set of standards (i.e., "compliance schedule") is set to achieve an average 10 percent reduction in the carbon intensity of the statewide mix of transportation fuels by 2020.

The LCFS is based on the premise that each fuel has a "lifecycle" GHG emission value; subjecting this lifecycle GHG rating to a declining standard for the transportation fuel pool in California would result in a decrease in the fuel's lifecycle GHG levels. This lifecycle assessment (LCA) represents the GHG emissions associated with the production, transportation, and use of a given fuel in motor vehicles. The LCA includes direct emissions associated with producing, transporting, and using the fuels, as well as significant indirect effects on GHG emissions, such as changes in land use for some biofuels and other effects.

The LCFS standards are expressed in terms of the "carbon intensity" of gasoline and diesel fuel and their substitutes. Depending on the circumstances, GHG emissions from each step can include carbon dioxide (CO_2), methane, nitrous oxide (N_2O), and other GHG contributors. Moreover, the overall GHG contribution from each particular step is

a function of the energy that the fuel contains. Thus, carbon intensity is expressed in terms of grams of CO_2 equivalent per megajoule (g CO_2e/MJ).

Fuels Included in the LCFS

The LCFS applies, either on a compulsory or opt-in basis, to most types of fuels used for transportation in California, including:

- California reformulated gasoline;
- California ultra low sulfur diesel fuel;
- Compressed or liquefied natural gas;
- Electricity;
- Compressed or liquefied hydrogen;
- Any fuel blend containing hydrogen;
- Any fuel blend containing greater than 10 percent ethanol by volume;
- Any fuel blend containing biomass-based diesel;
- Neat denatured ethanol;
- Neat biomass-based diesel; and
- Any other liquid or non-liquid fuel not otherwise exempted from the regulation.

Fuel Pool Carbon Intensity Standards

The LCFS achieves GHG emission reductions by incrementally reducing the allowable carbon intensity of transportation fuel used in California. The LCFS does not limit the carbon intensity of individual batches of fuels, but it does require regulated parties to comply with an annual standard for the transportation fuel pool they provide. As noted, this annual standard is expressed as carbon intensity in units of g CO_2e/MJ. The allowable carbon intensity of transportation fuels decreases each year, starting in 2011, until the carbon intensities of gasoline and diesel transportation fuels (and their substitutes) in 2020 are each reduced by 10 percent relative to 2010. Gasoline and diesel follow similar carbon-intensity reduction curves from 2011 through 2020 and beyond.

A graphical representation of the compliance schedules is presented in Figures 1 and 2. Table 1 shows the compliance schedules for gasoline and diesel fuel.

Figure 1

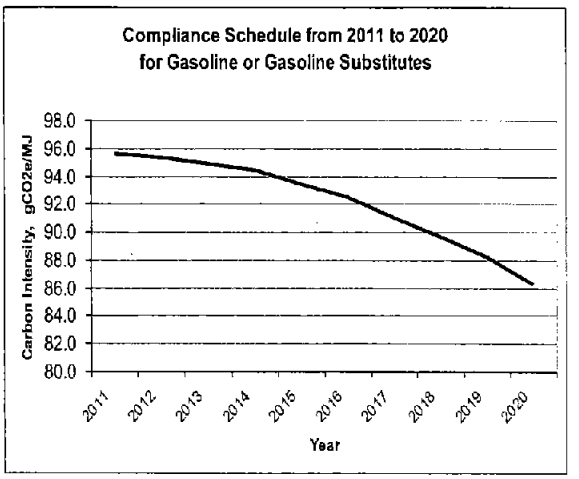

Figure 2

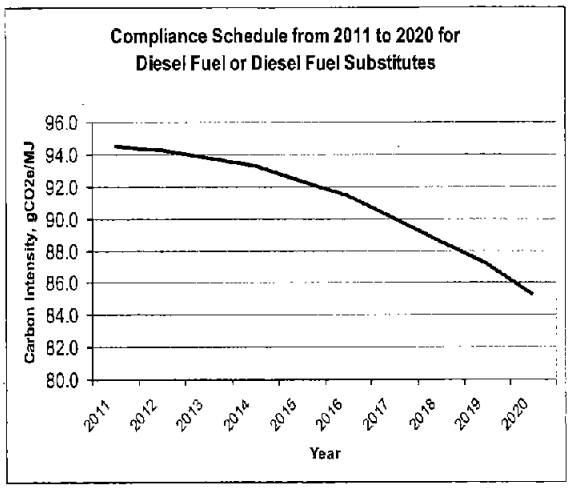

Table 1
LCFS Compliance Schedule

Year	Carbon Intensity for Gasoline and Fuels Substituting for Gasoline (g/MJ)	Gasoline and Fuels Substituting for Gasoline % Reduction	Carbon Intensity for Diesel and Fuels Substituting for Diesel (g/MJ)	Diesel and Fuels Substituting for Diesel % Reduction
2010	Reporting Only			
2011	95.61	0.25%	94.47	0.25%
2012	95.37	0.5%	94.24	0.5%
2013	94.89	1.0%	93.76	1.0%
2014	94.41	1.5%	93.29	1.5%
2015	93.45	2.5%	92.34	2.5%
2016	92.50	3.5%	91.40	3.5%
2017	91.06	5.0%	89.97	5.0%
2018	89.62	6.5%	88.55	6.5%
2019	88.18	8.0%	87.13	8.0%
2020 and subsequent years	86.27	10.0%	85.24	10.0%

Under the LCFS, the carbon intensity for alternative fuels (biofuels, natural gas, hydrogen, electricity) would be judged against either the gasoline or diesel carbon intensity standards, depending on whether the alternative fuel is used for light- or medium-duty vehicles or for heavy-duty vehicles, as specified in the regulation. In each year, the carbon intensity of each fuel is compared to the LCFS standard for that year.

Fuels that have carbon intensity levels below the standard generate credits. Fuels with carbon intensity above the standard create deficits. To comply with the LCFS for a given year, a regulated party must show that its banked total amount of credits equal or exceed the deficits incurred. Credits can be banked or sold to other regulated parties.

Determination of Carbon Intensity Values

The carbon intensity values represent the currency upon which the LCFS is based. The carbon intensity is determined in two parts. The first part represents the direct GHG emissions associated with producing, transporting, and using the fuel. This involves determining the amount of GHG emissions emitted per unit of energy for each of the steps in the fuel pathway. For example, these steps may involve the following for the production of ethanol:

- Farming practices (e.g., frequency and type of fertilizer used).
- Crop yields.
- Harvesting of the crop.
- Collection and transportation of the crop.
- Type of fuel production process.
- Fuel used in the production process (e.g. coal/CNG/biomass).
- Energy efficiency of the production process.
- The value of the co-products generated (e.g. distillers grain).
- Transport and distribution of the fuel.
- Combustion of the fuel in vehicles.

The second part considers any other significant effects, both direct and indirect, that are caused by the change in land use or other market-mediated effects. For some crop-based biofuels, staff has identified land-use change as a significant source of additional GHG emissions. No other significant indirect effects that result in large GHG emissions have been identified that would substantially affect the LCFS framework for reducing the carbon intensity of transportation fuels.

A more complete description of how the LCFS regulation is designed to work, as well as its underlying scientific and economic principles, can be found in the initial and final statements of reasons for the original 2009 rulemaking.[11]

B. Implementation Status of the LCFS Program

Since the LCFS was approved by the Board in April 2009, staff undertook several collaborations with stakeholders to help ensure the smooth launch of the program. First, staff convened an Expert Workgroup to compile and assess subsequent developments in the field of indirect effects analysis. The Expert Workgroup provided

[11] See www.arb.ca.gov/regact/2009/lcfs09/lcfsisor1.pdf, www.arb.ca.gov/regact/2009/lcfs09/lcfsisor2.pdf, and www.arb.ca.gov/regact/2009/lcfs09/lcfsfsor.pdf.

recommendations on how best to incorporate such developments into the next iteration of the LCFS regulation. These efforts have helped focus staff's work on updating the indirect land-use change (iLUC) carbon-intensity values, which as noted below, will be proposed in a 2012 rulemaking after that work has been completed. Second, the staff convened a working group to evaluate developments in the field of sustainability. While it is unclear at this time whether the final deliverable of that ongoing effort will be regulatory or advisory in nature, the important work being conducted by that working group will help inform future versions of the LCFS. Third, as discussed in more detail later in this chapter, staff convened the LCFS Advisory Panel in early 2011. While the mandate of this panel is to evaluate and advise staff on high-level policies related to the LCFS, several of those evaluations helped inform the changes that staff is proposing in this Staff Report.

As noted, implementation of the compliance schedules and carbon intensity requirements began on January 1, 2011. Since early 2010, the LCFS has mandated that all regulated parties report required data on a quarterly and annual basis. To facilitate the electronic reporting of vast amounts of transactional data, ARB staff developed an on-line LCFS Reporting Tool (LRT) for the reporting of fuel volumes and other data to the State. The LRT is a secure, web-based data collection and report generation application designed to accommodate the submittals of all required information and help regulated parties meet the reporting requirements of the LCFS.

The LRT has been operational since early 2010 and has been used by regulated parties in its full production mode since December 2010. The LRT is readily accessible for electronic reporting by all regulated parties.[12] To date, a total of 70 entities have registered as regulated parties and have used the LRT exclusively for reporting during 2010 and the first quarter of 2011. These regulated parties have used the LRT for both manual fuel-transaction data entry via the user interface and through XML data file upload submission. Because the LRT has been the only means regulated parties have used for LCFS reporting, it has become the *de facto* method for electronic reporting.

Based on staff's review of reported first quarter 2011 data, it appears that regulated parties are able to generate substantial LCFS credits at this early stage of the program. During the first quarter of 2011, regulated parties reported generating about 225,000 metric tons of LCFS credits. On the other hand, regulated parties reported incurring about 150,000 metric tons of LCFS deficits. Additional results from staff's review of first quarter 2011 reports from the LRT are shown in Appendix B.

A healthy LCFS program depends on having a robust credit market and participants with confidence in a market that has clarity, certainty, transparency and accountability. Despite the number of credits generated in first quarter 2011, staff has determined that additional clarity and improvements to certain aspects of the regulation are needed to ensure an even more successful implementation of the program.

[12] See www.arb.ca.gov/lcfsrt.

To this end, the proposal's inclusion of specific opt-in/opt-out procedures, as well as enhancements to the biofuel and electricity regulated-party provisions, should increase both participation in the LCFS program and the generation of LCFS credits. Similarly, the proposal's credit trading provisions will provide certainty, clarity, transparency, and accountability to credit transactions, thereby increasing confidence in the credit market. Further, the proposal's certification procedure for taking action on Method 2A/2B submittals, without invoking a full rulemaking process, is expected to encourage further innovations that reduce carbon intensities. This, in turn, should help widen the range of biofuels and alternative fuels available for regulated parties to choose for their transportation fuel pools. Finally, the proposed update to the EER values and the HCICO refinements will help ensure that the regulation reflects the most up-to-date information and accounting/screening techniques.

C. Development Process for the Proposed Amendments

During the rulemaking process, ARB staff conducted three public workshops, several workgroup meetings, and numerous meetings with individual stakeholders to discuss the proposed amendments and address various concerns that were raised. ARB staff provided ample opportunities for stakeholders to comment on and present information about the proposed amendments. Meeting attendees included transportation fuel providers and importers, environmental groups, academia, and other interested persons. These individuals participated both by reviewing draft regulations and supporting documentation, providing data, and participating in workgroup meetings.

As noted, ARB staff established a number of workgroups, including the electricity, crude oil screening, and LCFS Reporting Tool workgroups, to address topic-specific concerns and suggested improvements raised by stakeholders during the rulemaking process.[13] Table 2 on the following page lists dates for the meetings that were held to apprise the public about the proposed amendments and other related developments.

[13] See http://www.arb.ca.gov/fuels/lcfs/workgroups/workgroups.htm for a compilation of the workgroups convened by ARB staff and the materials presented to and discussed with the workgroups.

Table 2: LCFS Workshop/Workgroup and Public Outreach Meetings

Meeting	Date	Location	Time
LCFS Proposed Amendments Public Workshops			
First Public Workshop	July 22, 2011	Cal/EPA Building, Coastal Hearing Room	9:00 a.m.
Second Public Workshop	September 14, 2011	Cal/EPA Building, Sierra Hearing Room	1:00 p.m.
Third Public Workshop	October 14, 2011	Cal/EPA Building, Sierra Hearing Room	1:00 p.m.
LCFS Electricity Workgroup (EWG) Meetings			
EWG Meeting	July 14, 2010	Cal/EPA Building, Conference Room 610	1:00 p.m.
EWG Meeting	October 26, 2010	Cal/EPA Building, Conference Room 610	1:00 p.m.
EWG Meeting	July 11, 2011	Cal/EPA Building, Conference Room 610	2:00 p.m.
LCFS High Carbon Intensity Crude Oil (HCICO) Screening Workgroup Meetings			
HCICO Workgroup Meeting	March 29, 2010	Cal/EPA Building, Conference Room 620	12:00 p.m.
HCICO Workgroup Meeting	May 6, 2010	Cal/EPA Building, Conference Room 620	9:00 a.m.
HCICO Workgroup Meeting	June 16, 2010	Cal/EPA Building, Conference Room 620	12:30 p.m.
HCICO Workgroup Meeting	July 14, 2010	Cal/EPA Building, Conference Room 610	3:30 p.m.
HCICO Workgroup Meeting	September 9, 2010	Cal/EPA Building, Conference Room 620	9:00 a.m.
HCICO Workgroup Meeting	February 17, 2011	Cal/EPA Building, Conference Room 620	9:00 a.m.

Over 7,100 individuals or companies were notified for each workshop/hearing. Notices for the public meetings were posted to ARB's LCFS websites (informational portal and public meetings/workshops) and e-mailed to subscribers of the "LCFS" list serve. The public workshops were webcast live whenever possible. In addition, ARB staff participated in numerous stakeholder meetings, presenting information on the implementation of the current regulation and the proposed amendments.

To increase public participation and enhance the information flow between ARB and interested parties, staff created the LCFS informational portal website (http://www.arb.ca.gov/fuels/lcfs/lcfs.htm). Since that time, staff has consistently made available online materials related to this rulemaking, including meeting presentations and draft regulatory language. The website has also provided background information

on the LCFS, workshop and meeting notices and materials; other GHG related information; and links to other websites with related information.

Beyond the public and workgroup meetings noted above, staff's outreach efforts also included numerous personal contacts via telephone, electronic mail, regular mail, surveys, facility visits, and individual meetings with interested parties. These contacts included regulated parties, transportation fuel providers, marketers, importers, environmental, community, public health organizations, and other entities.

As noted previously, ARB staff also worked in parallel with the LCFS Advisory Panel. Its mandate is to assist ARB staff in reviewing specific aspects of the LCFS program's implementation; staff is to present the results of its two program reviews, with the Advisory Panel's input, to the Board by January 1, 2012 and January 1, 2015.

The staff's work with the Advisory Panel is ongoing. Because the Advisory Panel's purview generally covers high-level policy topics, it was not an appropriate forum for discussing technical details and minutiae in the LCFS regulation. Nevertheless, the discussions with the Advisory Panel were helpful in focusing staff's work to refine the proposal's changes to the regulatory text in a number of areas.

Finally, it should be noted that the proposal does not reflect the staff's ongoing work to update the indirect land-use change analysis (iLUC),[14] which was considered too preliminary at the time of this Staff Report's release to support a proposed amendment to the indirect carbon intensity values. This ongoing work is expected to be completed during the latter half of 2012, at which time the staff expects to propose regulatory amendments, if appropriate, to reflect the completed update.[15]

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[14] See Chapter IV, section C, of the 2009 LCFS staff report (http://www.arb.ca.gov/regact/2009/lcfs09/lcfsisor1.pdf) at IV-16 through IV-48 for a general discussion of iLUC analysis. The current work is evaluating advancements in the iLUC analysis for corn ethanol, sugarcane ethanol, and soybean biodiesel.

[15] See http://www.arb.ca.gov/fuels/lcfs/lcfs_meetings/lcfs_meetings.htm for presentations and materials discussed to date related to the iLUC work.

II. NEED FOR PROPOSED AMENDMENTS

As noted, the primary objectives of the proposed amendments are to clarify, streamline, and enhance certain provisions of the regulation. It should be emphasized that the proposal involves refining and improving certain aspects of the regulation and that the vast majority of the regulation remains unchanged by this proposal. Therefore, this ISOR builds on the comprehensive and extensive work that was done in support of the original 2009 LCFS rulemaking,[16] which generally remains applicable to this proposal, and this ISOR addresses only the proposal's incremental changes.

Staff developed these proposed amendments to support the overall purpose of the LCFS. The proposed amendments address several aspects of the regulation, including: reporting requirements, credit trading, regulated parties, opt-in and opt-out provisions, definitions, and other clarifying language. A summary description of each of the proposed amendments is provided in Chapter IV, Proposed Amendments.

After the Board approved the LCFS for adoption on April 23, 2009, the regulation entered into full effect on April 15, 2010. Implementation of the carbon intensity reduction requirements and compliance schedules began on January 1, 2011. As noted, implementation of the LCFS has generally been without significant issues. However, as with most complex regulations, there is always room to improve the LCFS.

There are several factors driving the staff's proposed amendments. First, based on stakeholder comments received in the original 2009 rulemaking, the Board directed staff in Resolution 09-31 to consider revisions to the regulation in a number of specific areas. These included updates to the Energy Economy Ratios (EERs), conversion of Method 2A/2B reviews into a certification process, and a reevaluation of the electricity regulated-party provisions. Second, staff solicited and encouraged feedback from regulated parties and other stakeholders throughout the LCFS' implementation. This feedback directly informed the staff's refinements contained in this proposal. Finally, staff conducted internal reviews of lessons learned since implementation began. For example, these reviews lead to the proposal to enhance the regulated party definitions and provisions, credit trading provisions, and opt-in/opt-out procedures.

With the above drivers, staff was able to identify specific areas of the regulation for clarification and other improvements. These proposed improvements are expected to better ensure the successful implementation of the LCFS program. Beyond this proposal, staff will continue to monitor implementation of the LCFS and developments in fields, such as credit trading, land use change analysis, and high carbon intensity crudes, to help shape further refinements in future iterations of the LCFS.

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[16] See the initial statement of reasons (http://www.arb.ca.gov/regact/2009/lcfs09/lcfsisor1.pdf and http://www.arb.ca.gov/regact/2009/lcfs09/lcfsisor2.pdf) and final statement of reasons (http://www.arb.ca.gov/regact/2009/lcfs09/lcfsfsor.pdf) for the original 2009 LCFS rulemaking, all of which are incorporated herein by reference.

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III. TECHNOLOGY ASSESSMENT

The staff report for the original LCFS rulemaking clearly showed the basic regulation to be technologically feasible.[17] Accordingly, this chapter discusses the technical feasibility of meeting the proposed amendments. Because there are no new fuel pathways and no new scientific modeling in this proposal, the amendments do not require regulated parties to use new technologies in order to comply. Staff has identified no technological barriers that would prevent regulated parties from meeting the proposed changes. As noted, the proposal is generally aimed at streamlining the LCFS, increasing its flexibility, and making the program implementation operate more smoothly. The following summarizes the technological feasibility of the major proposed changes; additional details are provided in Chapter IV, Proposed Amendments.

Opt-In/Opt-Out and Enhanced Regulated Party Provisions

The current regulation allows for regulated parties of low CI fuels to opt into the program. However, there are no provisions explaining how opting in is to be accomplished. The staff's proposed changes are intended to address this and bring more voluntary participants into the program. The proposed changes will clarify the circumstances under which existing participants would be designated as the regulated party for a specific volume of fuel.

There are no complex technologies required for a regulated party to opt in. Under the proposal, opting into the LCFS program simply requires registration as a regulated party through the LRT online program. As noted previously, the LRT is readily accessible through ARB's website (https://ssl.arb.ca.gov/lcfsrt/Login.aspx). Regulated parties can use a standard web browser to access the LRT, such as Firefox®, Internet Explorer®, Safari®, Opera®, and other popular browsers. For those eligible, opting out of the regulation would only require that email and hardcopy notices be submitted to ARB staff for confirmation. Based on these considerations, this proposed amendment was found to be technologically feasible.

Mandatory LRT Use

As noted, the LRT has become the *de facto* method for regulated parties to electronically submit their required quarterly and annual reports. ARB staff is not aware of any regulated party's inability to access and use the LRT through ARB's website.

The next generation LRT is under development. Currently, known as the LCFS Central Information System (L-CIS), it will be a more interactive workspace for regulated parties to meet their regulatory needs. The system will be designed to incorporate Method 2A/2B submittals, credit transactions, and voluntary biorefinery and opt-in fuel producer registrations. Until the L-CIS is operational, regulated parties can provide the

[17] See Staff Report: Initial Statement of Reasons, Proposed Regulation to Implement the Low Carbon Fuel Standard, Vol. I (March 5, 2009), at ES-7 and III-1 through III-22.

required information via electronic or regular mail submittals; the proposal does not refer to or otherwise rely on the existence of the L-CIS.

Method 2A/2B Certifications

The proposal to convert the current rulemaking process for approving Method 2A/2B submittals into a certification process does not involve any technological requirements other than the requirement for applications to be electronically submitted. Such submittals are readily achieved through the use of standard email programs or by submitting an application package on a compact disk or other electronic media.

Credit Trading

The information required to be reported under the proposed amendments will, in the short term, be processed manually by ARB staff. Upon receipt of the required information (via electronic or regular mail submittal), staff will process the information and manually input the relevant transactional data into the LRT accounts for both buyers and sellers. As noted, the next-generation LRT (L-CIS) will be designed to handle this transactional information electronically and automatically, but there are no requirements in the proposed amendments that refer to or otherwise rely on the L-CIS.

Electricity Regulated Party Provisions

The proposal specifies requirements for various entities to qualify for electricity credits. Depending on the circumstances, these requirements may include one or more of the following:

- Use all credit proceeds as direct benefits for current electric vehicle (EV) customers.
- Provide rate options that encourage off-peak-charging and minimize adverse impacts to the electric grid.
- Educate the public on the benefits of EV transportation through outreach efforts such as holding public meetings, providing EV dealership flyers, utility customer bill inserts, radio or television advertisements, and publishing EV-relevant webpage content.
- Report annually a summary of the above efforts, as well as an accounting of the number of EVs known to be operating in the service territory.

The above list does not impose requirements involving any technologies above and beyond standard telecommunications, word processing, and internet/web publishing programs that are readily accessible to the general public and businesses.

HCICO

The HCICO provisions in the proposal simply dictate how a regulated party, with HCICO-derived fuel in its fuel pool, would account for that HCICO when calculating its credits and deficits. There are no special technologies required to conduct the

proposed changes to the crude oil CI accounting. Typically, such regulated parties would be a small group of petroleum refineries and marketers. Thus, the HCICO provisions basically entail nothing more complicated than careful recordkeeping, reporting, and accounting, which refineries presumably do already using currently available accounting software. While regulated parties may need to better understand the origins of their HCICO-derived fuels, staff is unaware of any special technologies that would be required for a regulated party to perform these actions.

EER Updates

The energy economy ratio (EER) refers to the unitless multiplier that is used to account for differences in energy efficiency among different types of fuels and vehicles. The EER is defined as the ratio of the number of miles driven per unit energy consumed for a fuel of interest to the miles driven per unit energy for a reference fuel. For purposes of the LCFS, the reference fuel is gasoline for light- and medium-duty vehicles, and diesel for heavy-duty vehicles. Thus, the EER for light-duty vehicles for a given fuel is defined as the ratio of the miles driven per energy consumed for that fuel to the miles driven per energy consumed for a comparable vehicle using gasoline. Therefore, the EER for gasoline is always 1.0 for light- and medium-duty gasoline-powered vehicles; similarly, the EER for diesel is always 1.0 for diesel-fueled heavy-duty vehicles.

In this proposal, staff is updating the EERs for a number of alternative fuels, including battery electric vehicles (BEV), plug-in hybrid electric vehicles (PHEV), fuel cell vehicles, and heavy-duty compressed natural gas (CNG) or liquefied natural gas (LNG) vehicles.[18] In the original 2009 rulemaking, the data for these fuels were relatively limited.[19] Since then, a number of vehicles have come into the market using these fuels. This influx of new alternative-fueled vehicles has allowed staff to use more real-world, fuel-economy data for those vehicles to update their EERs. This is explained in more detail in Chapter IV, Proposed Amendments.

Because staff's proposal is based on actual alternative-fueled vehicles that are commercially available, the proposed changes to the EERs are clearly technologically feasible. Moreover, there are no technologies required for regulated parties to meet these updated EER values; the values are simply inputs in the credit/deficit calculations specified in the regulation.[20] Because the LCFS does not regulate the EERs but simply lists them, there are no technologies required to be used by vehicle or engine manufacturers.

[18] These EERs can be found in Cal. Code Regs., tit. 17,§ 95485(a)(3), Table 5.
[19] See Staff Report: Initial Statement of Reasons, Proposed Regulation to Implement the Low Carbon Fuel Standard, Vol. I (March 5, 2009), at ES-18.
[20] See Cal. Code Regs., tit. 17,§ 95485(a)(3)(A) and (B).

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IV. PROPOSED AMENDMENTS

In this chapter, we provide a discussion of each of the major proposed amendments. All section references are to the LCFS regulation (13 CCR 95480-95490) unless otherwise noted.

A. Opt-In and Opt-Out Provisions

Section 95480.1(b) currently identifies specific low-CI fuels that are exempt from the LCFS program. Although the language allows providers of these fuels to opt into the program to generate credits, it does not specify a procedure for voluntarily opting in or opting out. Consequently, there are a number of providers of biogas and other exempted, low-CI fuels (i.e., those that already meet the 2020 CI standards) that want to opt into the LCFS but are reluctant to do so at this time; among the reasons they cite for their reluctance is the lack of a specified opt-in/opt-out procedure.

In addition, there are a number of out-of-state producers and intermediates that have expressed a similar desire to voluntarily opt into the regulation in order to become regulated parties. However, the existing regulatory text does not allow such out-of-state entities to become regulated parties due to jurisdictional concerns. Because such producers are not currently able to become regulated parties, they must sell their fuels without the ability to retain the compliance obligation (and hence retain the credits); if the product is sold to an importer to California, that importer would be designated the regulated party under the existing rule. If these producers and intermediates are allowed to voluntarily enter the LCFS program as regulated parties, they would be able to sell their fuels and retain all or part of the credits generated from their low-CI fuels.

Accordingly, staff is proposing changes that would address these concerns. First, staff proposes to include a new section 95480.2, which would identify and establish specific criteria for voluntarily entering the LCFS program (i.e., criteria that would apply to persons wishing to opt into the program). In addition to the fuel providers specified in section 95480.1(b), this new section would allow out-of-state producers of oxygenate (e.g., ethanol) or biomass-based diesel to opt into the program. Further, the new section would allow intermediate entities downstream of the out-of-state producer to also opt into the program under prescribed conditions. Finally, this new section would allow for gas suppliers to opt into the program, under specified conditions, in lieu of California compressed natural gas (CNG) fueling station owners, if such station owners have not otherwise elected to opt into the program. Allowing the gas suppliers to opt into the program under the specified conditions will help ensure that potential LCFS credits are not "orphaned" if the fueling station owners choose not to opt into the program.

Second, staff proposes a new section 95480.3, which would specify the actual procedure for opting into and out of the LCFS program. This procedure would be available for those persons who are qualified to opt in under new section 95480.2.

Opting in would simply require a qualified person to register as the regulated party for the fuel of interest.

This new section 95480.3 would also specify the options available for the opt-in regulated party to select the applicable CI value for its fuel. Basically, in addition to the standard options (Methods 1, 2A, and 2B) that are available to other regulated parties, opt-in regulated parties for low-CI fuels subject to section 95480.1(b) would have a third option of choosing the 2020 endpoint CI values for the gasoline or diesel compliance schedules. In other words, if an opt-in regulated party for CNG, for example, does not want to choose Method 1 (or there are no applicable CI values in the Lookup Table), and it wants to avoid submitting a Method 2A/2B application for a new/modified fuel pathway, the regulated party can choose either the 2020 CI target for gasoline (86.27 gCO2e/MJ) or diesel (85.24 gCO2e/MJ), whichever applies. This is because the fuels, including CNG, which are subject to section 95480.1(b) are presumed to already meet the 2020 CI standards.

As noted, new section 95480.3 would specify the procedure for opting out. The proposed procedure would specify 90-day pre-opt out notification, verification that the opt-out occurred on that date, and post-op-out notification and reporting requirements. The proposal would also require recordkeeping consistent with the recordkeeping requirements already specified in the regulation for all regulated parties.

Third, the expansion of potential opt-in entities, especially for qualified intermediates, raises the possibility of multiple parties inadvertently registering and reporting themselves as the regulated party for the same volume of fuel. Therefore, staff proposes a new section 95480.4 that would establish a clear procedure for the Executive Officer (EO) to use in determining which party can validly claim to be the regulated party in that situation. Essentially, the proposal would look first at any contracts between the parties of interest to see if the agreements identify the proper regulated party. In the absence of clear contract language, the EO would then look at the regulatory language and apply the priority scheme contained therein. Finally, in case neither of these approaches works, the proposal would assign regulated party status based on a specified default. While the EO's determination is underway, any credits subject to multiple claims of regulated party status will be held in escrow for a maximum of 30 business days.

Thus, for fuels produced outside California, the regulatory text would effectively assign initial regulated party status in the following order of priority (unless written contracts between the parties stipulate otherwise):

1. Out-of-state producer (if the producer opts in);
2. Intermediate entity downstream of the out-of-state producer (if the producer transfers compliance obligation to the intermediate and other requirements in 95480.3 are met); and
3. Importer (if neither 1 nor 2 applies).

Finally, staff proposes a new section 95480.5 that would make it clear that registration as a regulated party (in this case, as an opt-in regulated party) would establish that person's consent to be subject to California jurisdiction. This new section would also establish a person's consent to be subject to California jurisdiction if the person receives proceeds from a credit transaction.

B. Enhanced Regulated Party

The existing LCFS regulation places compliance obligations initially on California fuel producers and importers. Section 95484 of the regulation specifies the criteria under which a person would be deemed a regulated party for each particular fuel and how the responsibility for complying with the LCFS can be transferred. As currently worded, the regulation provides for the transfer of compliance obligation to flow "downstream" from the initial regulated party; it does not permit the compliance obligation to flow "upstream" to intermediates and the out-of-state producer.

As noted above in "Opt-In and Opt-Out Provisions," staff is proposing changes that would allow out-of-state producers to voluntarily enter the LCFS program by becoming the initial regulated party. Consistent with this proposal, staff is also proposing to change the definition of "producer" so that it also encompasses out-of-state producers (the current definition includes only California-based producers).

Further, based on stakeholder comments received,[21,22] staff is proposing revisions to the definition of "importer" to include, as potential initial regulated parties, those entities that own title to a product at the point the equipment has entered California. The existing regulation confers initial regulated party status to importers if those persons own title to the fuel when it is received at the "import facility," so this proposed change would impart the regulated party status on the person who owns the product in the transportation equipment that held or carried the product, when it entered California. Staff proposes to delete the definition of "import facility" since the definition of "importer" no longer references "import facility."

C. Method 2A/2B Certification

When the Board approved the LCFS in April 2009, the regulation contained both fuel pathway Lookup Tables and a formal process for adding pathways submitted by stakeholders to those tables. The Lookup Tables (Tables 6 and 7, section 95486(b)(1)) house the carbon intensities of the fuel pathways that the Board approved. Section 95486(c) and (d) establish the procedures regulated parties and other entities must follow in order to add new pathways to the Lookup Tables. Those procedures consist of a formal application process in which the applicant calculates a pathway

[21] Robert Whiteman, POET Ethanol Products, July 29, 2011. Comment letter to ARB providing specific information about how liquid biofuels are currently being delivered into California.
[22] Jessica Wiechman, Renewable Products Marketing Group, Inc. (RPMG), August 5, 2011. Comment letter to ARB regarding Midwest biofuel industry.

carbon intensity value, using the California Greenhouse gases, Regulated Emissions, and Energy use in Transportation (CA-GREET) model, and provides ARB staff with sufficient supporting documentation to recommend the proposed pathway carbon intensity for approval by the EO.

Because the Lookup Tables are contained in the LCFS regulation, making changes to them (i.e., adding a new fuel pathway) would require a full rulemaking process pursuant to the Administrative Procedure Act (APA)[23].

As with most ARB rulemakings, the approval of new or modified fuel pathways for incorporation into the Lookup Tables would require an initial and final statement of reasons, at least one formal comment period (generally a 45-day period), and a public hearing. Substantive changes proposed after the start of the formal comment period would entail additional comment periods. Thus, a typical rulemaking would take from six to 12 months during the formal rulemaking phase. This doesn't include the approximate 30 to 90 days of working with an applicant, before the formal comment period begins, to prepare the application. Based on the potential efficiency gains and in recognition that the activities to process and evaluate Method 2A/2B applications are becoming more routine, the Board directed staff under Resolution 09-31 to investigate the feasibility of converting the rulemaking process for the approval of new or modified pathways into a more streamlined certification process.

While the certification program described in this Chapter was under development, the Board issued Resolution 10-49, which directed staff to develop a process whereby Method 2A and 2B applicants could use their proposed pathway CIs once staff recommended them for approval. Approval recommendations are issued well before the applications can be heard before the EO. Accordingly, guidance clarifying this policy was issued in December of 2010 in the form of LCFS Regulatory Advisory 10-04. Under that Advisory, Method 2A and 2B applicants are able to use their proposed CIs as soon as staff recommends them for approval and posts them to the LCFS web site.

Regulatory Advisory 10-04 allows applicants to temporarily use the CIs for which they apply while the rulemaking process is underway, but does not expedite the final approval process. Nor does it alleviate the substantial ARB staff workload associated with the regulatory change process. Importantly, it also does not fulfill the Resolution 09-31 directive to develop a certification program. As such, the Regulatory Advisory 10-04 process amounts only to a temporary measure.

Proposed Certification Process

This section provides a brief, plain English summary of the major elements of the proposed certification process. Because the certification process itself is highly detailed and comprehensive, the reader is directed to Appendix A (Proposed Regulation Order) for exact details on the proposed regulatory text.

[23] Government Code section 11340 et seq.

Under the existing regulation, a regulated party can use a CI value from the Lookup Tables that applies to that person's fuel pathway (subject to approval by the EO). Alternatively, the regulated party can submit a Method 2A/2B application for EO certification of the new or modified pathway. As part of the approval process, the EO would issue an Executive Order for the fuel pathway covered by the certification. The Executive Order would apply only to the applicant and its certified fuel pathway(s).

1. Application Submission Requirements

The staff's proposal would require applications, in order to be deemed complete, to contain extensive and detailed information about the applicant's proposed fuel pathway. As noted, the detailed information that would be required in the submittal is specified in the proposed regulatory text.[24] This high level of detail is derived from ARB staff's experience with the Method 2A/2B review process to date. Based on that experience, the staff's proposal specifies a level of detail in the required information that staff believes is necessary for the EO to make the determination that the application is based on robust, scientifically defensible and credible information. Further, for Method 2A applications, the information is necessary for the EO to make the determination that the application represents an innovation that meets the regulation's substantiality requirements.

A primary concern in the application process is the protection from disclosure of confidential business information (CBI). On the other hand, this concern must be balanced with the need to maintain transparency and give the public a meaningful opportunity for comment and review of the proposed fuel pathway. To balance these concerns, the proposed application process would require the applicant to submit a fully detailed application, including all required information, for ARB staff's review. At the same time, the proposal would require the applicant to also submit a version of the application with the CBI redacted to the extent that would still allow for meaningful public review. The process would require applicants to clearly identify the specific information for which confidentiality is sought.

2. Application Evaluation Procedure

The proposal specifies that, within 30 calendar days after receiving an application designated by the applicant as a final, evaluation-ready copy, ARB staff will advise the applicant in writing that it is either complete or that specified additional information is required to make it complete. Within 30 calendar days from the request for additional information, ARB staff will again advise the applicant in writing that the application is either complete or that specified additional information is still required before it can be deemed complete. The proposal does not specify how many times this cycle can be repeated, but the application can be denied if staff determines that the required information is not forthcoming. Even if an application packet has been deemed complete, the proposal provides ARB staff with the ability to request additional

[24] See section 95486(f)(3)(C) of the proposed regulation order.

information and clarification, if needed, as staff's analysis of the application packet proceeds. This may be needed, for example, if staff's analysis of an application already deemed complete raises additional issues that need to be addressed.

The proposal specifies that the formal evaluation will last no more than 90 calendar days. Because each application is unique and may present unforeseen challenges, the proposal provides for the possibility of pausing staff's evaluation while staff works with the applicant to resolve such issues. This allows the evaluation process, once the issues have been resolved, to resume at about the point where it left off.

Under the staff's proposal, the evaluation of complete Method 2A and 2B applications will generally involve the following steps:

- Staff attempts to replicate the applicant's carbon intensity calculations;
- Staff attempts to replicate the energy consumption inputs to the carbon intensity calculations using the energy purchase and fuel production data in the application;
- Staff evaluates the production information submitted by the applicant for consistency, both with itself (internal consistency) and with every other item in the application (external consistency). Consistency is required in all areas, not only those that directly contribute to the calculation of the pathway carbon intensity; and
- Staff evaluates the documentary basis of all data and assumptions that are not verifiably derived from the energy consumption and fuel production data included in the application packet.

If any of the steps outlined above cannot be complete due to a discrepancy or other issue, the evaluation will be suspended until the discrepancy or issue can be resolved.

3. Pathway-Specific Requirements

The proposal provides for specific requirements that apply to certain types of pathways. These requirements will minimize the exercise of discretion in the evaluation of the applications in these categories and help assure consistent outcomes across different applicants.

a. Most fermentation-based pathways (e.g., corn ethanol) yield a co-product known as distillers grains with solubles (DGS), which the applicant may sell at varying levels of moisture content. Many fuel operations will vary DGS drying over time to reflect market conditions. In order to assure that all drying energy for different levels of DGS dryness are accounted for, applicants who sell DGS at more than one dryness level will be required to calculate their pathway CI (or CIs) using one of the following methods:

   i. General approach (most applicants): Calculate a single CI that reflects the maximum foreseeable production of fully and partially dried DGS, reflecting the total plant energy consumed while DGS is being dried at the maximum foreseeable rate. The applicant can average plant energy consumption on either

a monthly or an annual basis. However, any ethanol associated with the production of dry or partially dry DGS, in excess of the quantities used to calculate the plant's pathway CI, cannot be sold in California under the approved pathway. For example, the approved CI may be based on drying 75 percent of the total DGS stream, calculated as an annual average. After the pathway has been approved, if 80 percent of the ethanol is dried in any given year, the ethanol associated with the production of 80 percent dry DGS cannot be sold in California under the approved CI. The approval issued by the EO will, in fact, include an operational condition stating that the production of dry or partially dry DGS shall never exceed the quantities on which the approved CI is based.

ii. Alternative approach: An applicant with a plant that has DGS dryers equipped with functional and accurate gas gauges may apply for separate CIs for each DGS dryness level. This is provided the applicant is able to accurately associate every gallon of ethanol produced with a specific DGS dryness level. Dryer gas gauge readings will be used to precisely calculate the drying energy consumed for each DGS dryness level. These energy consumption levels will be added to baseline (100 percent wet DGS) levels to calculate DGS-specific carbon intensities. The applicant must then demonstrate, to ARB staff's satisfaction, that each gallon of ethanol produced can be clearly associated with only one DGS dryness level. This association must be credible and accurate, even in plants with continuous DGS production that employ dryers that function in series.[25]

b. Although ARB encourages and is moving to fully account for agricultural practices aimed at reducing GHG emissions, accounting for these practices under the proposed Method 2 certification process is not yet straightforward. Reliable data, with sufficient geographic resolution, on the use of such practices is limited.

For example, it is currently difficult to determine how various planting and disking practices alter equipment use, chemical application rates, erosion, and decomposition of soil organic matter. In other cases, State-level data showing performance improvements over national averages may exist, but no indication of the variance in the data is available. A high variance may mean that the apparent difference isn't actually significantly different from zero. Even if the significance of an apparent difference can be confirmed, there is usually no way to determine farm-to-farm differences (i.e., there is no certainty that practices on the specific farms supplying feedstock to fuel producers seeking LCFS certification actually conform to the state-level averages). Finally, even in cases where farm-level GHG-benefits can be documented on the farms supplying feedstock to pathway applicants, most of the practices are easily reversible. Economic conditions could easily alter the extent to which reduced-emissions practices are maintained from year-to-year.

[25] When dryers are installed in series rather than singly or in parallel, a portion of the DGS stream exiting the first dryer enters a second dryer, where it becomes dry DGS. The portion of the stream that is diverted before it enters the second dryer becomes modified (or partially dry) DGS.

Until a process is developed whereby practices that reduce GHG-emissions are included in the calculated fuel pathway CIs, the Method 2 pathway development process can only credit pathways for low-emissions agricultural practices if:

i. scientifically sound data exist that demonstrate the claimed practices are in use on the specific farms that supply feedstock to the Method 2 applicant, and

ii. the applicant agrees to a process in which ARB can confirm that the beneficial practices remain in place for each crop cycle.

c. Certification applications for sugarcane pathways would need to be backed by verifiable third-party documentation. Acceptable forms of documentation include, but are not limited to, receipts for sales of surplus electricity, sales receipts from ethanol buyers, engineering studies produced by independent and well-established engineering firms, independent audit reports, and published research results. An area in which sugar cane ethanol producers may be able to improve their carbon intensities is by exporting electricity in excess of the 0.96 kWh/gallon of ethanol, which is the basis for the two lowest sugarcane ethanol CIs (66.40 and 58.40 gCO2e/MJ) ARB staff has assessed at this time. Any application claiming exports beyond this level must document that claim with, for example, receipts from the buyers of the surplus electricity, and sales receipts for all ethanol sold over the period covered by the electricity sales receipts. Third party audit and engineering reports may also suffice.

Additional sugarcane-specific requirements are specified in the staff's proposed amendments. For example, the applicant would need to demonstrate that only the electricity generated from the bagasse associated with the cane used in the ethanol production was counted in the electrical export calculations (i.e., the bagasse from the cane that went to sugar production cannot be counted). Similarly, the electricity sold to the grid from the sugar production operation could not be counted in the calculation of the ethanol electricity export credit. Further, applications that claim credit for mechanical harvesting would need to be supported, with verifiable third-party documentation, that show mechanical harvesting is used on an ongoing basis on the plantations supplying sugarcane to the applicant's mills. This is necessary because a large proportion of plantations still do not employ mechanical harvesting.[26]

Additional carbon intensity determination provisions unrelated to the proposed certification program were also added to Section 95486(a). In 95486(a)(4), a provision

[26] See, for example, Alves de Aguiar, Daniel, Wagner Fernando da Silva, Bernardo Friedrich Theodor Rudorff, Marcos Adami, July 5-7, 2010, "Canasat Project: Monitoring The Sugarcane Harvest Type In The State Of São Paulo, Brazil." In: Wagner W., Székely, B. (eds.): ISPRS TC VII Symposium – 100 Years ISPRS, Vienna, Austria, July 5–7, 2010, IAPRS, Vol. XXXVIII, Part 7B. : http://www.isprs.org/proceedings/XXXVIII/part7/b/pdf/10_XXXVIII-part7B.pdf. The authors found that 50.9 percent of the harvested sugarcane area in the State of São Paulo was burned in 2008/09.

creating default carbon intensity values was added. These values—one for gasoline substitutes and one for diesel substitutes—could be used, with Executive Officer approval, in cases in which the actual carbon intensity cannot be determined. This provision was added to the regulation because carbon intensity defaults currently exist only in Regulatory Advisories 10-04 and 10-04a, both of which are set to expire.

A fuel's carbon intensity cannot be determined if:

- It's production facility cannot be identified, or
- It has neither been registered with Biofuel Producer Registration process, nor received a carbon intensity via the Method 2 process.

This section establishes a default of 99.4 gCO_2e/MJ (the Midwest average from the Lookup Table) for gasoline substitutes, and the current annual ULSD baseline carbon intensity for diesel substitutes

Provisions were also added to 95486(a)(2) and (3) clarifying the procedure by which carbon intensities are determined using the Method 1 process. These new provisions specify that Method 1 can only be used for fuels that are produced using a well-to-wheels production pathway that is substantially similar to the corresponding well-to-wheels pathway described in the pathway document on which an LCFS Lookup Table pathway is based. Although the current regulation accomplishes this, the degree to which the actual fuel pathway and the Lookup Table pathway must be similar may not be clear without reference to 95486(b) in which the pathway documents behind the Lookup Table pathways are referenced. The proposed new language provides full clarity on this point within 95486(a).

D. Credit Trading Provisions

A new section 95488 is proposed to the LCFS regulation to provide more detail on how credits and deficits will be tracked, and to specify the process to be used to acquire, bank, transfer, and retire credits. Furthermore, this section clarifies how a regulated party can use credits acquired in the first quarter of a year to meet a compliance obligation in the previous year. This section would also establish requirements relating to the public release of information concerning deficits and the generation, use and transfer of credits.

Moreover, staff is proposing a number of changes to section 95484(b) of the existing regulation, and proposes to relocate section 95484(b) to new section 95488(a). These changes do not alter the stringency of the LCFS or change a regulated party's compliance obligation. They modify the formulas used to demonstrate compliance, change some of the terminology used, and conform the provisions of section 95488(a) to the proposed provisions of section 95488(b) through (e).

Changes to Previous Section 95484(b)

Section 95484(b) of the existing regulation, which is now relocated to section 95488(a), specifies how to calculate a Credit Balance and how to use the Credit Balance to determine if an annual compliance obligation has been met. The existing rule reflects an approach where "net" credit balance is tracked through quarterly reporting, and compliance is achieved when a regulated party's credit balance is zero or positive at the end of an annual compliance period.

However, as staff investigated a more detailed system for banking and trading credits, they determined that an approach that clearly separates credit generation and tracking from deficit accounting was appropriate. Accordingly, staff proposes several changes to reflect such an approach. The proposed changes, which do not alter the stringency of the LCFS, include:

- A new formula to calculate a regulated party's annual compliance obligation.
- A revised formula to calculate a regulated party's credit balance.
- A provision specifying that a regulated party must retire credits equal to deficits to demonstrate it has met its annual compliance obligation.
- A revised method to determine a regulated party's credit to deficit ratio if the regulated party retires insufficient credits to meet its compliance obligation.

First, the proposal would define a new term—a regulated party's compliance obligation. The compliance obligation would be the sum of all deficits a regulated party generated in the current compliance period plus any deficits that were carried over from a previous period. The proposed approach is no more or less stringent than the existing rule.

Second, the proposal would modify the formula used to calculate credit balance. The revised formula would be based on credit generation and credit acquisition or credit transfer[27] only. Credit balance would be calculated as follows:

$$Credit\ Balance = Sum\ of\ (Credits^{Gen} + Credits^{Acquired}) - Sum\ of\ (Credits^{Retired} + Credits^{Sold} + Credits^{Exported})$$

where:

$Credits^{Gen}$ are the total credits generated pursuant to section 95488;

$Credits^{Acquired}$ are the total credits purchased or otherwise acquired, including carry back credits acquired pursuant to section 95488(b)(3);

[27] Transfers include credit retirement, the transfer of credits to other regulated parties, and the export of credits to other programs.

Credits ^{Sold} are the total credits sold or otherwise transferred;

Credits ^{Exported} are the total credits exported to programs outside the LCFS; and

Credits ^{Retired} are the total credits retired within the LCFS.

The term Credit Balance would be used to determine the total number of credits in a regulated party's credit account. This is the maximum number of credits that can be retired for compliance or, in the case of a proposed credit transfer, the maximum number of credits that can be transferred to another regulated party.

Third, the proposal would add a new section: "Compliance Demonstration." This section specifies that an regulated party must possess and have retired qualifying credits[28] equal to its deficits (as defined by its compliance obligation) by the time the regulated party submits its annual compliance report. The proposed approach is no more or less stringent than the existing rule. The compliance demonstration replaces the term "Credit Balance" currently used in section 95488(a)(2) to determine if deficits exist and must be carried over to the next compliance period.

Fourth, the proposal would establish a new formula to determine if a deficit can be carried over to the next compliance period without penalty. The proposed approach is no more or less stringent than the existing rule. A regulated party is required to retire credits equal to at least 90 percent of its compliance obligation in order to carry over deficits without penalty.

Finally, the proposal would modify some of the terms used in the Deficit Reconciliation section so that this section conforms to the changes made in the preceding subsections.

New Section 95488 - Banking, Transfer and Retirement of Credits

Earning and Using Transferrable Credits

Credits are generated under the LCFS program when the carbon intensity (CI) of a fuel or blendstock supplied for transportation use is below the annual gasoline or diesel standard. The amount of credit generated by fuels with CIs that are lower than the CI of the LCFS depends on both the CI of the fuel and the quantity that is supplied in California. Regulated parties use the LCFS Reporting Tool (LRT) to report the fuels they supply, and the LRT uses this information to calculate both the credits and deficits that are generated for each fuel type. Under the proposed approach, the amount of

[28] Qualifying credits must have been generated by a regulated party prior to the end of an annual compliance period. Credits which are generated in the first quarter of a year may not be retired to meet a previous year's compliance obligation.

credit generated would not be affected by the amount of deficits incurred by the same regulated party[29]. Deficits and credits would be tracked separately in the LCFS. For example, suppose a supplier provides fuel A, B, and C, and fuels A and B generate credits while fuel C generates a deficit. The total credits generated is the sum of credits from fuel A and fuel B, regardless of the deficits generated from fuel C. Figure 3 illustrates how credits are generated by the successful, timely submission of a quarterly report.

Figure 3: Summary of Quarterly Report Showing Credits and Deficit Generated as a Result of Supplying Ethanol to California

Submit Quarterly Report

Organization: Not Applicable **Reporting Period: Quarter 1 , 2011** **Status: Open**

Quarterly Fuel Details

Transaction Details	Fuel Name	Fuel Pathway Code	CI (g/MJ)	EER	Total Obligated Amount	Unit	Credits (MT)	Deficits (MT)	Incremental Deficit (MT)	Fuel Application
Goto Details	Ethanol from Corn	ETHC031	83.70	1	45,454,345	gal	44,126	0	0	Light Duty or Medium Duty Vehicles
Goto Details	Ethanol from Corn	ETHC028	91.70	1	0	gal	0	0	0	Light Duty or Medium Duty Vehicles
Goto Details	Ethanol from Corn	ETHC027	88.50	1	0	gal	0	0	0	Light Duty or Medium Duty Vehicles
Goto Details	Ethanol from Corn	ETHC026	88.50	1	0	gal	0	0	0	Light Duty or Medium Duty Vehicles
Goto Details	Ethanol from Corn	ETHC025	92.40	1	0	gal	0	0	0	Light Duty or Medium Duty Vehicles
Goto Details	Ethanol from Corn	ETHC008	90.10	1	0	gal	0	0	0	Light Duty or Medium Duty Vehicles
Goto Details	Ethanol from Corn	ETHC004	98.40	1	444,334	gal	0	101	0	Light Duty or Medium Duty Vehicles
Goto Details	Ethanol from Sorghum	ETHG006	84.36	1	0	gal	0	0	0	Light Duty or Medium Duty Vehicles
Goto Details	Ethanol from Sorghum	ETHG002	85.81	1	0	gal	0	0	0	Light Duty or Medium Duty Vehicles

Total quarterly credits generated and banked* **Total Credits/Deficits Generated (MT): 44,025**

* The total number of credits banked and available for trade is determined from the sum of all credits generated from the supply of fuels that exceed the performance of the standard.

In Figure 3, a regulated party has submitted a quarterly status report showing the supply of two ethanol fuels. In the LRT, a quarterly summary page containing an overview of the reported information is displayed to the user. The summary page shows all credits

[29] Staff had considered using the net credits to limit the amount of credit a regulated party could bank or transfer or trade. However, after reviewing the existing LCFS regulation, it was determined that the concept of limiting the number of credits that could be banked or traded to the net credits was not consistent with the adopted regulation, and that maintaining a separate accounting process for credits and deficits was preferable.

calculated from the supply of fuel below the standard in the column labeled "Credits (MT)." Similarly, a column called "Deficits (MT)" contains all deficits associated with fuels above the standard.

On a quarterly basis, upon the successful, timely submission of a report, a total value representing the sum of all credits and a total value representing the sum of all deficits are separately tracked in the LCFS Credit Accounting system. The sum of all credits, independent of the sum of all deficits, is the amount of credits earned for the quarter. These credits would then be added to the regulated party's credit account balance. Once in the credit account the credits can be banked, transferred, or retired for compliance.

The LRT also calculates the sum of all credits and deficits on a quarterly basis. This "net" credit or deficit balance, labeled as "Total Credits/Deficits Generated (MT)," is listed on the LRT summary page for each regulated party. However, while generated credits will be transferred to a regulated party's credit account on a quarterly basis, deficits will be accumulated as an annual obligation, and the regulated party is not required to possess sufficient credits to offset its deficits until it makes its annual compliance demonstration.

Extended Credit Purchase Period

For regulated parties that may have a credit shortfall[30] in a given compliance year, staff proposes to provide an additional period in which additional credits may be purchased or otherwise acquired. Beginning 2012, a regulated party may acquire credits between January 1 and March 31, also called an "extended credit purchase period," and elect to carry back a portion or all of the purchased credits for the purpose of meeting the regulated party's compliance obligation of the year immediately prior. Credits purchased during the extended period must be generated in a previous compliance year(s) to be used to meet a previous year's compliance obligation. For example, for 2014, the additional credits purchased must have been generated between 2011 and 2013.

Continuing with the same example, a regulated party may, under certain conditions, elect to carry back all or some of the credits purchased between January 1 and March 31, 2014, and apply those credits for the 2013 compliance year. The credits are called "carry-back credits" and may only be used as part of the regulated party's compliance demonstration for the prior year. The credits carried back are considered as additional acquired credits as part of the regulated party's annual compliance demonstration.

[30] Shortfall here means that the regulated party has fewer qualifying credits in its possession than the sum of the deficits it is obligated to offset for the compliance year.

A regulated party electing to carry back credits must either:

1. Retire enough credits to meet the shortfall of the prior compliance year, or
2. If the shortfall cannot be eliminated, retire all credits eligible for carry-back.

For example, if a regulated party has a deficit balance of 200 MT CO_2e at the end of 2011 and then purchased 500 MT of additional credits eligible for carry back during the extended period in 2012, 200 MT of credits must be carried back and retired to meet the obligation in 2011. However, if a regulated party has a deficit balance of 1,000 MT at the end of 2011, then the entire 500 MT purchased credits must be carried back. Additionally, since the regulated party has a remaining balance of -500 MT in 2011, a credit-to-deficit ratio calculation will be performed to determine the extent of the shortfall.

As an interim solution, prior to the availability of the accounting system in the LRT, staff proposes to maintain the regulated party's credit balance in an external interim account and manually execute the process of accounting for carried-back credits. When the LRT enhancements are completed, both the specification of credit carry-back and account management will be handled electronically by the system. Meanwhile, staff will provide all interim solutions to regulated parties so that they may maintain account balances in parallel. For regulated parties that do not elect to carry back credits, any credits purchased in the first quarter of a year would be banked for future use.

Requirements for a Credit Transfer

A regulated party who wishes to sell or transfer credits ("the Seller") and a regulated party who wishes to purchase or acquire credits ("the Buyer") may enter into an agreement to transfer credits. The Seller may transfer credits provided the number of credits to be transferred by the Seller does not exceed the number of total credits in the Seller's credit account. When a transfer agreement is desired, it is the Seller's responsibility to provide the Buyer with a Credit Transfer Form containing the Seller's signature, date when the signature was entered, and the following information:

- Date of the proposed Credit transfer agreement.
- Names of the Seller and Buyer's Company as registered in the LCFS Reporting Tool.
- The Federal Employer Identification Numbers of the Seller and Buyer's Company as registered in the LCFS Reporting Tool.
- The first name and last name of the person who performed the transaction on behalf of the Seller's Company.
- The phone number and email of the person who performed the transaction on behalf of the Seller's Company.
- The first name and last name of the person who performed the transaction on behalf of the Buyer's Company.

- The phone number and email of the person who performed the transaction on behalf of the Buyer's Company.
- The number of credits proposed to be transferred and the credit identification numbers, if any, assigned to the credit(s) by the board.
- The price, if any, per metric ton of credit proposed for transfer, excluding any fees.

After receiving the Credit Transfer Form from the Seller, it would be the Buyer's responsibility to confirm the accuracy of the information contained in the Credit Transfer Form by signing and dating the Credit Transfer Form. The Buyer is responsible for the submission of the Credit Transfer Form with all of the required information to the EO. The EO will process the transfer request, and will update the account balance of the Seller and Buyer to reflect the proposed transfer unless the EO determines that one or more of the requirements for credit transfers has not been met. The Credit Transfer Form is provided in Appendix G.

Credits may be transferred between a Seller and Buyer on a frequency that is agreed upon between the two parties. A Seller or Buyer may elect to use a non-regulated party (a credit facilitator) to facilitate the transfer of credits for the Seller, the Buyer, or both. The credit facilitator may include, but is not limited to, a credit transfer service agency or broker who assists in arranging the transfer of credits. However, a credit facilitator cannot own or otherwise exercise control over the credits.

Retirement of Credits to Meet Obligation

At the end of a compliance year, staff proposes that a regulated party responsible for fuels that have incurred deficits must retire a sufficient number of credits to offset the deficit. If excess credits remain after meeting the obligation, those credits remain in the regulated party's credit account. If a regulated party cannot retire a sufficient number of credits to meet its compliance obligation, then all credits that are eligible to meet the compliance obligation and which are within the possession of the regulated party must be retired.

Specification of Credits to be Retired

As part of its annual compliance report, a regulated party that has met 100 percent of its compliance obligation may specify which credits are to be retired. The specification of which credits are to be retired is voluntary. If a regulated party does not make a specification, staff will use a default retirement hierarchy (see Appendix G). Under the default approach, all credits the regulated party acquired as carry-back credits (if any) during the extended period of January 1 to March 31 of the following year would be retired first. Credits the regulated party acquired during a previous compliance year would then be retired in order of purchase date (oldest first). Finally, credits the regulated party generated in previous compliance years would be retired in order of the credits were generated (oldest first).

Public Disclosure of Information and Transparency

Staff proposes to add a new subsection titled, "*Public Disclosure of Credit and Deficit Balances and Credit Transfer Information,*" to the LCFS rule. The purpose of this section is to make clear to the public and market participants that there will be routine, periodic releases of information on credit and deficit generation as well as trading activity. This subsection would permit the EO, no less frequently than quarterly, to provide public reports containing a summary of credit generation and transfer information including, but not limited to:

- Total deficits and credits generated or incurred in the most recent quarter for which data are available, including information on the types and quantities of fuels used to generate credits.
- Total deficits and credits generated or incurred in all previous quarters of the most recent year for which data are available, including information on the types and quantities of fuels used to generate credits.
- Total credits in possession of regulated parties and the total number of outstanding deficits carried over by regulated parties from a previous compliance year.
- Information on the credits transferred during the most recent quarter for which data is available including, but not limited to, the total number of credits transferred, the number transfers, the number of parties making transfers and the monthly average credit price for transfers that reported a price.
- Total credits transferred and used as carry-back credits during the first quarter of the current compliance period.

In addition, ARB staff intends to publish, at least monthly, information that would be helpful to the functioning of a credit market. Such reports may include recent information on credit transfer volumes, credit prices and price trends, and other information determined by the EO to be of value to market participants and the public. By necessity, the report would need to be limited to a level of detail that does not compromise confidential information submitted by regulated parties. Finally, the staff intends to establish a schedule for the routine release of these reports.

E. High Carbon-Intensity Crude Oil (HCICO) Provisions

Background

There are many production techniques for crude oil recovery. Some of the techniques require more energy or emit more GHGs to produce and pre-process the oil. Thermally enhanced oil recovery, bitumen mining, upgrading, and excessive flaring of associated gas are examples of production methods and practices that lead to increased GHG emissions. Since the LCFS regulation takes into account full lifecycle GHG emissions for fuel pathways, including all stages of feedstock production and distribution, the upstream emissions from energy-intensive crude recovery methods need to be accounted for in the regulation. The purpose of the HCICO provisions is to ensure that increases in the overall CI of CARBOB (California Reformulated Gasoline Blendstock

for Oxygenate Blending) and ULSD (Ultra Low Sulfur Diesel) that might occur over time due to the use of more carbon intensive crudes are mitigated and do not diminish the emission reductions anticipated from the LCFS regulation.

The existing provisions address this issue by requiring accounting of GHG emissions associated with crude oils with high upstream emissions. The existing HCICO provisions provide a specific method for treating crude oils with high upstream emissions that were not from geographic areas substantially used in 2006.[31] A HCICO, as defined in Section 95486(b)(2)(A) of the LCFS regulation, is any crude oil which 1) was not produced in one of the countries excluded from the HCICO provision and 2) has a total production and transport carbon intensity (CI) value greater than 15 gCO2e/MJ[32].

Currently, the crude oil mix refined in CA in the year 2006 is used as the baseline to calculate average Lookup Table CI values for CARBOB and ULSD pathways. Gasoline compliance targets are calculated relative to CI for CaRFG (California Reformulated Gasoline; 90 percent CARBOB and 10 percent average ethanol); diesel compliance targets are calculated relative to CI for ULSD. Section 95486(b)(2)(A) of the LCFS regulation specifies the requirements for using the Lookup Table to determine CI values for CARBOB, gasoline, and diesel fuel used under the program. A regulated party is required to use the average CI value shown in the Lookup Table if the fuel/blendstock is derived from crude oil that is either not a HCICO, or was included in the 2006 California baseline crude mix (i.e., originated from a location which contributed two percent or more of the total crude oil refined in California in 2006 ["crude basket"]). A crude oil that does not satisfy both of these conditions is referred to as non-basket HCICO.

For fuel/blendstock made from non-basket HCICOs, the regulated party is required to use the Lookup Table CI values associated with the specific HCICO pathways and to calculate and report the associated deficits from these sources. The purpose of this requirement is to account for additional emissions generated beyond the 2006 gasoline and diesel baseline from the use of HCICOs and to encourage emission-reduction activities from these sources. If those CI values have not yet been determined and published in the Lookup Tables, the regulated party is required to propose a new pathway under Method 2B for its HCICO and obtain approval of the Executive Officer. For HCICOs, the average CI values from the Lookup Table may be used if the oil is produced using innovative methods, such as carbon capture and storage (CCS) or other methods, that reduce the CI to less than 15 gCO2e/MJ.

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[31] Defined as countries or states that provided two percent or more of California's crude supplies in 2006. The countries include: Angola, Brazil, Ecuador, Iraq, Mexico, Saudi Arabia and the States include California and Alaska.

[32] In comparison, the average crude production and transport CI included in the overall CI for the CARBOB (CI = 95.86 gCO_2e/MJ) and ULSD (CI = 94.71 gCO_2e/MJ) fuel pathways is 8.07 gCO_2e/MJ, a little more than half the value of a minimum HCICO.

All regulated parties for gasoline (diesel) calculate a "base" deficit using the difference between the average Lookup Table value for CARBOB (ULSD) and the compliance target in that year. An incremental deficit is applied only to those regulated parties that supply fuels derived from non-basket HCICOs. The incremental deficit is calculated using the difference between the Lookup Table CI values for CARBOB (ULSD) and the CI value for the specific HCICO pathway.

Summary of Crude Screening Workgroup

When the Board approved the LCFS regulation on April 23, 2009, it directed staff, through Resolution 09-31, to work with stakeholders to develop an informal screening process for assessing the CI of new or modified fuel pathways. In response to the Board's direction, staff convened the Crude Screening Workgroup in March 2010 to address new fuel pathways for HCICOs. The intended outcome of the screening process was to identify those crudes that are clearly not HCICO, thereby reducing the number of crudes that would be subject to the more rigorous technical analyses under Method 2B.
The Crude Screening Workgroup was comprised of industry, government, environmental, and academic representatives with an objective to assist in developing a screening process for determining the CI value of crude oil sources under the LCFS. The workgroup met six times, and a smaller subgroup met weekly over a period of six weeks to discuss details of the screening process. Working with the Crude Screening Workgroup, ARB staff developed an interim process[33] for determining which non-basket crude oil sources are non-HCICO, while assigning an appropriate default carbon intensity value to those sources that are determined to be "potential-HCICO." The intent is that the interim process will remain in place until a standardized tool/method that can be used to calculate CI values for all crude sources is developed and approved.

The interim screening process was applied, with the assistance of California Energy Commission (CEC) staff[34], to approximately 250 crude sources, of which approximately 80 percent were identified as non-HCICO. The remaining sources, which are designated as potential-HCICO, are those produced using thermal recovery methods, bitumen mining, excessive flaring, or upgrading.

Regulatory Advisory 10-04 and Supplemental Advisory 10-04A

On November 18, 2010, staff presented to the Board an update on LCFS implementation activities, including the development of a screening process for HCICOs. Through Resolution 10-49, the Board directed staff to issue guidelines

[33] Air Resources Board, February 11, 2011. Draft - Determining Carbon Intensity Values for Fuels Derived From Crude Oil. Interim Crude Oil Screening Process.
[34] Results of Initial Screening Process to Identify Potential HCICOs. Shremp, Gordon. Senior Fuels Specialist, California Energy Commission. Powerpoint Presentation at Crude Oil Screening Workgroup Meeting, February 17, 2011.

regarding the implementation of the LCFS in 2011. Staff issued two regulatory advisories that, in addition to other LCFS implementation guidance, provided clarifications related to HCICO provisions.

Regulatory Advisory 10-04, issued in December 2010, provided an extension through June 30, 2011, for the use of interim CI values for fuels derived from potential-HCICOs. The advisory stated that ARB staff will continue to work with stakeholders to develop guidelines addressing the generation and banking of credits during 2011, as potentially affected by crude oil purchases that are not part of the 2006 basket.

Supplemental Regulatory Advisory 10-04A, issued in July 2011, provided another extension through the end of 2011 for the use of interim CI values for fuels derived from potential-HCICOs. The supplemental advisory provided guidance on the treatment of credits and deficits generated from the blending of CARBOB or ULSD derived from potential-HCICOs, which was noted as a future action in Regulatory Advisory 10-04. Additionally, a list of 160 marketable crude oil names representing crude oil considered non-HCICO was provided as an attachment to the supplemental advisory to assist the regulated parties in identifying potential-HCICOs. This list of non-HCICOs to be used during the advisory period was developed using the interim screening process and is subject to change based on further ARB staff review and analysis.

Reasons for Considering Amendments to the Current HCICO Provisions

Petroleum refiners in California assert that the current HCICO provisions are overly burdensome to their industry, discriminatory toward sources of crude oil, will result in global crude-shuffling that increases GHG emissions, and would put California refiners at an economic disadvantage to out-of-state refiners. Therefore, they have requested that the 2006 baseline value be used for all production of CARBOB, and diesel fuel regardless of the type of crude supplies used by a refiner (i.e., no differentiation between the carbon intensities of crude oils). On the other hand, other stakeholders are equally as adamant that the LCFS should continue to prevent increases in lifecycle carbon emissions that could occur if higher intensity crudes are used to replace existing supplies. These parties generally support approaches that discourage or fully mitigate the refining of HCICOs in California and incentivize carbon emission mitigation techniques for oil production. ARB staff agreed to work with all interested stakeholders to explore alternatives to the current adopted approach to addressing HCICO in the LCFS. The goal of this effort was to determine if there were better options that would both meet the intent of the regulation (to ensure that the LCFS benefits are not diminished due to increases in GHG emissions from higher carbon intensity crude supplies) and address, to the extent possible, the concerns laid out by the various stakeholders.

Discussion of Proposed Modifications

Staff is proposing significant revisions to the current regulation relative to the treatment of HCICO.

Current Regulatory Requirements Related to HCICO

As stated previously, the purpose of the HCICO provisions of the LCFS regulation is to ensure that increases in the overall CI of CARBOB and ULSD that might occur over time due to the use of more carbon intensive crudes are mitigated and do not diminish the emission reductions anticipated from the LCFS regulation. The LCFS standard becomes more stringent over time, and the amount of deficits incurred per MJ of fuel supplied increase proportionately. For example, in 2011 CARBOB incurs a deficit of 0.25 gCO_2e/MJ; by 2020 the CARBOB deficits increase to 9.59 gCO_2e/MJ. Currently, the portion of the pathways attributable to the production and transport of crude oil is 8.07 gCO_2e/MJ, which comprises 8.4 percent of the CI for CARBOB and 8.5 percent of the CI for ULSD. If not mitigated, any significant increase in the CI of crude supplies used by California would reduce the anticipated benefits of the LCFS. For example, a 10 percent increase in the average CI of crude oil (from 8.07 gCO_2e/MJ to 8.88 gCO_2e/MJ) would reduce the program's effectiveness in reducing emissions from 10 percent to 9.15 percent.

Under the LCFS, regulated parties that supply CARBOB or ULSD generate deficits whenever these fuels are used in California. The amount of deficits incurred is determined by the difference between the LCFS standard in a given year and the CI of the CARBOB or ULSD. Section 95486(b)(2)(A) of the LCFS regulation specifies the procedures used to determine CI values for CARBOB and ULSD subject to the program. A regulated party is required to use the average CI value shown in the Lookup Table if the fuel/blendstock is derived from crude oil that is either not a HCICO (because it was determined to have a CI equal to or less than 15 gCO2e/MJ), or was included in the 2006 California baseline crude mix.

A crude oil that does not satisfy both of these conditions is treated as a HCICO. For fuel/blendstock made from HCICOs, the regulated party is required to apply a CI value determined for the specific HCICO pathways and to calculate and mitigate (through retirement of a similar amount of credits) the deficits incurred due to use of the HCICO. If the CI values of a HCICO have not yet been determined and published in the Lookup Tables, the regulated party is required to propose a new pathway under Method 2B for its HCICO and obtain approval of the Executive Officer.

The application of this requirement accounts for and requires mitigation of additional emissions generated beyond the 2006 gasoline and diesel baseline from the use of HCICOs. The adopted approach also encourages emission-reduction activities from sources of potential HCICO to reduce production and transport emissions to less than or equal to 15 gCO2e/MJ.

Proposed Changes to Regulatory Requirements Related to HCICO

Staff is proposing significant changes to the way increased emissions associated with HCICO fuels would be mitigated under the LCFS regulation. Most of the existing

approach would be replaced with new regulatory requirements. The proposed approach would:

- Revise the portion of the CIs for CARBOB and ULSD due to the production and transport of crude oil to California refineries to reflect crude supplies used in the most recent year currently available, 2009. This would:
  - Increase the CI value attributable to the production and transport of crude oil from the current 8.07 gCO2e/MJ to a higher value of 9.72 gCO_2e/MJ;
  - Change the base CI values for CARBOB and ULSD from 95.86 gCO2e/MJ and 94.71 gCO2e/MJ to 97.51 gCO2e/MJ and 96.36 gCO2e/MJ, respectively; and
  - Require a corresponding change in the annual LCFS standards to reflect a higher CI baseline for CaRFG and ULSD. These changes would apply to fuels supplied between 2013 and 2020.

- Rescind the current approach for mitigating emissions greater than a baseline by:
  - Removing any distinctions in how crudes included in the 2006 baseline mix are treated relative to crudes from sources outside of that mix;
  - Eliminating requirements that CI increases for crudes that are classified as HCICOs be individually calculated and mitigated; and
  - Eliminating a provision that non-baseline crudes can qualify as non-HCICOs if it is demonstrated that the crude has a production and transport CI value equal to or less than 15 gCO2e/MJ.

- Establish a modified approach for mitigating higher emissions attributable to increases in crude production and transport CI by:
  - Establishing a California average crude production and transport CI based on the crude slate refined in California during 2009;
  - Performing an annual calculation, beginning in 2013, using data from calendar year 2012, of the "current" California average crude production and transport CI using the crude slate refined in California during the year. This calculation would include all crude supplied to California refineries regardless of the location of production;
  - Determining if an increase has occurred between the base year average crude CI and the annual average crude CI; and
  - Requiring that increases due to higher annual average CI be mitigated.

- Implement the mitigation requirements by:
  - Including a baseline crude average CI ($CI^{XD}_{BaselineCrudeAvg}$) and an annual crude average ($CI^{XD}_{20XXCrudeAvg}$) in the LCFS Lookup Table;
  - Requiring that if the annual crude average CI in a given year is greater than the baseline crude average CI, the incremental CI be used in the following year to calculate the additional deficits to be incurred by regulated parties that supply CARBOB and ULSD;
  - Calculating the amount of the incremental deficits for each regulated party by multiplying the incremental CI for a given year by the total amount of megajoules of CARBOB and ULSD reported by regulated parties for that year;

- Adding the incremental deficits to the compliance obligation of regulated parties for the affected compliance period; and
- Requiring that each affected regulated party retire sufficient credits by the end of the compliance period to offset the added incremental deficits.

- Establish a method whereby a regulated party could earn LCFS credits if it obtains crude from sources that have implemented innovative methods such as carbon capture and sequestration to reduce emissions for crude recovery. Under this provision:
  - The methods used to create the credits must be approved by the Executive Officer;
  - Implementation of the innovative method must have occurred during or after the year 2010;
  - The method must result in a reduction in carbon intensity for crude oil recovery (well-to-refinery entrance gate) of 5.00 gCO2e/MJ or greater;
  - The number of credits will be equal to the emissions reduction achieved by the innovative method; and
  - To avoid double counting carbon emissions, crude oil used to produce CARBOB or diesel for which a credit is allowed will be included in the Annual Crude Average carbon-intensity calculations for that year based on the carbon intensity of the crude oil prior to calculation of any innovative credits allowed.

Proposed Modifications to the Compliance Schedule and Lookup Tables

Staff is proposing revisions to Table 1 and Table 2 (the LCFS annual standards for gasoline and diesel) and Table 6 and Table 7 (the Carbon Intensity Lookup Table) of the current regulation to adjust values in those tables to align with corresponding increases in the CI of CARBOB and ULSD diesel that are proposed as part of the revised HCICO provisions of the LCFS.

i. Proposed Changes to the Average Carbon Intensity Requirements for Gasoline and Diesel

Staff is proposing to adjust the LCFS annual standards contained in the tables listing the "Average Carbon Intensity Requirements for Gasoline and Diesel" to reflect revised base year (2010) CI values for CARBOB and ULSD that occur when the base year CI for crude oil used in California refineries is changed from 2006 to 2009 (See "Proposed Changes to the Carbon Intensity Values for CARBOB and ULSD in the Lookup Tables" below). The proposed revised CI attributed to the production and transport of crude oil to California refineries results in a 1.65 gCO_2e/MJ increase in the CIs for both CARBOB and ULSD diesel, and a concurrent increase in the CI for CaRFG of 1.54 gCO_2e/MJ. This would change the base values used to determine the LCFS annual standards, which are designed to achieve specified percentage reduction in carbon intensity from the base year (2010). Staff is therefore proposing to adjust the annual standards for CARBOB and ULSD to reflect the revised CI values. This would be accomplished by applying the current percent reduction targets listed in Tables 1 and 2 to the revised

values for CaRFG and ULSD diesel. This change would affect compliance periods for 2013 and beyond. No change is proposed for 2011 or 2012. The proposed revisions are shown in Tables 3 and 4 below:

Table 3. LCFS Compliance Schedule for 2011 to 2020 for Gasoline and Fuels Used as a Substitute for Gasoline.

Year	Average Carbon Intensity (gCO2E/MJ)	~~% Reduction~~
2010	Reporting Only	
2011	95.61	~~0.25%~~
2012	95.37	~~0.5%~~
2013	96.42 ~~94.89~~	~~1.0%~~
2014	95.93 ~~94.41~~	~~1.5%~~
2015	94.95 ~~93.45~~	~~2.5%~~
2016	93.98 ~~92.50~~	~~3.5%~~
2017	92.52 ~~91.06~~	~~5.0%~~
2018	91.06 ~~89.62~~	~~6.5%~~
2019	89.60 ~~88.18~~	~~8.0%~~
2020 and subsequent years	87.65 ~~86.27~~	~~10.0%~~

Table 4. LCFS Compliance Schedule for 2011 to 2020 for Diesel Fuel and Fuels Used as a Substitute for Diesel Fuel.

Year	Average Carbon Intensity (gCO2E/MJ)	~~% Reduction~~
2010	Reporting Only	
2011	94.47	~~0.25%~~
2012	94.24	~~0.5%~~
2013	95.40 ~~93.76~~	~~1.0%~~
2014	94.91 ~~93.29~~	~~1.5%~~
2015	93.95 ~~92.34~~	~~2.5%~~
2016	92.99 ~~91.40~~	~~3.5%~~
2017	91.54 ~~89.97~~	~~5.0%~~
2018	90.10 ~~88.55~~	~~6.5%~~
2019	88.65 ~~87.13~~	~~8.0%~~
2020 and subsequent years	86.72 ~~85.24~~	~~10.0%~~

These changes are needed to maintain the current stringency of the LCFS and to preserve the program's goal of reducing the carbon intensity of California' transportation fuels by 10 percent by 2020. Overall, these changes to the compliance schedules would have several impacts, such as:

- Maintaining consistency between the method used to calculate lifecycle emissions and the regulatory requirements of the LCFS;

- Providing adequate lead time for a smooth transition from the current annual standards to adjusted standards in 2013;
- Maintaining the balance and stringency in the current program relative to the rate at which carbon intensity of transportation fuels must improve and the ability of obligated parties to create sufficient LCFS credits to meet their compliance obligation; and
- Yielding a modest increase in the GHG reductions achieved under the LCFS when combined with the changes in the CIs for CARBOB and ULSD proposed in the Lookup Tables.

ii. Proposed Changes to the Carbon Intensity Values for CARBOB and ULSD in the Lookup Tables

Staff is proposing changes to Tables 6 and 7 (the Carbon Intensity Lookup Tables) of the current regulation to adjust the CI values of CARBOB and ULSD in those tables to align with corresponding increases in the CI that are proposed as part of the revised HCICO provisions of the LCFS. The CI values for CARBOB and ULSD would increase from 95.86 gCO_2e/MJ and 94.71 gCO_2e/MJ, respectively, to 97.51 gCO_2e/MJ and 96.36 gCO_2e/MJ, respectively. These revisions reflect the increase in the average CIs for CARBOB and ULSD related to the production and transport of crude oil to California refineries in the most recent year currently available (2009) and the revised calculation methodology of the proposal. The increase the CI value attributable to the production and transport of crude oil from the current 8.07 gCO_2e/MJ to 9.72 gCO_2e/MJ. As with the revisions to the annual LCFS standards, this change would affect compliance periods for 2013 and beyond.

iii. Calculation of Revised CI Values for CARBOB and ULSD

Baseline Year and Data Availability

The LCFS regulation considers 2010 as the baseline year against which a ten percent reduction in GHG emissions is mandated by 2020.[35] The compliance schedule targets for gasoline and its substitutes are based on the carbon intensity value for CaRFG, which in the year 2010 contained approximately ten percent ethanol by volume.

Because data for crude oil supplied to California refineries in 2010 was not available during development of the original regulation, Lookup Table carbon intensity values for CARBOB and diesel were based on available crude supply data for the year 2006. At the time, an assumption was made that the carbon intensity for recovery of crude oil supplied to California refineries would not change substantially between 2006 and the 2010 baseline year. This assumption turned out to be incorrect as the percentages of

[35] Air Resources Board. Proposed Regulation to Implement the Low Carbon Fuel Standard Volume I. Staff Report. Initial Statement of Reasons. March 5, 2009. at page V-7

crude recovered using thermal methods, mining, and upgrading have increased.[36,37] Therefore, as part of these proposed regulatory amendments, ARB staff is proposing updates to the baseline carbon intensity values for CARBOB and diesel using the most recently available comprehensive set of crude oil supply data from the year 2009. Furthermore, it is ARB staff's intention to revise these values again in 2012 as part of a 15-day change to these regulatory amendments. In 2012, comprehensive crude oil supply data should be available for the year 2010. ARB staff will be recalculating the "California average" annually to reflect the most current crude slate. To assist in this effort, staff is working with Professor Adam Brandt at Stanford University to develop a lifecycle assessment tool for calculating carbon intensity values for crude oil recovery.

Calculation Methodology for the Baseline Crude Average Carbon Intensity Value

We used a simple approach to calculate the Baseline Crude Average carbon intensity value (see Appendix C for details). For crude sources produced using thermally enhanced oil recovery (TEOR), bitumen mining or upgrading, a single carbon intensity value of 20 gCO2/MJ was assigned. All other crudes were assumed to be produced using conventional primary or secondary recovery methods. For these crude sources, we assumed a common "base" carbon intensity value that accounts for extraction, venting, and fugitive emissions and added to this country-specific values for flaring and transportation emissions. Crude oil produced in California, Canada, Venezuela, and Oman was recovered using a mixture of production methods. In California, approximately half of the crude was produced using TEOR.[38] The CEC data shows that 89 percent of Canadian crude was produced using TEOR, mining or upgrading; 51 percent of Venezuelan crude was produced with upgrading; and 18 percent of crude from Oman was produced using TEOR.[39,40] The resulting carbon intensity values are shown in Table 5 based on state or country of origin. The Baseline Crude Average carbon intensity, 9.72 gCO_2/MJ, was calculated by weighting these values by the percentage contribution to total crude oil supplied to California refineries.

This value is greater than the value presented in the CARBOB and ULSD pathway documents, 8.07 gCO_2/MJ, for two reasons. First, the calculation methodology is different and results in a slightly greater carbon intensity estimate. Applying the methodology described here to the 2006 crude data results in a carbon intensity for crude recovery and transport of 8.57 gCO_2/MJ. This increase is primarily the result of explicitly accounting for flaring emissions by state or country using NOAA data. Crude

[36] California Department of Conservation, 2010, Division of Oil, Gas, and Geothermal Resources, 2009 annual Report of the State Oil and Gas Supervisor, page 3.
[37] California Energy Commission, October 10, 2011, Email Correspondence: Data on Canadian and Venezuelan crude oil production.
[38] California Department of Conservation, 2010, Division of Oil, Gas, and Geothermal Resources, 2009 annual Report of the State Oil and Gas Supervisor, page 3.
[39] California Energy Commission, October 10, 2011, Email Correspondence: Data on Canadian and Venezuelan crude oil production.
[40] Schremp, G., California Energy Commission, 2011, Presentation for Crude Screening Workgroup: Results of Initial Screening Process to Identify Potential HCICOs, revised March 3, 2011.

produced in Alaska, Ecuador, Iraq, Angola, and Oman has flaring emissions that are much greater than assumed in the pathway documents. Second, the percentages of TEOR, mining, or upgrading have increased from 2006 to 2009. For example, California TEOR has increased from 14.43 percent of total California crude in 2006 to 19.48 percent in 2009. Canadian, Venezuelan, and Omani crude imports have also increased.

Table 5. 2009 Baseline Crude Average Carbon Intensity

Crude Source	Percentage of Total CA Crude	Conventional Crude CI (g/MJ)	Percentage TEOR, Mining, Upgraded	Total CI (g/MJ)
California	39.5	4.38	49.3	12.08
Alaska	15.06	7.28	0	7.28
Saudi Arabia	11.32	6.37	0	6.37
Iraq	8.49	10.39	0	10.39
Ecuador	7.81	8.29	0	8.29
Brazil	4.2	6.40	0	6.40
Columbia	2.61	5.74	0	5.74
Canada	2.31	5.75	89	18.43
Angola	2.28	7.86	0	7.86
Oman	1.58	8.87	18	10.87
Peru	0.95	5.52	0	5.52
Venezuela	0.9	6.54	51	13.41
Others	2.98	7.73	0	7.73
Weighted Average				**9.72**

Calculation Methodology for Baseline Average Carbon Intensity Values for CARBOB and Diesel

Baseline Average carbon intensity values for CARBOB and diesel (ULSD) were determined by substituting the Baseline Crude Average carbon intensity value discussed above for the crude recovery (6.93 gCO_2/MJ) and crude transport (1.14 gCO_2/MJ) values reported in the CARBOB and ULSD pathway documents.[41,42] The resulting values are 97.51 gCO_2/MJ for CARBOB and 96.36 gCO_2/MJ for ULSD.

Assessment of Proposed Changes Related to HCICO

Under the proposed approach, increases in crude CI would be determined and mitigated in the aggregate. The proposal would create incremental deficits only if the

[41] California Air Resources Board, February 27, 2009, Detailed CA-GREET Pathway for California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB) from Average Crude Refined in California, Version 2.1

[42] California Air Resources Board, February 28, 2009, Detailed CA-GREET Pathway for Ultra Low Sulfur Diesel (ULSD) from Average Crude Refined in California, Version 2.1

average crude slate refined in California becomes more carbon-intensive. This aggregate approach differs from the current approach, which mitigates only those increases in crude CI that can be attributed to crudes classified as HCICOs. A second major difference is that the proposed approach allows for "the industry as a whole" to shift its crude slate and not incur additional deficits as long as the average CI of the California crude slate does not increase relative to the baseline year. Finally, the proposed approach necessitates more timely and complete reporting of all of the crude used in California refineries, but eliminates the need for regulated parties to determine the CIs for every crude classified as HCICO.

Staff believes the proposed changes are overall a significant improvement to the current approach and are clearly superior in a number of aspects:

- First, the proposal ensures that all sources of crude supplies are accounted for in a consistent manner in a Statewide average, and assures the mitigation of GHG emissions that result from an increased CI from crude production and transport.
- Second, the current regulation would allow unmitigated CI increases in crude oil supplies from countries in the baseline, and from crudes that have relatively high CIs but are able to demonstrate they do not exceed 15 gCO2e/MJ threshold for HCICO. The proposed approach removes the possibility that such crudes could cause the average CI from production and transport to increase but not be mitigated.
- Third, the proposed approach provides additional flexibility for refiners to:
  - Change crude slates without incurring deficits (assuming the state average carbon intensity does not increase over the baseline average).
  - Avoid the need to prepare and submit to the Executive Officer Method 2B applications, seeking approval of CIs for crudes classified as a potential-HCICO.
- Fourth, the proposal more accurately calculates the 2010 CI baseline for California gasoline and diesel upon which the LCFS is based. Because the revised CI baseline is slightly higher, the ten percent reduction goal of the LCFS will produce greater net GHG emissions reductions under the proposal. For example, the potential incremental GHG benefits under the revised compliance schedules are estimated to be about 259,000 MT CO_2e in 2020; therefore, the total GHG emissions reductions for the LCFS in 2020 are estimated to be about 16.1 MMT CO_2e instead of the original 15.8 MMT CO_2e.

Consideration of Alternatives to the Proposed Changes Related to HCICO

As described above, ARB staff believes that the proposed changes to the HCICO provisions of the LCFS regulation are a significant improvement over the current approach. The proposal provides greater certainty that an increase in the CI of crude will be mitigated, provides greater flexibility to refiners to manage crude slates, is easier

to administer once a comprehensive system to assign CIs to crudes is implemented[43], and creates slightly greater GHG reductions from the LCFS program. However, staff is continuing to explore options that could improve the proposal, and may recommend changes by the time the Board considers this matter. Therefore, staff invites comments and suggestions on how the proposal could be improved. Specifically staff solicits suggestions on:

- Alternative methods to allocate incremental deficits so that mitigation responsibility is allocated to those regulated parties most responsible for an increase in the average crude CI.
- Alternative and additional methods of providing incentives for innovation that significantly reduces the CI of non-conventional crudes and crudes that require high-energy production.

Staff is also considering how to address HCICO refined in 2011 and 2012 (e.g., the generation of deficits and potential impacts on credit balances) as well as how to handle the processing of imported intermediate feedstocks, such as cat cracker feed.

F. Electricity Regulated Party Revisions

Overview

In the LCFS regulation, regulated parties for electricity used as a transportation fuel include electric utilities, non-utilities installing electric vehicle service equipment (EVSE) with a customer contract, business owners, and homeowners. The Board directed staff in Resolution 09-31 to review the provisions applicable to regulated parties for electricity and propose amendments if appropriate. Since the Board approved the regulation, the markets for electric vehicles (EV) and EV-fueling infrastructure have evolved and continue to evolve. As a result, staff is proposing modifications to the designation of regulated parties for electricity.

In the regulation, regulated parties for electricity are eligible to receive LCFS credits for delivering electricity for transportation use in California. By providing a lower-carbon fuel relative to gasoline, parties can earn an LCFS credit for each metric ton of CO_2 equivalent ($MTCO_2e$) emissions avoided through the use of electricity—a transportation fuel with much lower carbon intensity (CI) than the 2020 standard specified in the LCFS regulation. The credits will have a monetary value when sold to regulated parties who must offset deficits created by their supply of fuels with CIs that exceed the LCFS standards.

Staff has proposed regulatory amendments to: (1) eliminate ambiguity in some cases of regulated party designation; (2) clearly award potential credits for residential and

[43] A lifecycle assessment tool for calculating carbon intensity values for crude oil recovery is being developed by Professor Adam Brandt at Stanford University under contract with ARB and will be completed in 2012.

public-access vehicle charging; (3) incorporate vehicle charging applications that were not foreseen when the regulation was adopted; and (4) maximize the number of credits available for use in the LCFS program. In the revised language, staff seeks to ensure fair treatment of regulated parties and to incent electric transportation. The proposed changes discussed here are limited to on-road electric refueling.

Regulated parties for electricity are currently opting into the regulation to receive LCFS credits and have submitted reports for fuel transactions for the first two quarters of 2011. The proposed amendments are necessary to align the regulation with current EV charging applications and to reflect staff's intent to award credits in a fair manner.

Current Regulation Hierarchy for Credit Recipients

As allowed in the current regulation, electric utilities can potentially receive credits for electricity delivered through residential charging equipment and for public EVSE they have installed. However, non-utility Electric Vehicle Service Providers (EVSPs) are also installing charging equipment in homes, for public access, and on private business property for employee use. In cases where a non-utility EVSP has installed equipment, the regulation designates the non-utility EVSP as the potential credit recipient rather than the utility. While staff intended non-utility EVSPs to receive credits only for fuel delivered through public charging equipment, the regulation can be interpreted to include residential charging credits to non-utility EVSPs. The regulation allows for two additional potential credit recipients: businesses that provide access to EVSE on their property and homeowners. Business owners and homeowners are eligible to receive LCFS credits only if they have a contract to do so with the appropriate utility.

Proposed Regulation Modifications

Staff is proposing to clarify the regulation to designate electric utilities as the regulated parties for EV charging in single- and multi-family residences. Staff is further proposing to add several requirements that must be met before utilities can receive credit for residential charging. Utilities must:

1. Use all credit proceeds as direct benefits for current EV customers.
2. Provide rate options that encourage off-peak charging and minimize adverse impacts to the electrical grid.
3. Educate the public on the benefits of EV transportation through outreach efforts.
4. Include in annual reporting a summary of efforts to meet requirements 1, 2, and 3, as well as an accounting of the number of EVs known to be operating in the service territory.

Staff is also proposing to designate non-utility EVSPs and electric utilities as the regulated parties for transportation fuel supplied through public charging equipment that they have installed. For the LCFS regulation, a non-utility EVSP is defined as the entity that installs the EV-charging equipment, or has had an agent install the equipment, and who has a contract with the property owner or lessee where the equipment is located to

maintain or otherwise service the charging equipment. The contract must be valid during the corresponding reporting period. For a utility to qualify as the regulated party for public access charging, the utility would also need to have a similar contract valid during the reporting period.

In an effort to maximize the number of credits captured by regulated parties, staff is proposing to add the local utility as the default regulated party if the EVSP elects not to participate in the regulation. Under the proposal, with EO approval, the utility can become eligible to be the regulated party for the electricity supplied by the public access charging equipment.

Staff is also proposing to add requirements that the regulated parties for public access charging must meet to receive credits. The requirements are similar to those specified for utilities for residential charging.

Staff is proposing to add an opportunity for EV fleet operators to become regulated parties. Under the proposal, a company operating a fleet of three or more EVs may opt into the regulation to become a regulated party, while the utility is eligible to be the regulated party for fuel supplied to fleets of less than three EVs. If the fleet operator chooses not to become a regulated party, the electric utility operating in the service territory where the fleet vehicles are charged can become eligible to be the regulated party with EO approval. To receive credit for fuel supplied to an EV fleet, regulated parties must annually report an accounting of the number of EVs in the fleet.

Staff is also proposing to allow employers who offer on-site EV charging equipment to their employees to become regulated parties. Under the proposal, if the employer chooses not to become a regulated party, the electric utility operating in the service territory where the fleet vehicles are charged can become eligible to be the regulated party with EO approval. Staff is further proposing to require regulated parties for employee EV charging to:

1. Educate employees on the benefits of EV transportation.
2. Annually report on the efforts of (1), as well as an accounting of the number of EVs known to be charging at the business.

Current and Expected Near-Term Market for Electric Vehicle Charging

Electric utilities supply the fuel for charging electric transportation. Utilities are also installing separate meters for those residential EV customers who choose an EV time-of-use (TOU) rate structure that encourages EV charging during off-peak hours (generally overnight). In addition, some utilities plan to install EVSE for public access EV charging.

Non-utility EVSPs are installing many EVSEs in single-family homes and also plan to install them in multi-family homes. In addition, non-utility EVSPs are currently installing public access EVSE and establishing contracts with business owners where the

equipment is located and contracts with EV owners to access the equipment. The property owner may buy or lease the EVSE.

Justification of Proposal

In preparing the proposal to modify the electricity regulated party language, staff established three goals. First, staff kept the proposed language simple to avoid confusion in regulated party designation and maintain relevancy as the EV charging market continues to evolve. Second, staff limited the number of regulated parties to increase the possibility that credits will be captured and made available to other regulated parties who need to purchase credits. And finally, staff included default regulated parties in the proposed language to maximize the number of credits captured and available for purchase and use for compliance.

Staff is proposing to designate electric utilities as the regulated parties for EV charging in single- and multi-family residences as well as for public access charging equipment they install with a contract. Utilities have been actively preparing for California's EV market. Many utilities have been preparing to accommodate the expected growth in EV population by increasing customer education and outreach, developing EV electricity rate schedules, and evaluating system impacts. As EV customers evaluate their home charging options, some require panel upgrades and the installation of second meters to receive EV TOU rates. In some cases, utilities have replaced transformers as a result of EV charging. Further upgrades to the electric distribution system are anticipated in some areas as the number of EVs operating in California increases. For example, the San Diego Gas & Electric Company has estimated costs to accommodate residential and commercial EV services will range from $1 to $1.5 million annually for 2010 to 2012.[44]

To recover these costs, the CPUC has ruled, in their decision on Phase 2 of the Alternative Fueled Vehicle Proceeding,[45] that until June 30, 2013, "all residential service facility upgrade costs in excess of the residential allowance shall be treated as common facility costs rather than being paid for by the individual plug-in hybrid and electric vehicle customer." Staff is proposing to designate electric utilities as the regulated parties for residential charging to make them eligible to receive LCFS credit revenue that may offset utility costs that are a direct result of the EV market. Staff is further proposing that credit revenue must be returned to EV customers through direct benefits.

Staff is further proposing to designate non-utility EVSPs as the regulated parties for public EV charging that they install. The credit revenue that they will be eligible for will reward them for establishing the public charging network that is required to support a successful EV market.

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[44] California Air Resources Board, Utility Survey of SDG & E

[45] California Public Utilities Commission Phase 2 Decision Establishing Policies to Overcome Barriers to Electric Vehicle Deployment and Complying with Public Utilities Code Section 740.2

Stakeholder Outreach

When the Board approved the LCFS regulation in April 2009, they directed staff in Resolution 09-31 to continue working with stakeholders on the electricity regulated party language and to propose language changes if necessary. Staff established an Electricity Workgroup with stakeholders and has held three meetings since the regulation was approved. Participants included representatives from utilities, non-utility EVSPs, oil refineries, the CPUC, the California Energy Commission, and environmental groups. Workgroup members have submitted written comments in addition to participating in the Workgroup meetings.

Value of LCFS Credits

Staff estimates that in 2011, there will be 5,000 to 11,000 electric vehicles operating in California. This includes full-electric vehicles like the Nissan Leaf and Tesla Roadster, and plug-in hybrids like the Chevy Volt. Based on typical annual miles traveled and using electricity supplied from the California grid, a full battery electric vehicle (BEV) could earn on the order of two credits in 2011, while a plug-in hybrid could earn about 1.5 credits in 2011 (one credit is equal to one $MTCO_2e$). The projected total number of credits available in 2011 for the electricity-fueled miles traveled by these vehicles is 8,000 to 22,000. The potential value of the credits for all electric vehicles statewide in 2011, based on a range of $15 to $50 per credit, could range from $114,000 to $1,100,000.

In 2020, when the LCFS CI standard is lower, the potential credits that an electric vehicle could earn are less than 2011 credits, assuming that the EV technology does not significantly improve. Staff predicts that BEVs could earn approximately 1.7 credits per vehicle, while plug-in hybrids could earn 1.3 credits per vehicle. The number of credits projected for the year 2020 varies considerably based on the projected number of electric vehicles. LCFS scenarios are based on 490,000 to 1,780,000 electric vehicles (both battery and plug-in hybrid) in 2020. Based on these scenarios, LCFS credits available in 2020 could be 700,000 to 2,500,000. Compared to the total reduction of CO_2e in 2020 (24 $MMTCO_2e$), credits could be 3 to 10 percent of the total reduction. The potential value of the credits based on a range of $15 to $50 per credit, could range from $10 to $124 million.

G. Energy Economy Ratio (EER) Revisions

Energy Economy Ratios

Staff is proposing three changes to the Energy Economy Ratios (EER). Staff is proposing these changes to reflect the use of engine efficiency and fuel efficiency data that was not available during the original rulemaking in April 2009. The first change is the addition of a new EER of 1.0 for CNG/LNG heavy-duty compression-ignition engines. The EER of 0.9 that is currently in the rule for all CNG/LNG heavy-duty engines would be applicable only to heavy-duty spark-ignition engines. The second

proposed change is to change the EER for light duty BEVs and plug-in-hybrid electric vehicles (PHEV) from 3.0 to 3.4. The third proposed change is to change the EER for light-duty fuel cell vehicles (FCVs) from 2.3 to 2.5. The basis for both of the changes being proposed by the staff is the availability of new data on the energy efficiency of heavy-duty engines burning CNG and LPG, BEVs, PHEVs, and FCVs. Furthermore, staff proposes to delete the 1.3 divisor for EVs and FCVs that was originally intended to account for cleaner conventional vehicles in 2016 and beyond. In lieu of the divisor, staff is proposing that the EERs be revisited periodically to account for improvements in all engine and vehicle technologies.

Heavy-Duty CNG/LPG Vehicles

Recent ARB certification data show that the energy efficiency of heavy-duty compression-ignited engines burning CNG and LPG is the same as that of heavy-duty diesel fueled engines of comparable size and horsepower. It is for this reason that the staff is proposing an EER of 1.0 for compression-ignition heavy-duty engines burning CNG and LPG.

Light Duty

Since the publication of the ARB's Initial Statement of Reasons for the Low Carbon Fuel Standard regulation in March 2009, fuel efficiency data has become available for two electric vehicles that are expected to constitute the majority of electric car sales in the next several years. These vehicles are the Chevy Volt and the Nissan Leaf. The fuel economies for these vehicles have been published in the federal Government's Fuel Efficiency Guide. The fuel efficiency for the Chevy Volt, operating in the electric-only mode, was measured at 93 miles per gallon gasoline equivalent, while the fuel efficiency for the Nissan Leaf was measured at 99 miles per gallon gasoline equivalent. For the Chevy Volt, the reference vehicle is the Chevy Cruze. The fuel efficiency for the Chevy Cruze is 28.3 miles per gallon. The corresponding EER for the Chevy Volt (the quotient of its fuel efficiency and that of its reference vehicle) is 3.29. For the Nissan Leaf, the reference vehicle is the Nissan Versa, which has a fuel efficiency of 28.4 miles per gallon. The corresponding EER for the Nissan Leaf is 3.49. The average EER for the Volt and Leaf is 3.39, or 3.4. This EER value would be used in the calculation of all credits originating from the use of electricity in light-duty cars.

Light-Duty Fuel Cell Vehicles

The EER for light-duty fuel cell vehicles is based on the published fuel economies for the 2011 Honda FCX Clarity and the 2011 Mercedes-Benz F-Cell. The published fuel economies for the Clarity and the F-Cell are 60 miles per kilogram of hydrogen, and 53 miles per kilogram, respectively. These translate to about 61 miles per gallon of gasoline equivalent, and about 54 miles per gallon of gasoline equivalent, respectively. The reference vehicle for FCX Clarity is the Honda Accord, while for the F-Cell they are the Mercedes SLK350, SLK300, and C300. The fuel efficiency for the Accord is about 26 miles per gallon, while for the SLK350, SLK300, and C300 the fuel economies are

about 21 miles per gallon. The corresponding EER for the Clarity is 2.35, while for the F-Cell it is 2.57. Averaging the EERs of the Clarity and the F-Cell gives an average EER of 2.46, or 2.5, which is proposed to be the EER for purposes of calculating credits.

H. Revisions to Reporting and Recordkeeping Provisions

Designating the LRT for LCFS Quarterly and Annual Reporting

There is no clearly designated single process mandated in the existing LCFS regulation to be used for reporting. The current regulation only specifies that "a regulated party must submit an annual compliance and quarterly progress report by using an interactive, secured internet web-based form." To facilitate such reporting, ARB staff developed the online LCFS Reporting Tool (LRT), which has been operational since early 2010 and in production since December 2010. It is readily accessible at www.arb.ca.gov/lcfsrt for electronic reporting by all regulated parties.

A total of 70 regulated parties have used the LRT for reporting during 2010 and for first quarter 2011 reporting, both for manual entry of fuel transaction data via the user interface and through XML data file upload submission. This has been the only means used for LCFS reporting by all regulated parties; the LRT, therefore, has become the *de facto* standard for electronic submittal of required LCFS reports. Thus, the staff's proposal to mandate the use of the LRT simply codifies the existing standard practice of regulated parties.

As with most industries, the transportation-fuels sector values certainty, and specifying that only the LRT, which is accessible from ARB's website, can be used for reporting ensures such certainty. For similar reasons, the requirement to use the LRT ensures standardization and consistency, which would help facilitate credit trading between regulated parties (especially when the LRT version 2.0 is developed, which will automate credit trades and credit reporting). In addition, because all regulated parties are using the LRT and ARB makes it available for free, there are no additional costs involved with using the LRT for regulated parties. By contrast, the purchase of and training with different, commercially-developed reporting software would almost certainly involve additional costs for regulated parties. For the above reasons, staff proposes to mandate use of the LRT as the only online reporting mechanism for use by regulated parties.

Rounding to Nearest Whole Number, Reporting of Volumes Expressed in GGE

Staff proposes to amend section 95484(c)(5)(C) of the existing regulation, which is now section 95484(b)(5)(C) in the proposed regulation, by eliminating the reporting of fuel volume in terms of "gasoline gallon equivalent (gge)." The use of gge was part of an earlier version of the LCFS regulation in which conversion of fuel volumes to gge values was required as part of fuel transaction reporting. This is no longer needed because the LRT now accepts volume inputs in their native units (i.e., "gallons" for gasoline, diesel

and liquid biofuels; "scf" for CNG, LNG and Biogas; "kWh" for electricity; and "kg" for hydrogen). To improve reporting and for consistency in how regulated parties are recording their transactions, staff is also proposing to change the provisions in section 95484(b)(5)(C) for reporting significant figures to simply require reporting to the nearest whole unit.

Renewable Identification Number Reporting

Staff proposes to delete section 95484(b)(3)(A)4. of the existing regulation to no longer require the reporting of "all Renewable Identification Numbers (RINs) that are retired for facilities in California." Staff determined that this provision was of limited utility and no longer needed. Further, staff proposes to remove the reference to quarterly reporting of RINs in Table 3.

Product Transfer Document

The current regulation uses the term "Product Transfer Document" (PTD) but does not define it; rather, the regulation specifies information that must be contained in the PTD. It is staff's understanding that PTDs, instead of being a single document, can be a collection of related documents. Thus, staff described a PTD in the LCFS Guidance Document, version 1.0,[46] as a document or documents that may include, but is not limited to, one or more of the following: contract, invoice, bill of lading, RFS2 product transfer document, meter ticket, and rail inventory sheet. The guidance document further describes a PTD as a document or combination of documents that is commonly used and accepted in the industry for the subject fuel. Moreover, if multiple documents are used for an authentication, each document must contain information that identifies their association to each other. To clarify the regulation, some stakeholders have suggested codifying the guidance document's language into a formal definition for a PTD. Staff agrees and has proposed a definition for PTD accordingly.

Reporting Requirements for Gasoline and Diesel Fuel

Annual Reports

The proposed change is to add to the annual reporting requirements, starting 2012 and for each year thereafter, information on the crude oil supplied to California refineries in a calendar year. These data will be used to estimate the annual average crude oil carbon-intensity. These reporting requirements will be applicable to the producers of CARBOB, gasoline, and diesel. Specifically, the following data for each refinery will be required under this provision:

1. Volume (in gallons) and marketable crude oil name (MCON) of all crude oil supplied to the refinery that was produced in California using thermal enhanced oil recovery (TEOR) methods.

[46] See http://www.arb.ca.gov/fuels/lcfs/LCFS_Guidance_%28Final_v.1.0%29.pdf, accessed Oct. 9, 2011.

2. Volume (in gallons) and MCON of all crude oil supplied to the refinery in the current compliance period that was produced in California using non-TEOR methods.
3. Volume (in gallons), MCON, and Country (or State) of origin for all crude oil supplied to the refinery in the current compliance period that was imported.

Quarterly Reports

Staff proposes to add, to the quarterly reporting requirements, all imports of petroleum blendstocks, finished fuels, and petroleum intermediates that can be further processed to produce blendstocks or finished fuel. The volumes of such imported products would need to be reported on an individual basis.

I. Miscellaneous

Modifications to the Definitions of "CNG," "LNG," and "Biogas"

The existing regulation defines "compressed natural gas (CNG)," "liquefied natural gas (LNG)," and "biogas (biomethane)," in part, by reference to the existing California motor vehicle fuel specifications for CNG. These fuel specifications are codified at title 13, California Code of Regulations, section 2292.5. Under the original LCFS rulemaking, staff included this reference to the fuel specifications to ensure that only natural gas that was sold, supplied or offered for sale in California for transportation purposes would be credited under the LCFS program. However, staff has determined that the reference to title 13 is unnecessary given that the regulation already explicitly applies only to fuels sold, supplied, or offered for sale for transportation purposes. Further, the title 13 specifications are based on criteria pollutant standards, while the LCFS is based on carbon intensity requirements, so the linkage between the two is superfluous (i.e., the two regulations exist independently). Finally, ARB staff is currently collaborating with local air district staff to update the motor vehicle fuel specifications; thus, staff believes the criteria pollutant aspects of the motor vehicle fuel specifications are more appropriately addressed through the title 13 specifications rather than being linked directly to the LCFS. Based on the above considerations, staff is proposing to eliminate the reference to the motor vehicle fuel specifications from the above definitions.

Codification of LCFS Advisory Provisions

To provide clarity during the early implementation of the LCFS, ARB staff issued a number of advisories.[47] Staff believes a number of these advisories set forth guidance that should be codified in the regulation. For example, it was suggested that the regulation, like the advisories, specify default CI values to be used by regulated parties when faced with purchasing fuel with an unknown CI and fuel pathway. The proposal addresses this scenario and proposes to codify other provisions discussed in the advisories.

[47] See http://www.arb.ca.gov/fuels/lcfs/070111lcfs-rep-adv.pdf, http://www.arb.ca.gov/fuels/lcfs/122310lcfs-rep-adv.pdf, http://www.arb.ca.gov/fuels/lcfs/093010lcfs-rep-adv.pdf, and http://www.arb.ca.gov/fuels/lcfs/070910lcfs-rep-adv.pdf.

V. ENVIRONMENTAL IMPACT ANALYSIS

A. Introduction

This chapter provides an environmental analysis of the proposed regulatory action. Based on ARB's review of the proposed amendments, staff has concluded that the proposed amendments to the Low Carbon Fuel Standard (LCFS) regulation would not have a significant or potentially significant adverse effect on the environment. The analysis in this chapter explains the potential effects that staff examined and the basis for reaching its conclusion.

B. Background on Environmental Review Analysis

ARB is the lead agency for the proposed regulation and has prepared this environmental analysis pursuant to its certified regulatory program. The California Environmental Quality Act (CEQA) at Public Resources Code section 21080.5 allows public agencies with regulatory programs to prepare a plan or other written document in lieu of an environmental impact report or negative declaration once the Secretary of the Resources Agency has certified the regulatory program. ARB's regulatory program has been certified by the Secretary of the Resources Agency.[48] As required by ARB's certified regulatory program, and the policy and substantive requirements of the CEQA, ARB has prepared this environmental analysis to assess the potential for significant long or short term adverse environmental impacts associated with the proposed action and a succinct analysis of those impacts.[49] In accordance with ARB's regulations, the assessment also describes any beneficial impacts.[50] The resource areas from the state CEQA Guidelines environmental checklist were used as a framework for assessing potentially significant impacts.[51] In accordance with ARB's certified regulatory program, for proposed regulations the environmental analysis is included in the Staff Report: Initial Statement of Reasons (ISOR) for the rulemaking. [52]

CEQA requires that when ARB adopts a rule or regulation requiring the installation of pollution control equipment, or a performance standard or treatment requirement, that ARB conduct "an environmental analysis of the reasonably foreseeable methods by which compliance with that rule or regulation will be achieved."[53] The analysis shall include reasonably foreseeable environmental impacts of the methods of compliance, reasonably foreseeable feasible mitigation measures related to significant impacts, and reasonably foreseeable alternative means of compliance that would avoid or eliminate significant impacts. The analysis should not engage in speculation, nor is the detail of a project-level analysis required.

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[48] State CEQA Guidelines Cal. Code Regs., tit. 14,§ 15251 (d); Cal. Code Regs., tit. 17,§, sections 60005-60008.)
[49] Cal. Code Regs., tit. 17,§ 60005, subd. (b).
[50] Cal. Code Regs., tit. 17,§ 60005, subd. (d).
[51] State CEQA Guidelines, Appendix G.
[52] Cal. Code Regs., tit. 17,§ 60005.
[53] PRC section 21159; Cal. Code Regs., tit. 14,§ 15187

CEQA discourages speculation; however, drafting an environmental document necessarily involves some degree of forecasting.[54] While foreseeing the unforeseeable is not possible, an agency must use its best efforts to find out and disclose all that it reasonably can. If after thorough investigation, a lead agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact.

If comments that are received during the public review period raise significant environmental issues, staff will summarize and respond to the comments in writing. The written responses will be included in the Final Statement of Reasons (FSOR) for the proposed regulation amendments. In accordance with ARB's certified regulatory program, prior to taking final action on the proposed regulation amendments, the decision maker will approve the written responses.[55] If the regulation is adopted, a Notice of Decision will be posted on ARB's website and filed with the Secretary of the Natural Resources Agency for public inspection.[56]

C. Summary of 2009 Environmental Analysis

The environmental analysis published in the 2009 LCFS ISOR[57] focused on the significant GHG emission reductions that the regulation would achieve through the production and use of lower-CI transportation fuels. The analysis also included the potential GHG emission reductions realized through changes in the vehicle fleet composition that would be available to use these lower-CI transportation fuels. Staff estimated that a reduction of about 16 million metric tons of CO_2-equivalent ($MMTCO_2e$) would come solely from the combustion of transportation fuels in California in 2020. If the full-fuel-lifecycle is included in the GHG benefits of the LCFS—taking into account GHG reductions outside of California—there would be an estimated reduction of about 23 $MMTCO_2e$.

As part of the analysis, staff estimated the number of potential new transportation fuel facilities that could be built in California. This estimate relied on the volume of biomass available in the State, projects that were undergoing the permitting process at the time of the analysis, and the projected demands of both the LCFS and RFS2 in 2009. Staff estimated that potentially six ethanol facilities, 18 cellulosic ethanol facilities, and six biodiesel facilities could be operational in the State by 2020. In the 2009 analysis, staff assumed that petroleum refining throughput in California would not be affected by the LCFS; California may become a net exporter of transportation fuels rather than the net importer that it currently is when California consumption of petroleum-based fuels declines. As a result, staff did not anticipate any changes in the emissions from petroleum refineries, power plants, or existing corn ethanol facilities over the baseline

[54] Cal. Code Regs., tit. 14,§ 15145; Cal. Code Regs., tit. 14,§ 15144.
[55] Cal. Code Regs., tit. 17,§ 60007, subd (a).
[56] Cal. Code Regs., tit. 17,§ 60007, subd. (b).
[57] Air Resources Board. Proposed Regulation to Implement the Low Carbon Fuel Standard Volume I. Staff Report. Initial Statement of Reasons. March 5, 2009.

projections. In addition, staff assumed that any environmental impacts of additional electricity demand would be offset by the requirements of the 33 percent renewable portfolio standard, and off-peak charging would avert the need for additional power plants. Lastly, at the time of writing the staff report, the California corn ethanol facilities were among the cleanest in the nation, and staff did not anticipate the need to upgrade their facilities within the 2020 time frame. Therefore, any impacts above the baseline were attributed solely to potential new biorefinery facilities operating in the State.

In addition to the GHG benefits, staff also expected the LCFS to result in no additional adverse impacts to California's air quality due to criteria and toxic air pollutants. When calculating the emissions from potential new facilities, staff assumed use of the cleanest conversion and air pollution control technologies. This assumption was based on stringent New Source Review regulations affecting the permitting of these facilities. Staff recommended that any emissions from these facilities, if permitted, would be mitigated and offset, consistent with local air district and CEQA requirements. Staff identified the truck trips associated with the delivery of feedstock and finished fuel as the larger source of criteria pollutant emissions. Staff proposed that these emissions could be mitigated by using newer trucks for the trips, as prescribed by other state and federal regulations (such as LEV and CAFE standards). Furthermore, the emissions could be offset on a statewide basis through the use of these cleaner transportation fuels in California vehicles. Nevertheless, staff recognized that there was still a potential for localized impacts, which prompted a further evaluation as described below.

Staff performed a health risk assessment to estimate the potential cancer risk from a biorefinery. To establish a plausible upper-bound, staff evaluated a scenario consisting of three co-located facilities. Details of this analysis can be found in Chapter VII of the 2009 ISOR. The highest potential cancer risk associated with on-site emission risk was estimated to be 0.4-out-of-a-million at the fence line of the facility. When including both on-site and off-site emissions in the risk analysis, cancer risk was estimated to be 5-out–of-a-million. In addition to the potential cancer risk, staff also analyzed the impacts related to $PM_{2.5}$. This analysis estimated an additional 20 premature deaths, seven hospital admissions, and 314 cases of asthma, acute bronchitis, or lower respiratory symptoms.

Staff further analyzed the ambient ozone impacts and determined that the air quality model could not reliably predict the impact because the concentrations of smog-forming pollutants associated with the LCFS were not statistically significant above the baseline. Lastly, in the 2009 environmental analysis, staff provided qualitative, and in a few cases quantitative, evaluations of impacts on other types of media. Staff included impacts on water use and water quality, agricultural resources, biological resources, geography and soils, hazardous materials, mineral resources and solid waste. Finally, staff provided a brief discussion on the commitment to develop a plan to address sustainability components related to the production of feedstock and transportation fuels.

D. Analysis of Proposed Regulation Modifications

For the proposed amendments, staff analyzed potential environmental impacts in terms of reasonably foreseeable methods of compliance. This section briefly explains each modification provision and the reasonably foreseeable methods by which compliance with the provisions will be achieved.

The proposed provisions include several amendments that are administrative in nature. These include provisions to opt-in and opt-out of the regulation, a provision which mandates use of the LCFS Reporting Tool, and a provision to convert the Method 2A/2B application process to a certification process.

In addition to the administrative provisions, staff is proposing regulation amendments which are more extensive than administrative changes. These include amendments to enhance the regulated party provision by expanding the definition of "producer", specify a credit tracking and trading process, revise the Energy Economy Ratios (EER) for electricity and fuel cell vehicles, add a regulatory approach for High Carbon Intensity Crude Oil (HCICO), and modify the designation of regulated parties for electricity.

Opt-In and Opt-Out Provisions

Staff determined that there are no significant adverse environmental impacts due to this proposal. Staff is proposing to modify language in the regulation to clarify procedures for parties to opt-in and to opt-out of the regulation. The modifications would encourage parties to register for the regulation by providing simple and clear steps to become a regulated party (opt-in) and to cease being a regulated party (opt-out). Compliance with this provision is administrative in nature.

Staff anticipates that the modifications to the opt-in and opt-out provisions could result in a greater number of parties who are eligible to generate credits registering for the regulation. As a result, a greater number of credits could potentially be generated and available on the credit market for purchase by regulated parties seeking to meet compliance obligations. In turn, more credits available for purchase for compliance purposes could potentially deflate credit value and lower overall compliance costs.

Enhanced Regulated Party Provisions

Staff determined that there are no significant adverse environmental impacts due to this proposal. Staff is proposing to expand the definition in the regulation of "producer" to include production facilities located outside California. This modification would allow out-of-state producers to opt into the regulation. Staff is also proposing to expand the definition in the regulation of "import facility" to include the transportation equipment that held or carried the product at the point the equipment entered California. These modifications would allow out-of-state fuel producers and intermediate entities having title of an imported fuel to opt into the regulation, become regulated parties, and therefore generate and hold LCFS credits.

Mandatory LCFS Reporting Tool Use

Staff determined that there are no significant adverse environmental impacts due to this proposal. Currently the LCFS regulation mandates the use of "an interactive, secured internet web-based form" for submitting annual compliance and quarterly progress reports. Since all reporting parties are using ARB's LCFS Reporting Tool (LRT) as that "interactive, secured internet web-based form," staff is proposing to modify the regulation to require the LRT be used for all reporting requirements. Compliance with this provision is administrative in nature.

Credit Trading

Staff determined that there are no significant adverse environmental impacts due to this proposal. Staff is proposing to add provisions in the regulation that clarify how credits and deficits are tracked, and to specify the process to be used to acquire, bank, transfer, and retire credits. In the proposal, staff is also including a provision that allows a regulated party to acquire credits in the first quarter of a year to meet a compliance obligation in the previous year, as long as those credits were generated in a previous year. This proposal further seeks to establish requirements relating to the public release of information concerning the generation of deficits and the generation, use, and transfer of credits.

Revised EERs

Staff determined that there are no significant adverse environmental impacts due to this proposal. Staff is proposing three modifications to the Energy Economy Ratios (EERs). First, staff is proposing to add to the regulation an EER of 1.0 for heavy-duty compression-ignited engines fueled with compressed natural gas (CNG) or LPG. Currently, the EER in the regulation for these vehicles is 0.9. Second, staff is proposing to change the EER for the electricity used in light-duty battery electric vehicles and plug-in hybrids from 3.0 to 3.4. Third, staff is proposing to change the EER for light-duty fuel cell vehicles from 2.3 to 2.5.

The proposed changes to EER values have the potential to increase the number of credits generated for CNG/LNG, electricity, and hydrogen transportation fuels. An increase in the number of credits available for regulated parties to purchase could decrease the value of a credit, potentially decreasing compliance costs.

Certification Process for Method 2A/2B

Staff determined that there are no significant adverse environmental impacts due to this proposal. In the current regulation, the process through which a regulated party receives approval to use a carbon intensity value determined through the Method 2A/2B process requires an Executive Officer or Board hearing. Staff is proposing to convert this regulatory process to a certification process to save staff resources, yet maintain

the technical rigor and public input of the current requirements. Compliance with this provision is administrative in nature.

High Carbon Intensity Crude Oil (HCICO)

As part of the regulatory amendments for the handling of crude oil, three substantial changes have been proposed. First, the concept of a grandfathered "basket" of crudes would be replaced with a "baseline," which accounts for the emissions intensity of all crude sources refined in California. Second, the baseline carbon intensity values for CARBOB and ULSD and the associated base deficit attributed to producing these fuels would be referenced to a more recent baseline year to reflect more accurate data than were available for the 2009 rulemaking. Third, the incremental deficit would not apply a 15.00 gCO_2e/MJ bright line for differentiating between high-carbon-intensity-crude-oils (HCICOs) and non-HCICOs. Instead, the proposal would eliminate the distinction entirely and simply require refiners to account for the difference in actual crude carbon intensity values that occur over time relative to a specified baseline. Thus, this would eliminate the "either/or" approach in the current provision and replace it with a continuum-based approach. In the discussion below, we refer to the crude treatment in the current regulation as the "current provision" and the proposed changes as the "California Average Approach."

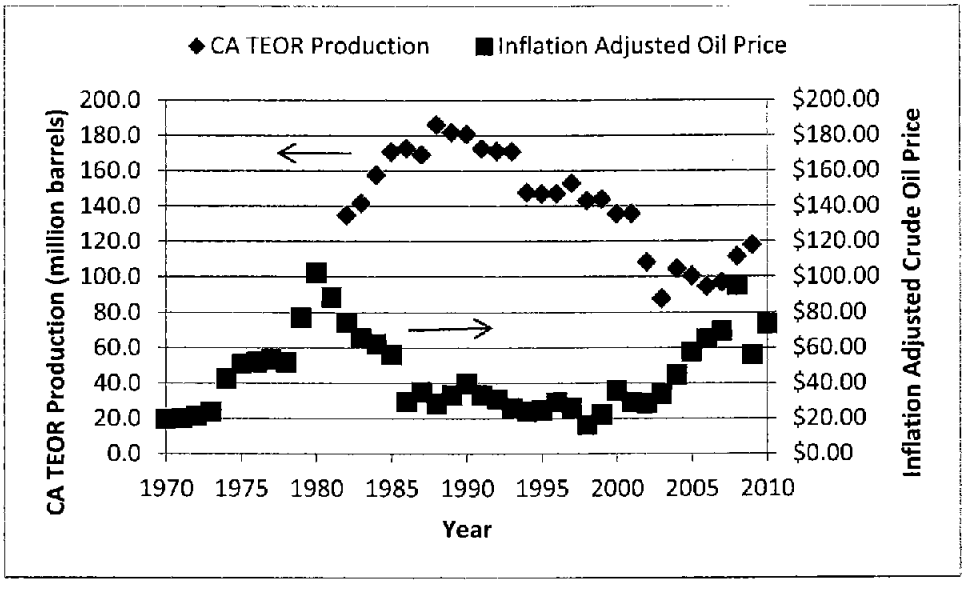
The California Average Approach provides a much more accurate accounting for GHG emissions from all crude oil used by California refineries. This more accurate accounting is necessary to prevent the possibility for backsliding in GHG emissions reductions, which could occur under the current provision. First, by removing the distinction between basket and non-basket crudes, the California Average Approach accurately accounts for emissions associated with increasing production of the basket crudes. Under the current provision, basket crude oil that uses high intensity production methods is assigned the average CI for basket crudes of 8.07 gCO_2e/MJ. Under the California Average approach, this crude would be assigned a CI value more representative of its actual emissions.

Second, the California Average Approach removes the HCICO threshold (15 gCO_2e/MJ) for non-basket crudes. Under the current provision, a non-basket crude with a CI of 14 gCO_2e/MJ will be assigned a CI of 8.07 gCO_2e/MJ, and the excess GHG emissions will not be mitigated. Under the California Average approach, this crude would accurately be assigned a CI of 14 gCO_2e/MJ. This differentiation in carbon intensity values for all crudes may be important because not all crudes produced using thermally enhanced oil recovery (TEOR), mining, or upgrading will have carbon intensity values above 15 gCO_2e/MJ. Moreover, unconventional production methods – such as gas-to-liquids, or enhanced oil recovery methods, such as CO_2 injection, hydrocarbon injection, and chemical injection – and conventional primary or secondary recovery with excessive flaring may also have higher than average CI values that are less than 15 gCO_2e/MJ.

Third, the California Average Approach captures expected increases in emissions intensity of producing conventional crudes as current fields become depleted. The current regulation does not account for GHG emissions increases in conventional crude production unless the CI reaches the unlikely level of 15 gCO_2e/MJ. Further discussion of the implications of more accurate GHG emissions accounting are provided below.

Under the current crude oil provision, there is significant potential for backsliding in the emissions reduction benefits of the regulation due to the grandfathering of basket crude sources. The current crude oil provision was written with the assumption that the use of high-intensity crude from basket sources would likely decrease between 2010 and 2020. This assumption was based on California thermally-enhanced crude (CA TEOR) being the primary source of high-intensity crude within the basket and the annual production of CA TEOR declining significantly from 1990 through 2006 (see Figure 4). The 2006 data were the most recent available to staff on CA TEOR production at the time the current provision was written in 2009.

Figure 4: Trends in CA TEOR Production and Inflation Adjusted Crude Oil Price[58]



As depicted in Figure 4, CA TEOR production shows an overall decline over the past 20 years, but with periods of increasing production occurring in the 1980s and 2006 through 2009. The periods of increasing production correlate well with periods of high oil prices, with a time lag of a few years. High oil prices incent development of new

[58] Spreadsheet containing data from:

- CA TEOR production data from California Department of Conservation, Division of Oil, Gas, and Geothermal Resources, Annual Reports of the State Oil and Gas Supervisor for years 1983 to 2010, available at: http://www.conservation.ca.gov/dog/pubs_stats/annual_reports/Pages/annual_reports.aspx
- Crude oil price data obtained from http://inflationdata.com/inflation/inflation_Rate/Historical_Oil_Prices_Table.asp

thermal production, which requires high up-front capital expenditure, and also allow for previously unprofitable wells to be brought back into service. These wells commonly require high steam-to-oil ratios and therefore are only profitable with high oil prices. Between 2006 and 2009, production of CA TEOR increased from 95 to 118 million barrels per year (an average rate of increase of 8 million barrels per year).

The International Energy Agency predicts that oil prices will remain high through 2020 with average prices remaining in the $90 to $100 per barrel range (or higher).[59] Therefore, it is likely that CA TEOR production will remain high and possibly continue to increase through 2020. If the very high growth rate observed over the period of 2006 to 2009 were to continue over the time period for the regulation, an additional 760 million barrels of high-intensity crude would be produced in California as compared to the assumed static 2006 baseline level (95 million barrels per year being maintained over the period of 2010 to 2020).

If refined in California, the current regulation would assign the average carbon intensity of 8.07 gCO_2e/MJ to this additional high intensity crude and therefore excess emissions associated with producing the crude would not be mitigated. If one assumes an average carbon intensity of 20 gCO_2e/MJ for high-intensity crude production, an additional 760 million barrels of high-intensity crude from basket sources would result in approximately 45 million metric tons GHG emissions that do not get mitigated. This is equivalent to approximately three times the expected GHG emissions reductions from the LCFS during the year 2020.

We note that it is not likely that this high growth rate in CA TEOR production will continue through 2020, as reserves of crude oil in California are becoming depleted, but the calculation does inform as to the potential magnitude of the problem and the need to amend the current crude oil provision.

The California Average Approach also improves the accounting of GHG emissions associated with conventional primary or secondary production, which are expected to increase over time. Because the carbon intensity of this crude will not likely exceed the 15 gCO_2e/MJ threshold, the crude will always be assigned a carbon intensity of 8.07 gCO_2e/MJ under the current provision. Therefore, the expected increase in carbon intensity for conventional crude production would go unmitigated under the current regulation.

Crude oil projections presented in the 2010 World Energy Outlook show that in the year 2020, crude recovery from fields currently in production will be in rapid decline and a third of the conventional crude oil will originate from fields yet to be developed and even yet to be discovered.[60] The carbon intensity of conventional crude production in 2020 will likely be greater than today because fields in decline become more carbon-intensive

[59] International Energy Agency, 2010, World Energy Outlook 2010, page 72.
[60] International Energy Agency, 2010, World Energy Outlook 2010, page 122.

as recovery progresses from primary to secondary to tertiary. For example, as fields become depleted, water injection rates increase as indicated by average water-to-oil ratios (WOR) in the U.S. and Canada in excess of 10. An increase in WOR from 3 to 15 results in approximately three times the GHG emissions for crude lifting and water reinjection.[61]

New production is also likely to be more carbon-intensive. Much of the new conventional production is occurring offshore from deep sea wells. Secondary production from deep sea wells using water injection can be very GHG-intensive. Also, offshore production and rapidly developed onshore production (e.g., Bakken field in North Dakota and Montana) is often accompanied by excessive flaring.

By accurately accounting for carbon intensity of all crudes, the California Average Approach provides an incentive, all else being equal, for refiners in California to:

- Purchase crudes produced locally, as these crudes will have lower transportation emissions (more than 1 gCO_2e/MJ difference between crudes from South or Central America and those from Africa or the Middle East);
- Purchase crudes produced with low flaring emissions. Angola and Nigeria both produce light to medium sweet crudes, but flaring in Nigeria contributes over 6 gCO_2e/MJ more to GHG emissions; and
- Purchase thermally-recovered crudes that employ cogeneration or use a lower steam-to-oil ratio.

Although the market signal resulting from this incentive is likely small, it would grow if other jurisdictions adopt an LCFS program with similar provisions.

The regulation is currently structured so that the compliance schedule CI targets are based on average CI values for CaRFG (California Reformulated Gasoline) and ULSD (Ultra-Low-Sulfur Diesel). The CI of CaRFG reflects a mixture of 90 percent CARBOB and 10 percent California Average Corn Ethanol. The average Lookup Table CI values for CARBOB and ULSD are calculated using the average crude oil slate refined in California in the year 2006. Under the proposal, the portion of the CIs for CARBOB and ULSD due to the production and transport of crude oil used in California refineries will be updated to reflect crude supplies used in the most recent year currently available, which is 2009. In effect, this would:

- Increase the CI value attributable to the production and transport of crude oil from the current 8.07 gCO_2e/MJ to a higher value of 9.72gCO_2e/MJ, an increase of 1.65 gCO_2e/MJ;

[61] Jacobs Consultancy and Life Cycle Associates, 2009, Life Cycle Assessment Comparison of North American and Imported Crudes, prepared for Alberta Energy Research Institute.

- Change the base CI values for CARBOB, CaRFG, and ULSD from 95.86 gCO_2e/MJ, 95.85 gCO_2e/MJ, and 94.71 gCO_2e/MJ to 97.51 gCO_2e/MJ, 97.39 gCO_2e/MJ, and 96.36 gCO_2e/MJ, respectively; and
- Require a corresponding change in the annual LCFS standards to reflect a higher CI baseline for CaRFG and ULSD. These changes would apply to fuels supplied between 2013 and 2020.

The 1.65 gCO_2e/MJ increase in production and transport CI of California average crude oil under the proposal is comprised of three components:

- 0.5 gCO_2e/MJ is due to the change in calculation methodology. Applying the methodology used in the proposal to the 2006 crude data would result in a carbon intensity for crude recovery and transport of 8.57 gCO_2/MJ;
- 0.8 gCO_2e/MJ is due to the increase in CA TEOR production from 95 to118 million barrels per year between 2006 and 2009[62,63]; and
- 0.35 gCO_2e/MJ is due to the increase in non-basket HCICO imports from Canada, Venezuela, and Oman. Annual imports of Canadian oil sands and Venezuelan extra-heavy crude have increased between 2006 and 2009, from less than 5 million barrels to over 14 million barrels[64]. An additional small amount of TEOR from Oman was imported in 2009 but actual amounts are unknown.

The increase in CA TEOR production between 2006 and 2009 and related GHG emissions are "grandfathered" in the current approach under the "2006 basket" and therefore would have gone unmitigated regardless of the proposal. However, the current regulation would have required mitigation of the extra GHG emissions from use of the non-basket HCICOs imported from Canada, Venezuela, and Oman in 2009. The proposal provides disincentive for total thermal/mining/upgraded production to increase further, but will allow this additional high intensity crude to remain within the baseline. The overall effect of these factors is that the new 2009 baseline under the proposal would result in a CI increase of 0.35 gCO2e/MJ.

It should be noted that some of this increase in the baseline would be mitigated by the enhanced GHG benefits under the updated compliance schedules of the proposal. Because the revised baseline CI for CaRFG and ULSD is slightly higher (increase of 1.54 gCO_2e/MJ and 1.65 gCO_2e/MJ, respectively) than the current regulation, the ten percent reduction goal of the LCFS from these larger values will produce somewhat greater net emissions. For example, the relative gasoline and diesel CI-reduction

[62] California Department of Conservation, 2007, Division of Oil, Gas, and Geothermal Resources, 2006 annual Report of the State Oil and Gas Supervisor, page 3.
[63] California Department of Conservation, 2010, Division of Oil, Gas, and Geothermal Resources, 2009 annual Report of the State Oil and Gas Supervisor, page 3.
[64] California Energy Commission, October 11, 2011, Email Correspondence: Spreadsheet Data on Canadian and Venezuelan crude oil production.

requirements from the baseline through 2020 would each increase by 0.15 gCO_2e/MJ and 0.16 gCO_2e/MJ under the proposal. Further, the total deficits created with a 1.65 gCO_2e/MJ increase in crude oil CI are on the order of 3.5 percent (approximately 2.3 million MTs more deficits between 2013 and 2020). These effects enhance the GHG benefits expected from the LCFS program under the proposal.

Regulated Parties for Electricity

Staff is proposing modifications to the provisions in the regulation that designate which parties may opt-in as regulated parties for electricity. The proposed provisions clarify which parties are eligible to become regulated parties and receive credits for supplying electricity as a transportation fuel.

Although the proposed provisions alter the recipients of credits for electricity, they do not change the total number of credits that can potentially be generated. However, staff is proposing to include default parties who can potentially receive credits if the first-in-line designated party chooses not to become a regulated party by opting into the LCFS. Staff anticipates that including default parties in the regulation could potentially increase the number of credits captured and offered on the credit market for purchase, thereby decreasing the cost of purchasing credits and reducing compliance costs.

2. Impacts Analysis

    a. GHG and Air Quality Benefits

Opt-in and Opt-out Provisions

The proposed opt-in, opt-out provisions could potentially result in avoided emissions if a regulated party chose to purchase credits from an opt-in fuel producer to meet compliance obligations rather than create an additional demand for biofuels, resulting in the siting and building a new biorefinery.

Staff anticipates no further air quality benefits would result from the opt-in, opt-out regulation modifications.

Enhanced Regulated Party Provisions

As with the proposed opt-in, opt-out provisions described above, the enhanced regulated party provisions could potentially result in a greater number of parties who are eligible to generate credits registering for the regulation. The benefits of additional credits in the LCFS marketplace are similar to those described for opt-in, opt-out provisions.

Staff anticipates no further air quality benefits would result from the enhanced regulated party provisions.

Mandatory LCFS Reporting Tool Use

Staff anticipates no air quality benefits would result from the proposed mandatory LCFS reporting tool provision.

Credit Trading

Staff anticipates no air quality benefits would result from the proposed credit trading provisions.

Revised EERs

The modifications staff is proposing to EER values for electricity and fuel cell vehicles would result in a greater number of credits for regulated parties of these fuels. If the fuels were considered more attractive to regulated parties due to the increase in total credit value, it is conceivable that some shift in fuel use could occur. Because both electricity and hydrogen meet the 2020 carbon intensity standard, there could be air quality benefits if usage shifted from higher carbon intensity fuels.

Certification Process for Method 2A/2B

Staff anticipates no air quality benefits would result from the Method 2A/2B certification process provisions.

High Carbon Intensity Crude Oil (HCICO)

As explained below, staff believes that the proposal would provide a framework for enhanced GHG benefits, and that the proposal would not result in additional adverse impacts to California's air quality relative to the existing regulation.

The proposed changes to the handling of crude oil under the LCFS may result in an increase or a decrease in GHG benefits under the LCFS program, depending on projections for crude —specifically, California crudes – supplied to California refineries. Under the current regulation, an increase in California TEOR production would not have to be mitigated because it is grandfathered crude; therefore, the current regulation would be less protective than the proposed amendment, which would account for additional HCICO, domestic or imported. Conversely, if California TEOR production declines by 2020 and is replaced by imported HCICO, the current regulation would impose a CI penalty on the imported HCICO, whereas the proposed amendments would apply no such penalty as long as the total HCICO volume remains the same or declines. Finally, since the proposed amendment will assign lower CI values for California non-TEOR crudes (i.e., a true accounting of crude CIs), their use could mitigate the additional GHG impacts incurred by the additional use of crudes from TEOR production.

Overall, staff believes that the proposed revisions are necessary to properly account for the CI values of all crudes processed in California, irrespective of source. The current

regulation does not accomplish this, and grandfathered "basket "crudes that are HCICO could increase in production with no mitigation required, thereby reducing the effectiveness of the LCFS during the remaining period (2013 to 2020) of the LCFS program.

The proposed 2009 baseline CI is slightly higher than the 2006 baseline, so additional volumes of imported, higher-CI crudes may be processed in California refineries. However, since the ten-percent reduction goal of the LCFS will produce greater net GHG emissions reductions under the proposal—10 percent of a larger number is also a larger number—some of the impacts of the higher baseline CI will be mitigated. For example, the potential incremental GHG benefits under the revised compliance schedules are estimated to be about 259,000 MT CO_2e in 2020; therefore, the total GHG emissions reductions for the LCFS in 2020 are estimated to be about 16.1 MMT CO_2e instead of the original 15.8 MMT CO_2e.

Staff expects the proposed HCICO provisions to result in no additional adverse impacts to California's air quality due to criteria and toxic air pollutants relative to the current regulation. Based on stringent New Source Review regulations affecting the permitting of these facilities, staff recommends that emissions from these facilities be mitigated and offset pursuant to local air district and CEQA requirements.

Regulated Parties for Electricity

Staff anticipates no air quality benefits would result from the modifications to the regulated parties for electricity.

b. Other Potential Impacts

Based on ARB's review of the proposed regulation, staff concludes that the regulation would not have a significant adverse effect on the environment as explained below. No discussion of alternatives or mitigation measures is necessary because there are no significant adverse environmental impacts identified.

Compliance with all the proposed amendments would not require or result in any physical change to the existing environment, that might involve new development or require modifications to buildings or other structures, or affect operations at existing facilities, or cause any new land use designation. Therefore, these provisions are not expected to result in any adverse impacts to aesthetics, air quality, agricultural and forestry resources, biological resources, cultural resources, geology and soils, greenhouse gases, land use planning, mineral resources, population and housing, public services, recreation, or traffic and transportation. Further, compliance with the proposed modifications to the LCFS does not involve any activity that would involve or affect hazardous material, hydrology and water quality, noise, or population and housing because they do not mandate any action that could affect these resources.

E. Environmental Justice

ARB is committed to integrating environmental justice in all of its activities. On December 13, 2001, the Board approved "Policies and Actions for Environmental Justice," which formally established a framework for incorporating Environmental Justice into ARB's programs, consistent with the directive of California state law.[65] Environmental Justice is defined as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.

The proposed amendments to the LCFS regulation are consistent with the environmental justice policy to reduce health risks from GHG emissions in all communities, especially those with low-income and minority populations, regardless of location. The proposed amendments will continue to reduce GHG emissions from the use of transportation fuels in California.

AB 32 requires that, to the extent feasible and in furtherance of achieving the statewide greenhouse gas emission limit, ARB must consider the potential for direct, indirect, and cumulative emission impacts from market-based compliance, including localized impacts in communities that are already adversely impacted by air pollution, design the program to prevent any increase in emissions, and maximize additional environmental and economic benefits prior to the inclusion of market-based compliance mechanisms in the regulations. As ARB further develops its approach for consideration of these issues, staff will continue to consult with outside experts.

[65] Air Resources Board, 2001, Policies and Actions for Environmental Justice

VI. ECONOMIC IMPACT ANALYSIS

In this chapter, ARB staff analyzed a number of proposed LCFS regulation amendments (as outlined below) and estimated their potential fiscal and economic impacts. The economic analysis includes the costs and savings associated with the economic impacts on businesses, consumers, and government agencies. For a full description of each of the proposed regulatory amendments, please see Chapter IV.

A. Legal Requirements

This section explains the legal requirements that must be satisfied in analyzing the economic impacts of the regulation. Section 11346.3 of the Government Code requires State agencies to assess the potential for adverse economic impacts on California business enterprises and individuals when proposing to adopt or amend any administrative regulation. The assessment shall include a consideration of the impact of the proposed regulation on California jobs, business expansion, elimination or creation, and the ability of California businesses to compete with businesses in other states. Also, State agencies are required to estimate the cost or savings to any State or local agency and school district in accordance with instructions adopted by the Department of Finance. The estimate shall include any non-discretionary cost or savings to local agencies and the cost or savings in federal funding to the State. Finally, Health and Safety Code section 57005 requires ARB to estimate the economic impacts of submitted alternatives to a proposed regulation before adopting any major regulation. A major regulation is defined as a regulation that will have a potential cost to California business enterprises in an amount exceeding ten million dollars in any single year. The following is a description of the methodology used to estimate costs as well as ARB staff's analysis of the economic impacts on California businesses, consumers, and government agencies.

B. Summary of the Economic Impacts

Opt-in, opt-out provisions

Staff will provide clarity to opt-in and opt-out procedures, which could encourage the regulated parties to opt-in, resulting in greater number of LCFS credits generated and available for use by regulated parties. If a regulated party selects to opt-out, then all the available generated credits by the regulated party shall be retired.

Economic Impact: Greater number of LCFS credits generated and available for use could reduce the cost of LCFS credits, thereby reducing compliance costs.

Enhanced Regulated Party Provisions

Allows out-of-state fuel producers and distributors to qualify as regulated parties and generate credits, which could result in greater number of LCFS credits available for use for compliance.

Economic Impact: Greater number of LCFS credits generated and available for use could reduce the cost of LCFS credits, thereby reducing compliance costs.

Mandatory LCFS Reporting Tool Use

Proposed regulatory amendment will require regulated parties to use only the LCFS Reporting Tool (LRT) as the "interactive, secured internet web-based form" required by the current regulation.

Economic Impact: Staff expects no economic impact, as regulated parties are already using the LRT exclusively to comply with LCFS reporting requirements.

Credit Trading

Staff is proposing to add provisions in the regulation that clarify how credits and deficits are tracked and to specify the process to be used to acquire, bank, transfer, and retire credits. In the proposal, staff is also including a provision that allows a regulated party to acquire credits in the first quarter of a year to meet a compliance obligation in the previous year, as long as those credits were generated in a previous year. This proposal further seeks to establish requirements relating to the public release of information concerning the generation of deficits and the generation, use, and transfer of credits.

Economic Impact: By adding certainty to the credit market, credit transactions should increase, thereby lowering the cost of compliance. Both credit sellers and buyers will be more likely to carry out transactions within a rational and predictable framework, improving the efficiency of the LCFS credit market.

Revised EERs

Staff is proposing three modifications to the Energy Economy Ratios (EERs). First, staff is proposing to add to the regulation an EER of 1.0 for heavy-duty compression-ignited engines fueled with compressed natural gas (CNG) or LPG. Currently, the EER in the regulation for these vehicles is 0.9. Second, staff is proposing to change the EER for the electricity used in light-duty battery electric vehicles and plug-in hybrids from 3.0 to 3.4. Third, staff is proposing to change the EER for light-duty fuel cell vehicles from 2.3 to 2.5.

Economic Impact: The proposed changes to EER values have the potential to increase the number of credits generated for CNG/LNG, electricity, and hydrogen transportation fuels. An increase in the number of credits available for regulated parties to purchase can decrease the value of a credit, potentially decreasing compliance costs.

Certification Process for Method 2A/2B

In the current regulation, the process through which a regulated party receives approval to use a carbon intensity value determined through the Method 2A/2B process requires an Executive Officer (EO) or Board hearing. Staff is proposing to convert this regulatory process to a certification process to save staff resources, yet maintain the technical rigor and public input of the current requirements.

Economic Impact: The Method 2A/2B application requirements and the technical analyses conducted by staff during the review of those applications will remain unchanged; therefore, there should be no economic impact on the regulated parties related to the proposed certification process. The benefit of the proposed certification process is a streamlined approval process that reduces staff resources, which then can be redirected to other tasks and program needs. This fiscal cost effects are discussed below in section D.2.

High CI Crude Oil (HCICO)

The proposed LCFS high carbon intensity crude oil (HCICO) amendment departs from the existing HCICO provisions in two fundamental ways. It establishes a new baseline consisting of the 2009 crude mix processed by California refineries, and it assigns a single average CI to every crude oil refined into transportation fuel for sale in California. This California average crude CI would be calculated annually and would apply to the reporting period following its calculation. For example, data for the 2012 crude slate would become available sometime in 2013, at which the California average crude CI would be calculated. This California average crude CI would become applicable on January 1, 2014.

This California average approach to HCICO accounting would replace the existing approach which established a California "basket" containing the crudes processed by California refineries in 2006. The average CI calculated for that basket (8.07 gCO_2e/MJ) was assigned to all crudes contained therein. All crudes *not* in the 2006 basket were to be screened to identify those which are clearly not HCICOs, and those which have the *potential* to be HCICOs. Regulated parties using crudes in the latter category would be required to formally estimate the CI of those crudes using the LCFS Method 2B process. If a Method 2B analysis revealed that the extraction and transportation components of the resulting CI exceeded 15 gCO_2e/MJ, the affected crudes would be deemed to be a HCICO, and would be assigned the CI estimate from its Method 2B analysis.

A shortcoming with the original proposal was that an accurate CI accounting was only required for crudes that exceeded the threshold value of 15 gCO_2e/MJ. Crudes contained in the 2006 basket and crudes with extraction and transportation CIs below the 15 gCO_2e/MJ threshold were able to use the baseline mix CI of 8.07 gCO_2e/MJ. The adoption of the California average approach addresses this shortcoming.

The proposed California Average approach fully accounts every year for the carbon intensity of all crudes processed by California refineries selling transportation fuel into the California market. However, because the California Average approach assigns a single average value to the whole California crude slate, individual refineries processing crudes with CIs that are above the California average will realize a benefit by not having as large a CI deficit to mitigate, while those with CIs that are below the State average will experience a cost by sharing the mitigation of higher-CI crudes that they did not process.

The crude purchasing incentives created by the California average approach vary according to a number of factors. All refiners, however, share the same basic incentive to maintain the California average year-over-year.

Cost Impacts to Fuel Producers

As a result of the differences described above, the HCICO purchasing incentives created by proposed amendments are quite different from the incentives that exist under the current provisions. Under the proposed amendments, the costs incurred depend upon how refiners respond to two potentially competing incentives: the financially driven desire to purchase suitable crudes at least cost and the desire to maintain the California Average. At times, a refinery may find it advantageous from a business perspective to run a HCICO. Doing so, however, risks increasing the California Average. Increases in the California Average must be mitigated by offsetting purchases of lower-CI fuels or the use of credits.

Understanding this dynamic requires that we first understand the case in which the California average is maintained. The proposed California Average approach provides California fuel producers with a number of opportunities to maintain the California Average CI.

1. By using a 2009 baseline, the proposed approach provides more flexibility to fuel producers than does the 2006 baseline used in the existing regulation. Since the 2009 baseline contains higher levels of HCICO than the 2006 baseline, it would allow more flexibility to fuel producers when considering the purchase of higher volumes of HCICOs.
2. The proposed California Average approach provides refiners with the flexibility to substitute one HCICO for another. A HCICO from a newly developed source, such as Canada for example, could be substituted for HCICO from a declining source, such as Venezuela. Under the existing provisions, this substitution would constitute a change from a grandfathered basket crude to a HCICO, triggering an increase in the refiner's CI. This ability to switch among differing HCICOs while maintaining a constant HCICO volume and a constant California Average provides refiners with significant flexibility—flexibility that is unavailable under the current HCICO provisions.
3. Under the proposed amendment, all crudes—including non-HCICOs—are assigned an appropriate and current average value. Under the existing provisions,

non-HCICOs with actual CIs of 15 gCO_2e/MJ or less are assigned a CI of 8.07gCO_2e/MJ. A significant proportion of the California crude slate may fall into this category. The annual California average that would be calculated under the proposed amendment would include the actual CIs of this category of crude oils. These low-CI crudes would at least partially offset the HCICO CIs also included in the average.

The use of a 2009 baseline, the ability to substitute HCICOs without penalty, and the inclusion of low-CI crudes in the California average will result in compliance costs that are no higher than the costs of complying with the existing HCICO provisions. Due to the increased flexibility introduced by the proposed amendments, compliance costs could be lower than they would be under the existing provisions.

Having covered the case in which the California average is maintained year-over-year, it is now necessary to discuss the case in which the California average rises due to a net increase in HCICO purchases. The resulting increase in the average crude CI would need to be mitigated through the increased use of lower-CI fuels and, possibly, the use of credits.

A comparison of the existing and proposed HCICO provisions under a rising average CI scenario requires an examination of the cost impacts of in- and out-of-basket crudes:

1. Crudes that are outside of the California basket.

   Under the current regulation, any HCICO from outside of the California basket results in a CI penalty (in the form a mitigation requirement). Under the proposed amendment, however, some of the non-basket HCICO purchases could be offset by decreases in purchases of in-basket HCICOs. Such offsets will not always occur, of course, but, over the long run, enough offsetting purchases would occur to lower the cost of compliance of under the proposed amendments relative to compliance costs under the existing provisions.

2. Crudes that are in the California basket.

   Unlike the existing provisions, the proposed amendments would require all increased purchases of in-basket HCICOs to be included in the calculation of the California Average. Generally, this represents an increased cost of compliance, which would partially or wholly offset the decreased compliance costs realized for out-of-basket crudes (see section (a), above). In practice, however, reduced purchases of out-of-basket HCICOs would act to reduce the upward pressure from the in-basket purchases. Under the existing provisions, the benefits of reduced purchases of out-of-basket HCICOs would accrue only to the refiners reducing their HCICO use.

Potential Cost Savings

As mentioned above, the current LCFS regulation requires regulated parties using crudes that are "potential-HCICOs" (i.e., those that did not pass the first screening process that would have identified them as clearly non-HCICO) to formally estimate the CI of those crudes using the LCFS Method 2B process. Based on staff experience to date with the Method 2A/2B process, staff estimates that a 2B application would cost the applicant about $20,000. Since 65 market crudes out of 255 did not pass the initial screening process, at $20,000 apiece for a Method 2B application, total costs could be as high as $1.3 million if all of these crudes needed CI values for California use. Under the proposed amendments, ARB staff will calculate the California average crude CI, obviating the need for regulated parties to go through the Method 2B process.

Summary

Where the existing provisions strongly discourage the purchase of out-of-basket HCICOs while simultaneously allowing unlimited, penalty-free purchases of in-basket HCICOs, the proposed amendments generally dis-incent *all* HCICO purchases by all refiners. The differences created by the removal of the California basket under the proposed amendments make any comparison between the existing and proposed provisions a complex undertaking. The analysis presented in this chapter shows, however, that the 2009 baseline, the ability to substitute HCICOs without penalty, and the inclusion of low-CI crudes in the proposed California average will tend to contain compliance costs. Compliance costs under the proposed amendments will be no higher than compliance costs under the existing provisions. The added flexibility that would be created under the proposed amendments could result in reduced compliance costs.

Regulated Parties for Electricity

Staff is proposing modifications to the provisions in the regulation that designate which parties may opt-in as regulated parties for electricity. The proposed provisions clarify which parties are eligible to become regulated parties and receive credits for supplying electricity as a transportation fuel.

Although the proposed provisions alter the recipients of credits for electricity, they do not change the total number of credits that can potentially be generated. However, staff is proposing to include default parties who can potentially receive credits if the first-in-line designated party chooses not to become a regulated party by opting into the LCFS.

Economic Impacts: Staff anticipates that including default parties in the regulation could potentially increase the number of credits captured and offered on the credit market for purchase, thereby decreasing the cost of purchasing credits and reducing compliance costs.

C. Methodology for Estimating Costs

As discussed above, most of the proposed amendments to the LCFS regulation will not result in any fiscal or economic impacts. Staff asserted that several of the proposed amendments would result in additional credits being generated and used within the LCFS program, thereby reducing the cost of credits and reducing compliance costs. Staff did not and could not quantify the benefits of additional available LCFS credits; however, basic economic principles of supply-and-demand support staff's assertions.

D. Potential Costs to Local, State, and Federal Agencies

Fiscal Impact on State, Local, and Federally-Funded Programs

There are no fiscal impacts on these programs.

Other Fiscal Effects on Government

Method 2A and 2B pathway carbon intensities are currently approved through the regulatory change process. Final approval is granted by the Executive Officer at a public hearing. Staff proposes to streamline the approval process by converting the regulatory process to a certification process, thereby reducing staff resources, which then can be redirected to other tasks and program needs. ARB currently runs several effective certification programs, including programs to certify diesel control devices and distributed generation equipment. Staff's proposed certification program will maintain the technical rigor and public input of the current regulatory process, yet realize significant staff utilization efficiencies as estimated in Table 6 below:

Table 6. Fiscal Effects of a Regulatory Change Process

					Totals	
Classification	**Annual PY cost [a]**	**Low Hourly Personnel Cost**	**High Hourly Personnel Cost**	**Grand Total Hours devoted to Reg. Change**	**Low**	**High**
Air Pollution Specialist [b]	$107,000 - $164,000	$60	$92	272	$16,345	$25,183
Air Resources Engineer [b]	$118,000 - $172,000	$66	$97	368	$24,355	$35,572
Air Resources Supervisor 1 [c]	$156,000 - $181,000	$88	$102	111	$9,753	$11,301
Air Resources Supervisor 2 [c]	$167,000 - $195,000	$94	$110	63	$5,934	$6,899
AGP Video Coordinator [c][d]	N/A	N/A	N/A	N/A	N/A	$6,700
2 Associate Government Program Analyst [c][d]	$110,000 - $124,000	$62	$70	10	$617	$700
2 Students [c][d]	N/A	$13		8	$104	$104
Court Reporting Services [c][d]	N/A	N/A	N/A	N/A	$250	$800
Grand Totals					$57,582	$87,503

(a): The total costs include salaries and wages, benefits, operating expenses and equipment
(b): Information provided by ASD
(c): Using data from ARB
(d): Data provided by ARB

VII. ANALYSIS OF ALTERNATIVES

This Chapter provides an analysis of the alternatives to the proposed amendments to the Low Carbon Fuel Standard (LCFS) regulation. The Chapter is divided into two sections. The first section represents an analysis of the status quo alternative—that is, the "no action" alternative. The second section addresses specific alternatives to staff's proposed amendments. A detailed discussion of each alternative considered follows in the subsections below.

A. "No Action" Alternative

One of the alternatives to the proposed regulatory amendments is to keep the current LCFS regulation as is (i.e., "no action" alternative). ARB staff evaluated this alternative, the analyses of which are summarized below:

1. Energy Economy Ratios (EERs)

Since the publication of the ARB's original LCFS ISOR in March 2009, new fuel economy data have become available for alternative-fueled vehicles. Not revising the EERs values to reflect the most current energy efficiency data available for actual vehicles available in today's market would result in the LCFS regulation being out-of-date on emerging vehicle technologies. Staff's proposal to update the EERs values for CNG/LNG burning heavy-duty vehicles and for light-duty vehicles in the battery electric vehicle, plug-in hybrid, and fuel cell-powered categories would reflect current 2011 powertrain efficiencies that were unavailable in 2009 for commercially available cars and heavy duty vehicles.

2. Regulated Party Revisions

Under the current LCFS regulation, a regulated party is defined as a person who ultimately ends up with the carbon intensity obligation for the fuels introduced into the market. Upstream fuel producers and distributors are not regulated parties and therefore cannot generate and maintain LCFS credits, and they are not required to report their fuel sales in the LCFS Reporting Tool (LRT). This current provision may obscure the understanding of the complete lifecycle of imported blendstocks and prevent fuel producers from realizing the full market value of their fuels by disallowing LCFS credit generation. Staff's proposal would allow upstream producers and distributers to voluntarily opt into the LCFS as regulated parties, reducing fuel pathway uncertainties and generating additional credits for compliance purposes.

3. Reporting Requirements

The current regulation mandates the use of "an interactive, secured internet web-based form" for submitting annual compliance and quarterly progress reports. Since regulated parties are already using the LRT to report, a "no action" alternative to this proposed

amendment would not have a real impact today; however, designating the LRT as the mandated reporting form minimizes potential confusion regarding future LCFS reporting.

4. Method 2A/2B Certification

In the current regulation, the process through which a regulated party receives approval to use a carbon intensity value determined through the Method 2A/2B process requires an Executive Officer or Board hearing. This regulatory approach requires considerable staff resources better utilized for other high-priority tasks and programs. Staff is proposing to convert this regulatory process to a certification process to save staff resources, yet maintain the technical rigor and public input of the current requirements. To maintain the current regulatory approach would forfeit the opportunity for greater staff efficiency and productivity.

5. Credit Trading

The current regulation is silent on the mechanism through which LCFS credits may be traded in a robust market, which is essential to the success of the LCFS program. The proposed amendments of the LCFS regulation include a new section to provide more detail on how credits and deficits will be tracked, and to specify the process to be used to acquire, bank, transfer and retire credits. In the proposal, staff is also including a provision that allows a regulated party to acquire credits in the first quarter of a year to meet a compliance obligation in the previous year, as long as those credits were generated in a previous year. This proposal further seeks to establish requirements relating to the public release of information concerning the generation of deficits and the generation, use, and transfer of credits. The "no action" alternative to clarifying the credit trading provisions of the LCFS through proposed regulatory amendments would continue to obscure and inhibit the LCFS credit market.

6. Opt-In/Opt-Out Procedure

The current LCFS regulation allows electricity, hydrogen, CNG, LNG, and biogas to opt in to generate credits. It simply refers to a regulated party electing to generate LCFS credits for the exempted fuels but provides no specificity on how to opt-in or opt-out. There are a number of providers of biogas and other exempted, low-CI fuels (those that already meet the 2020 CI standards) who want to opt into the LCFS but are reluctant to do so because the current regulatory language does not specify what requirements are necessary to opt-out in the future. The proposed amendments to the LCFS regulation include additional language that details how a fuel provider could become a regulated party (opt-in) or later remove them from being a regulated party (opt-out). Providing such specificity should encourage providers of exempt, low-CI alternative fuels who have been reluctant or uncertain about bringing credits to the LCFS market to opt-in. Staff deemed such a proposed amendment necessary and preferred over the current regulation.

7. Regulated Party for Electricity

Since the LCFS was approved by the Board in April 2009, the market dynamics for electric vehicles (EV) and EV-fueling infrastructure have evolved. In the current LCFS regulation, regulated party language for electricity is obsolete and incomplete, needs clarification of key terms, and should reflect current business models for the deployment of EVs. Staff proposes regulatory amendments to clarify which parties are eligible to become regulated parties and receive credits for supplying electricity as a transportation fuel. The "no action" alternative to the proposal would simply maintain the ambiguity and obsolescence of the current language.

8. High Carbon-Intensity Crude Oil (HCICO)

The current LCFS regulation recognizes that additional energy is required to produce some crude oils and, taking a full lifecycle assessment (LCA) into consideration, calculates the carbon intensity deficit for such high carbon intensity crude oils (HCICOs) processed in California refineries. The HCICO provision in the current regulation has been of particular concern for the oil industry, which asserts that the current HCICO provisions result in economic harm to California refineries and environmental harm overall due to crude "shuffling." On the other hand, other stakeholders are equally as adamant that the LCFS should continue to prevent increases in lifecycle carbon emissions that could occur if higher intensity crudes are used to replace existing supplies. These parties generally support approaches that discourage or fully mitigate the refining of HCICOs in California and incentivize carbon emission mitigation techniques for oil production.

ARB staff has worked with all interested stakeholders to explore alternatives to the current adopted approach to addressing HCICO in the LCFS. Staff proposes regulatory amendments that would more appropriately account for additional emissions from the production and transportation of HCICO processed in California refineries and therefore meets the intent of the regulation (to ensure that the LCFS benefits are not diminished due to increases in GHG emissions from higher carbon intensity crude supplies). At the same time, the staff's proposal addresses, to the extent possible, the concerns laid out by the various stakeholders.

The "no action" alternative of keeping the current provision has several drawbacks. First, there is the possibility for backsliding in the emissions reduction benefits of the LCFS due to the grandfathering of basket crude sources under current provisions. Second, the current approach limits refiners' flexibility to purchase crude supplies, as they will have significant incentives to avoid using fuels classified as HCICOs. Third, the current approach is overly burdensome to the regulated parties who need to undergo a technical rigorous Method 2B process for establishing CIs for their HCICOs and obtain approval of the Executive Officer.

9. Designating the LRT for LCFS Quarterly and Annual Reporting

As noted, the alternative to the staff's proposal is the existing regulatory language, "[a] regulated party must submit an annual compliance and quarterly progress report by using an interactive, secured internet web-based form." [Emphasis added.] While this performance-based alternative appears flexible, it has a number of issues that are addressed by the proposal. First, the current language provides little guidance to regulated parties as to what exactly would constitute a compliant interactive, secured internet web-based form. As with most industries, the transportation-fuels sector values certainty, and specifying that only the LRT, which is accessible from ARB's website, can be used for reporting ensures such certainty.

For similar reasons, the requirement to use the LRT ensures standardization and consistency, which would help facilitate credit trading between regulated parties (especially when the LRT version 2.0 is developed, which will automate credit trades and credit reporting). On the other hand, having multiple types of software used for reporting purposes would likely entail compatibility and security issues, both with ARB's database and with credit trading partners.

Finally, because all regulated parties are using the LRT and ARB makes it available for free, there are no additional costs involved with using the LRT for regulated parties. By contrast, the purchase of and training with different, commercially-developed reporting software would almost certainly involve additional costs for regulated parties.

For the above reasons, staff determined that prescribing the use of the LRT as the only online mechanism for use by regulated parties is superior to allowing multiple types of software under the current performance standard.

B. Alternatives to Specific Proposed Amendments

1. Regulated Party for Electricity

Staff evaluated the following options for designating the potential electricity regulated parties:

- Designate electric utilities as potential regulated parties for all EV charging.
- Designate EV owners as potential regulated parties for electricity delivered to their vehicles.
- Omit potential default regulated parties.

When evaluating these alternatives, staff kept three goals in mind. The first goal was to keep the proposed language simple to avoid confusion in regulated party designation and maintain relevancy as the EV-charging market evolves in future years. The second goal was to limit the number of regulated parties to increase the possibility that credits will be captured and made available to other regulated parties. The final goal was to maximize the number of credits captured and available for purchase.

The first option – designate electric utilities as potential regulated parties for all EV charging – goes against the goal of maintaining relevancy as the EV charging market evolves in future years. Such designation cannot benefit potential charging equipment installers such as non-utility electric vehicle service providers, business owners, and EV fleet owners; therefore, this approach would discourage their efforts to establish the public and private charging networks which are critical to the future EV market.

The second option – designate individual EV owners as potential regulated parties for electricity delivered to their vehicles – goes against the goal of limiting the number of regulated parties to increase the possibility that credits will be captured and made available to other regulated parties. It is much more difficult to keep track of the credits from individual EV customers than from larger entities, such as the utilities.

The third option – designate a hierarchy of potential regulated parties without designating a default party – goes against the goal of maximizing the number of credits captured and available for purchase. Given the recordkeeping and other requirements in the LCFS regulation, there is a potential for significant amounts of credits to be "orphaned" or otherwise not captured and put into the credit trading market if the designated regulated party, such as a business owner with an onsite charger, fails to opt in. On the other hand, electric utilities have an inherent interest in being able to generate credits for electricity used for transportation. For this reason, among others, staff proposes to designate electric utilities as the default regulated party to ensure that credits are not orphaned.

2. High Carbon-Intensity Crude Oil (HCICO)

This section includes a discussion of the potential approaches to the treatment of HCICOs in the LCFS regulation, staff's recommended approach, and the rationale for not choosing any of the alternatives.

Potential Approaches

Outlined below are several alternative approaches for the treatment of HCICOs in the LCFS regulation that were explored as this proposed rulemaking was developed. These approaches are a combination of those suggested by stakeholders or identified by ARB staff. An alternative that involves clarifying amendments to the current approach is presented first followed by discussion of five alternatives that would involve significantly different conceptual approaches.

1. Current Approach with Amendments

This approach provides amendments to clarify the regulation requirements and provides details for implementation. Amendments are based on the draft Crude Screening proposal that has been used to generate the list of non-HCICO sources attached to Regulatory Advisory 10-04A. The amendments would:

a. Include Step 1 of the screening process to codify the method used to generate the non-HCICO list. The non-HCICO identifiers are:

   - Crude oil produced using recovery techniques other than thermal enhanced oil recovery (steam/hot water injection or in-situ combustion) or crude bitumen; and
   - Crude oil produced from a country with an average flaring rate of less than 10 scm/bbl, as determined using the most recent NOAA/NGDC gas flaring rate data together with annual oil production data.

b. Include a provision that a regulated party will not be retroactively penalized if a crude source that has been added to the non-HCICO list is later removed;
c. Include language which sets an interim default HCICO CI for non-baseline crudes that are not on the non-HCICO list (i.e., "potential HCICO");
d. Briefly outline the process by which a regulated party must get a crude source that "fails" the initial screen either added to the non-HCICO list or determined to be HCICO; and
e. Include a provision that a regulated party can retroactively use the average CI in place of the default HCICO CI if a crude source is later determined to be non-HCICO and put on the non-HCICO list.

2. California Average Approach

In this approach, the base deficit is calculated the same as in the current approach. However, an incremental deficit is applied to all companies if the average crude slate refined in California becomes more carbon intensive over time. This allows for an individual company to shift its crude slate and not be required to mitigate increased emissions as long as the average CI of the California crude slate used by the industry as a whole does not increase over time relative to the baseline year. For the California crude refining industry:

a. Each year of the regulation, a "current" California average CI would be calculated using the crude slate refined in California during a prior year.
b. If the "current" California average CI is greater than the "baseline" California average CI, then a revised incremental CI would be established and all regulated parties that provide California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB) and ULSD would incur greater incremental deficits proportional to the amount of fuel they supplied and the difference between the current CI and the baseline CI.
c. An individual company could earn credits if it purchases crude from sources that have implemented innovative methods, such as carbon capture and sequestration (CCS) to reduce emissions for crude recovery. The number of credits will be tied to the emissions reduction achieved by the innovative method.

A variant of this approach[66] could provide the regulated parties the option to report company-specific CI values through an approach analogous to the Hybrid Approach discussed below instead of being subject to the California average CI value in a given year. Those companies opting to report company-specific CIs would be excluded from the California average CI calculation for that year. Any credit generation opportunities would be premised on a company choosing to report their own company specific baseline.

3. Hybrid California Average/Company Specific Approach

The base deficit for individual companies is calculated the same as in the current approach. However, individual companies only incur an Incremental Deficit if their own crude slate becomes more carbon-intensive over time relative to their crude slate refined in the baseline year. This allows individual companies to shift the crude slate they refine in California and not be required to mitigate increased emissions as long as the average CI of their own crude slate does not increase. There are two ways of implementing this approach: by either regulating the volume or the CI of the HCICOs refined by a company. For each oil company:

a. A "baseline" volume (or CI) of HCICO would be determined using the crude slate refined by that company in California during the baseline year.
b. Each year of the regulation, a "current" volume (or CI) of HCICO would be calculated using the crude slate refined by that company in California during a prior year.
c. If the company's "current" volume (or CI) of HCICO is greater than its "baseline" volume (or CI) of HCICO, then the company will incur an incremental deficit calculated using the difference between the current volume (or CI) and the baseline volume (or CI).
d. An individual company can earn credits if it purchases crude from sources that have implemented innovative methods, such as CCS, to reduce emissions for crude recovery. The number of credits will be tied to the emissions reduction achieved by the innovative method.

4. Company Specific Approach

Each oil company will have distinct Lookup Table values and compliance targets for CARBOB and diesel, which are based on the crude slate refined by that company in California in the baseline year. Individual companies only incur an Incremental Deficit if their own crude slate becomes more carbon-intensive over time. This allows individual companies to shift their crude slates and not be required to mitigate increased emissions as long as the average CI of their own crude slate does not increase. For each oil company:

[66] Simon Mui, NRDC and John Shears, CEERT, September 17, 2011. Comment letter to ARB regarding HCICO Provisions.

a. Each year of the regulation, a "current" CI would be calculated using the crude slate refined by that company in California during a prior year.
b. If the "current" company-specific CI is greater than the "baseline" company-specific CI, then the company will incur an incremental deficit calculated using the difference between its current CI and its baseline CI.
c. An individual company can earn credits if it purchases crude from sources that have implemented innovative methods, such as CCS, to reduce emissions for crude recovery. The number of credits will be tied to the emissions reduction achieved by the innovative method.

5. Worldwide Average Approach

This approach bases the average Lookup Table CI values for CARBOB and diesel and the compliance schedule on worldwide average crude oil production and refining emissions in the baseline year. A Base Deficit is calculated using the difference between the average Lookup Table values for CARBOB (or diesel) and the compliance target for the current year. An Incremental Deficit is applied to all companies if the worldwide average crude production and refining becomes more carbon intensive over time.

All producers of CARBOB and diesel will calculate a Base Deficit using the difference between the average Lookup Table value for CARBOB or diesel and the compliance target in that year. Each year of the regulation, a "current" worldwide average CI would be calculated using the crude slate produced and refined worldwide during the previous year. If the "current" worldwide average CI is greater than the "baseline" worldwide average CI, then all companies will incur an incremental deficit calculated using the difference between the current CI and the baseline CI.

A variant of this approach[67,68] bases the average Lookup Table CI values for CARBOB and diesel and the compliance schedule on California average crude oil production and refining emissions in the baseline year. The other provisions remain the same.

6. California Baseline Approach (Eliminate Consideration of HCICOs in the LCFS)[67,68]

All CARBOB and diesel would use the existing CI values in the Look-Up Table. Regulated parties would only calculate and be subject to the Base Deficit for all CARBOB and diesel regardless of the crude oil used for refining. The Look-Up Table values for CARBOB and diesel would not be updated.

[67] Catherine H. Reheis-Boyd, WSPA, August 8, 2011. Comment letter to ARB regarding LCFS Regulatory Amendments.
[68] Ralph J. Moran, BP America, Inc., July 26, 2011. Comment letter to ARB regarding HCICO Provisions.

Evaluation of Potential Approaches

ARB staff evaluated the potential approaches for regulatory amendments. The guiding principles that formed the basis for our assessment of the alternatives are outlined below. These principles we chosen to assess if the core objectives that lead to the creation of the existing HCICO provision would be preserved.

1. Key Guiding Principles

   a. *Accurate accounting for emissions from production and transport of crude oil:* Since the LCFS regulation takes into account full lifecycle GHG emissions for fuel pathways, including all stages of feedstock production and distribution, the upstream emissions from energy-intensive crude recovery methods need to be accounted for to provide consistent treatment versus other regulated fuels. Establishing an accurate performance-based accounting system will ensure that additional emissions in the carbon intensity of gasoline and diesel fuels from the baseline are captured.

   b. *Discouraging potential increases in emissions and ensure that increases that do occur are mitigated:* An incremental deficit for backsliding with respect to the baseline will ensure that the GHG emission contributions from petroleum fuels do not increase over time without being mitigated.

   c. *Promoting innovation for emission reduction activities:* Providing credits for purchase of crude from production facilities that have implemented innovative methods, such as CCS, to reduce emissions for crude recovery is consistent with the goal of promoting innovation, at the same time accurately accounting for the reduction in upstream emissions. Apart from providing a market signal for cleaner production, credits generated through such activities can provide extra flexibility for meeting LCFS GHG reduction targets.

   d. *Avoiding or limiting incentives to use crude shuffling to generate credits, avoid deficits, or transfer GHG emissions to other jurisdictions to avoid regulation under the LCFS:* Additionally, a program design that can be exported to other jurisdictions will result in minimizing such GHG emission transfers if other jurisdictions adopt consistent programs.

In addition to meeting the above-mentioned key guiding principles to achieve the intended GHG benefits, amendments to the HCICO provision should be designed so as to avoid incremental adverse environmental and economic impacts. Additionally, considerations for a successful implementation, such as simplicity of methodology, availability of data, and administrative burden, as well as other issues such as fuel supply impacts, etc., should reflect on the decision-making process.

2. Qualitative Evaluation of the Potential Approaches

A qualitative evaluation of each approach with respect to the guiding principles is presented below. It should be noted that the current approach in the regulation, as well as some of the alternatives (Worldwide Average Approach and California Baseline Approach) fall short in many areas when assessed under these principles as explained in the following discussion.

a. *Current Approach with Amendments (Option 1):* The current approach accounts for emissions from crude oil production and transport in the "2006 basket" but does not account for emissions changes over time for crudes that are part of that basket. For example, if emissions associated with the production of California crudes using thermally enhanced oil recovery techniques increases — possible if crude prices remain high and the extraction from the fields become more energy intensive but remains economically viable — this approach would not mitigate those additional GHG emissions. Moreover, a non-baseline crude with a CI of 15 g/MJ or less is counted the same as a crude with a CI of 3 g/MJ. These shortcomings in emissions accounting could result in increased upstream emissions from the use of such crudes. This approach provides an incentive for producers of HCICO to reduce emissions to less than 15 g/MJ. However, the incentive is to avoid the mitigation responsibility that is triggered if HCICO are used; it does not provide a credit that might incent even greater reductions. The current approach limits refiners' flexibility to purchase crude supplies, as they will have significant incentives to avoid using fuels classified as HCICOs. The proposed amendments would assist the industry in identifying crudes that are not HCICOs, increasing their flexibility to use a greater proportion of current crude supplies.

b. *California Average Approach (Option 2):* This approach is the preferred alternative for amendments. It explicitly accounts for and tracks the overall average CI for the transport and production of crudes used by California refineries. The method provides limited incentive for oil companies that produce their own crude oil to reduce emissions (e.g., through flaring reduction or other methods) and promotes innovation. There is likely greater flexibility to purchase worldwide crude supplies than current approach as oil companies have the discretion to shift among crude sources without incurring an incremental deficit, as long as the overall California average CI does not increase. The methodology is simple, providing for a streamlined implementation.

c. *Hybrid California Average/Company Specific Approach (Option 3):* This approach explicitly accounts for all crude used by California refineries and tracks changes over time. It provides greater incentive for oil companies that produce their own crude oil to reduce emissions (e.g., through flaring

reduction or other methods) as this will be reflected in their annual CI calculation. There is likely greater flexibility to purchase worldwide crude supplies for some companies than the current approach as oil companies have the discretion to shift among crude sources without incurring an incremental deficit, as long as the overall average CI does not increase. This approach, while providing similar GHG benefits as the California Average Approach, makes implementation more complicated due to the need for company-specific CI values each year. Staff does not have sufficient company-specific data to fully assess the impacts of this approach on individual oil companies.

d. *Company Specific Approach (Option 4):* This approach explicitly accounts for all crude used by California refineries. However, this approach disadvantages those companies that currently refine lower CI crude oil, as their baseline CI value and ability to shift crude supplies would be more limited than those of companies that currently process heavy crudes derived from higher CI production methods. It provides greater incentive for oil companies that produce their own crude oil to reduce emissions (e.g., through flaring reduction or other methods), as this will be reflected in their annual CI calculation. There will be likely greater flexibility to purchase worldwide crude supplies for some oil companies than the current approach, as some companies have the discretion to shift among crude sources without incurring an incremental deficit as long as their overall average CI does not increase. This approach, while providing similar GHG benefits as the California Average Approach, leads to potential uncertainly and confusion in the market due to the need for company-specific compliance schedules. A fuel with the same CI will incur different deficits for different regulated parties under this method. Again, staff does not have sufficient company-specific data to fully assess the impacts of this approach on individual oil companies.

e. *Worldwide Average Approach (Option 5):* This approach has significant drawbacks. It does not explicitly track or account for emissions from crudes used by California refineries. It provides no incentive for oil companies that produce their own oil to reduce emissions (e.g., by reducing flaring) since these reductions will have negligible effect on the worldwide average. There is complete flexibility to purchase worldwide crude supplies, as crudes used by California refineries would have little, if any impacts on the world average. This approach could result in significantly greater amounts of HCICO being used at California refineries because there is no effective incentive to avoid their use. Because it is likely that criteria pollutant emissions increase with greater use of HCICOs — which usually are heavier crudes that typically take additional processing to make clean fuels — this approach could have adverse environmental impacts for the communities located in the vicinity of the refineries.

f. *California Baseline Approach (Option 6):* This approach would eliminate the current HCICO provision, and not replace it with a new approach. It has significant drawbacks. It does not account for, track or mitigate increases in upstream emissions from crudes used by California refineries. This is inconsistent with the LCA basis of the LCFS and undermines the program's goal to achieve a ten percent emission reduction from the 2010 baseline for transportation. It provides no incentive for oil companies that produce their own crude oil to reduce emissions (e.g., by reducing flaring) since these reductions will have no benefit relative to their compliance with the LCFS. There is complete flexibility to purchase worldwide crude supplies, as crudes used by California refineries are not tracked relative to their CIs, and no mitigation would be required if higher crude CIs were to be used. As with the Worldwide Average Approach, this approach could result in significantly greater amounts of harder to refine HCICO being used at California refineries because there is no incentive to avoid their use. Consequently, this approach could have adverse environmental impacts for the communities located in the vicinity of the refineries.

As a result of the above analysis, staff proposes for Board consideration the California Average Approach for the treatment of crude oil under the LCFS. None of the other alternatives considered would be more effective in carrying out the purpose of this high carbon intensity crude oil provision, or would be as effective as, and less burdensome than, the proposed approach.

VIII. SUMMARY AND RATIONALE FOR PROPOSED REGULATIONS

In this chapter, we provide a summary and rationale for each of the affected sections in the regulation:

Section 95480.1. Applicability

Summary of Section 95480.1:

Section 95480.1 specifies which transportation fuels are subject to the LCFS regulation. It also specifies which alternative fuels may generate LCFS credits by electing to opt into the LCFS, and the alternative fuels and specific applications that are exempt from the regulation.

Rationale:

This section is necessary to specifically identify which fuels are subject to the regulation, which fuels are eligible to generate credits by fuel providers opting into the regulation, and which fuels and applications are exempt.

Summary of Subsection 95480.1(b):

This provision specifies the alternative fuels, or "opt-in fuels," which meet the 2020 carbon intensity standards. The proposed amendment clarifies that an opt-in fuel provider may generate credits only by electing to opt into the LCFS as a regulated party, pursuant to the opt-in and opt-out provisions.

Rationale:

This provision is necessary to identify which fuels are subject to the LCFS regulation and which fuels are exempt. The amendment to this provision is needed to clarify when an alternative fuel provider can generate credits under the opt-in provisions.

Section 95480.2. Persons Eligible for Opting Into the LCFS Program

Purpose of Section 95480.2:

This provision specifies the criteria to be eligible for opting into the LCFS. Staff proposes to add this provision as a new section to the regulation.

Rationale:

This provision is necessary to provide the criteria a person must meet to be eligible for opting into the program. In addition, staff is proposing amendments that would permit out-of-state producers and intermediate entities to be regulated parties. Therefore, these entities are included in this section.

Section 95480.3. Procedure for Opting Into and Opting Out of the LCFS Program

Summary of Section 95480.3:

This section specifies the procedures for opting in and out of the LCFS program. Staff proposes to add opt-in and opt-out procedures, reporting requirements, and selection of CI values.

Rationale:

This section is necessary to specify the procedure and information submittals needed for a fuel provider to opt in or opt out as a regulated party.

Section 95480.4. Multiple Parties Claiming to Be the Regulated Party for the Same Volume of Fuel

Summary of Section 95480.4:

This section establishes the actions taken when more than one party has inadvertently claimed to be the regulated party for the same volume of fuel. Staff proposes to add this as a new section in the regulation.

Rationale:

This section specifies the actions to be taken when more than one party has inadvertently claimed to be the regulated party for the same volume of fuel, including the order credits will be released.

Section 95480.5. Jurisdiction

Summary of Section 95480.5:

This section specifies the actions which establish a person's consent to be subject to the jurisdiction of the State of California, including the administrative authority of ARB and the jurisdiction of the Superior Courts of the State of California.

Rationale:

This section is necessary to implement the enhanced regulated party revisions that would permit out-of-state producers and intermediate entities to voluntarily elect to become regulated parties and, therefore, become subject to California jurisdiction.

Section 95481. Definitions and Acronyms

Summary of Section 95481:

This section provides the specific definitions and acronyms that apply to the regulation. The proposed amendments include revised and new definitions and acronyms.

Rationale:

This section is necessary to specify the definitions and acronyms used in the regulation.

Section 95482. Average Carbon Intensity Requirements for Gasoline and Diesel

Summary of Section 95482:

This section establishes the LCFS compliance schedule from 2011 through 2020 based upon the gasoline and diesel baselines. The proposed amendments revise the compliance schedules for the years 2013 through 2020.

Rationale:

Section 95482 is needed to provide regulated parties with the compliance schedule in which CI requirements are identified. This section is necessary to reflect the proposed revisions to the baseline gasoline and diesel standards, which were first developed in 2006. The intent of the program was to have a 2010 baseline standard and the crude slates have since shifted to require a change in the compliance schedule.

Section 95484. Requirements for Regulated Parties

Summary of Section 95484:

This section establishes the following: 1) criteria by which a regulated party is determined, 2) calculation of credit balance and annual compliance obligation, 3) reporting requirements, 4) recordkeeping and auditing requirements, and 5) violations and penalties. Staff proposes to relocate annual compliance and credit calculation information to the proposed credit trading section 95488.

Rationale:

Section 95484 is needed to provide regulated parties with the requirements and inform them of the penalties for non-compliance. Staff proposes to revise various subsections to implement proposed amendments.

Summary of Section 95484(a):

This subsection establishes the regulated parties for each type of transportation fuel. The proposed amendment revises regulated parties for electricity under section 95484(a)(6).

Rationale:

This section is necessary to provide a clear distinction of which entities can claim title on the credits. This language therefore provides a hierarchy for who may claim the credits and what is required for documentation purposes. The amendment to subsection 95484(a)(6) is needed to identity whom is eligible to claim electricity credits as the regulated party.

Summary of Section 95484(b):

Subsection 95484(b), which is 95484(c) in the existing regulation, provides the reporting requirements for regulated parties. The proposed amendments include mandatory use of the LRT, eliminating the reporting of fuel volume in terms of "gasoline gallon equivalent" (gge), and removal of reporting significant figures to simply report the nearest whole unit.

Rationale:

This subsection is needed to provide regulated parties with the reporting requirements that must be met under LCFS. The proposed amendments to this subsection is necessary to ensure standardization and consistency, which would help facilitate credit trading between regulated parties, and improve how regulated parties are recording their transactions.

Section 95485. LCFS Credits and Deficits

Summary of Section 95485:

This section provides the following information: 1) calculation of credits and deficits, 2) credit generation frequency, 3) credit acquisition, banking, borrowing, and trading, and 4) nature of credits.

Rationale:

Section 95485 is necessary to provide regulated parties with the information needed to calculate the amount of credits and deficits generated, when a regulated party may generate credits, and what a regulated party may or may not do to retain, acquire, transfer, and export credits for compliance.

Summary of Section 95485(a):

This subsection provides regulated parties with the methods that must be used to calculate credits and deficits generated. Staff proposes three changes to the EERs contained in Table 5.

Rationale:

This subsection is needed to provide the calculation methods used to calculated credits and deficits generated. The proposed amendment to the EERs is needed to reflect the use of engine efficiency and fuel efficiency data that was not available during the original rulemaking in 2009.

Section 95486. Determination of Carbon Intensity Values

Summary of Section 95486:

This section provides how CI values for each fuel are determined.

Rationale:

Section 95486 is necessary to provide regulated parties with the information needed to determine the CI values of their fuel.

Summary of Section 95486(a):

Subsection 95486(a) provides the ARB Lookup Table and specifies how a regulated party may select a method and determine CI values. Staff proposes to amend the regulation by adding new subsections 95486(a)(2), (3), and (4).

Subsections 95486(a)(2) and (3) clarifies the procedure by which carbon intensities are determined using the Method 1 process. These new provisions specify that Method 1 can only be used for fuels that are produced using a well-to-wheels production pathway that is substantially similar to the corresponding well-to-wheels pathway described in the pathway document on which an LCFS Lookup Table pathway is based.

Subsection 95486(4) establishes default carbon intensity values.

Rationale:

Subsection 95486(a) is necessary to provide regulated parties the information needed to determine the CI values for each of their fuels or blendstocks. The proposed amendments are needed to clarify the procedure carbon intensities are determined using the Method 1 process, specify that Method 1 can only be used for fuels that are produced using a well-to-wheels production pathway that is substantially similar to the

corresponding well-to-wheels pathway from which an LCFS Lookup Table pathway is based, and establish default carbon intensity values.

Summary of Section 95486(b):

Section 95486(b) provides regulated parties the CI lookup table that they may use to select their fuel pathway. The proposed amendment revises how credits are calculated for the incremental credits and deficits associated with high carbon crude oil sources.

Rationale:

This subsection is needed to give regulated parties a location that designates the CI values associated with each fuel pathway. The proposed amendment revises how regulated parties producing gasoline and diesel will handle various crude slates, and the current HCICO provisions have changed from a "bucket method" of crudes to a flexible California average.

Summary of Section 95486(f):

Section 95486(f) provides the requirements for a Method 2A/2B fuel pathway to be processed and approved. The proposed amendment revises how the carbon intensity pathways are evaluated, shifting from a formal rulemaking for each pathway to a certification process.

Rationale:

This subsection is needed to provide the legal support for each pathway that is available for regulated parties to use. The proposed amendment will streamline the process for CI pathways to be incorporated into the regulation by converting the process from an individual rulemaking for each pathway proposed to a certification process. The pathways will then be included into the regulation when the language is revised at a future date.

Section 95488. Banking, Trading, and Purchase of Credits

Summary of Section 95488:

This section provides the following information: 1) calculation of credit balance and annual compliance, 2) generation and acquisition of transferable credits, 3) credit transfers, and 4) mandatory retirement of credits, and 5) public disclosure of credit transfer activity.

Rationale:

Section 95488 is needed as the current regulatory text allows for the transfers of credits, but is silent in the procedure. The proposed language will provide regulated parties with

the calculation on how credits are to be banked, the requirements and information that ARB will need to process a credit transfer, the information ARB will need to retire credits at the end of the annual compliance period, and the information that will be disclosed to the public relaying market activity and overall health of the LCFS program.

Summary of Section 95488(a):

Section 95488(a) was relocated from section 95484(b) in the existing regulation. The proposed amendments will provide a clear separation of credit generation and tracking from deficit accounting and provide a revised calculation for annual compliance.

Rationale:

This section is needed to provide regulated parties the definitions and calculations that will be used to determine compliance. The proposed amendments will clearly delineate between credit and deficit generation during the annual compliance period and remove the concept of "net" credit balance upon submission of a quarterly report.

Summary of Section 95488(b):

Section 95488(b) provides a regulated party the procedure on how a credit is generated and validated before it becomes available for trade. It also defines the time that a credit can be purchased after the annual compliance period has ended prior to the submittal of the annual compliance report.

Rationale:

This subsection is needed as the existing regulation is silent on when a credit is available for transfer and to clarify when a regulated party may purchase credits to meet their annual compliance obligation.

Summary of Section 95488(c)

Section 95488(c) provides the requirements that are required by ARB before a credit can be transferred and the associated documentation to confirm the transfer has occurred.

Rationale:

This subsection is needed for ARB to process and confirm trades between regulated parties.

Summary of Section 95488(d):

Section 95488(d) provides a procedure to regulated parties on how their credits at the end of each annual compliance period may be retired.

Rationale:

This subsection is needed if the use of unique IDs is implemented in the reporting tool. Regulated parties will be able to select the credits they wish to retire or allow the default order to be used offset their deficits.

Summary of Section 95488(e):

Section 95488(e) provides a description on the information the public will receive on a monthly basis. The information will include credit and deficit generation by the LCFS program as well as credit market activity.

Rationale:

This subsection is needed as the regulation requires a certain level of transparency. The public and market participants will therefore receive routine, periodic releases of information on credit and deficit generation as well as trading activity to allow the public an overview of LCFS progress.

IX. REFERENCES AND FOOTNOTES

Note: The references are listed according to the footnote they correspond to in the ISOR. Not all footnotes are references and are only listed here to maintain the numbering system used for the ISOR footnotes. The footnotes that are not references are listed as "Explanatory Footnote."

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Chapter 6

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Chapter 8

No References

Chapter 9

No References

APPENDIX A

PROPOSED REGULATION ORDER

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PROPOSED REGULATION ORDER

Amend sections 95480.1, 95481, 95484, 95485, 95486, 95488, and 95490, title 17, California Code of Regulations (CCR), to read as follows:

Adopt new sections 95480.2, 95480.3, 95480.4, and 95480.5, title 17, CCR, to read as follows:

[**Note:** The original regulatory text is show in plain type. The proposed amendments are shown in underline to indicate addition and strikeout to show deletions. All other portions remain unchanged and are indicated by the symbol "* * * * *" for reference]

Subchapter 10. Climate Change
Article 4. Regulations to Achieve Greenhouse Gas Emission Reductions

Subarticle 7. Low Carbon Fuel Standard

Section 95480. Purpose.

* * * * *

Section 95480.1. Applicability.

(a) *Applicability of the Low Carbon Fuel Standard.*

Except as provided in this section, the California Low Carbon Fuel Standard regulation, title 17, California Code of Regulations (CCR), sections 95480 through 95490 (collectively referred to as the "LCFS") applies to any transportation fuel, as defined in section 95481, that is sold, supplied, or offered for sale in California, and to any person who, as a regulated party defined in section 95481 and specified in section 95484(a), is responsible for a transportation fuel in a calendar year. The types of transportation fuels to which the LCFS applies include:

(1) California reformulated gasoline ("gasoline" or "CaRFG");
(2) California diesel fuel ("diesel fuel" or "ULSD");
(3) Fossil compressed natural gas ("Fossil CNG") or fossil liquefied natural gas ("Fossil LNG");
(4) Biogas CNG or biogas LNG;
(5) Electricity;
(6) Compressed or liquefied hydrogen ("hydrogen");
(7) A fuel blend containing hydrogen ("hydrogen blend");
(8) A fuel blend containing greater than 10 percent ethanol by volume;
(9) A fuel blend containing biomass-based diesel;
(10) Denatured fuel ethanol ("E100");

(11) Neat biomass-based diesel ("B100"); and
(12) Any other liquid or non-liquid fuel.

The provisions and requirements in section 95484(bc), (cd) and (be) apply starting January 1, 2010. All other provisions and requirements of the LCFS regulation apply starting January 1, 2011.

(b) *Credit Generation Opt-In Provision for Specific Alternative Fuels.* Each of the following alternative fuels ("opt-in fuels") is presumed to have a full fuel-cycle, carbon intensity that meets the compliance schedules set forth in section 95482(b) and (c) through December 31, 2020. A fuel provider for an alternative fuel listed below may generate LCFS credits for that fuel only by electing to opt into the LCFS as a regulated party pursuant to section 95480.3 and meeting the requirements of this regulation: ~~With regard to an alternative fuel listed below, the regulated party for the fuel must meet the requirements of the LCFS regulation only if the regulated party elects to generate LCFS credits:~~

(1) Electricity;
(2) Hydrogen;
(3) A hydrogen blend;
(4) Fossil CNG derived from North American sources;
(5) Biogas CNG; and
(6) Biogas LNG.

(c) *Exemption for Specific Alternative Fuels*. The LCFS regulation does not apply to an alternative fuel that meets the criteria in either (c)(1) or (2) below:

(1) An alternative fuel that:

(A) is not a biomass-based fuel; and
(B) is supplied in California by all providers of that particular fuel for transportation use at an aggregated volume of less than 420 million MJ (3.6 million gasoline gallon equivalent) per year;

A regulated party that believes it is subject to this exemption has the sole burden of proving to the Executive Officer's satisfaction that the exemption applies to the regulated party.

(2) Liquefied petroleum gas (LPG or "propane").

(d) *Exemption for Specific Applications.* The LCFS regulation does not apply to any transportation fuel used in the following applications:

(1) Aircraft;
(2) Racing vehicles, as defined in H&S section 39048;
(3) Military tactical vehicles and tactical support equipment, as defined in

title 13, CCR, section 1905(a) and title 17, CCR, section 93116.2(a)(36), respectively;

(4) Locomotives not subject to the requirements specified in title 17, CCR, section 93117; and

(5) Ocean-going vessels, as defined in title 17, CCR, section 93118.5(d). This exemption does not apply to recreational and commercial harbor craft, as defined in title 17, CCR, section 93118.5(d).

(e) Nothing in this LCFS regulation (title 17, CCR, § 95480 et seq.) may be construed to amend, repeal, modify, or change in any way the California reformulated gasoline regulations (CaRFG, title 13, CCR, § 2260 et seq.), the California diesel fuel regulations (title 13, CCR, §§ 2281-2285 and title 17, CCR, § 93114), or any other applicable State or federal requirements. A person, including but not limited to the regulated party as that term is defined in the LCFS regulation, who is subject to the LCFS regulation or other State and federal regulations shall be solely responsible for ensuring compliance with all applicable LCFS requirements and other State and federal requirements, including but not limited to the CaRFG requirements and obtaining any necessary approvals, exemptions, or orders from either the State or federal government.

(f) *Severability*. Each part of this subarticle shall be deemed severable, and in the event that any part of this subarticle is held to be invalid, the remainder of this subarticle shall continue in full force and effect.

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference ~~cited~~: Sections 38501, 38510, 38560, 38560.5, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

Section 95480.2. Persons Eligible for Opting Into the LCFS Program.

Only a person who meets one or more of the following criteria can elect to opt into the LCFS program, thereby becoming the regulated party in the LCFS program for a specified volume of fuel ("opt in" and "opt into" include the past, present, and future tenses):

(a) A person who provides a fuel specified in section 95480.1(b) and meets the requirements of section 95484(a)(5), (a)(6), or (a)(7), whichever applies to that fuel;

(b) An out-of-state producer of oxygenate for blending with CARBOB or gasoline, or biomass-based diesel for blending with CARB diesel, who is not otherwise already subject to the LCFS regulation as an importer. An opt-in regulated party

under this subsection may retain the compliance obligation, for a specific volume of fuel or blendstock, only if that person sells the fuel to another regulated party.

(c) A person who is in the distribution/marketing chain of imported fuel and is positioned on that chain between the producer under (b) and the importer ("intermediate entity"). The intermediate entity is subject to the following requirements:

(1) The intermediate entity must provide written documentation demonstrating all the following requirements to the Executive Officer's written satisfaction before opting into the LCFS:

(A) The person received ownership of the fuel for which the person is claiming to generate LCFS credits;

(B) Either:

1. The person received the LCFS compliance obligation from a producer that opted in under section 95480.2(b); or
2. The producer did not opt in under section 95480.2(b).

(C) The person actually delivered the fuel or caused the fuel to be delivered to California;

(D) The fuel delivered under (C) is shown to have been sold for use in California or was otherwise actually used in California; and

(E) The person is not otherwise already subject to the LCFS regulation as a regulated party.

(2) The demonstrations in (1)(A) through (E) above must be made for the specific volume of fuel upon which the person first elects to opt into the LCFS. For subsequent volumes of fuel for which the person is claiming to be the regulated party pursuant to this subsection (c), the person must retain documentation to support the demonstrations required in (1)(A) through (E) and must submit such documentation to the Executive Officer within 30 [working/business?] days upon request.

(d) The gas company, utility, or energy service provider that supplies natural gas ("natural gas supplier") to a person that falls within the provisions of section 95484(a)(5)(A)1.a or (5)(A)2. The natural gas supplier must provide written documentation to the Executive Officer demonstrating all the following before opting in to the LCFS:

(1) The person who falls within the provisions of section 95484(a)(5)(A)1.a. or (5)(A)2. understands that it has the ability to opt into the LCFS program as a regulated party under section 95480.2(a);

(2) The person in (1) has affirmatively elected not to become a regulated party in the LCFS program;

(3) The person in (1) understands and agrees that the election in (2) is irrevocable unless otherwise specified in a written contract between that person and the natural gas supplier; and

(4) As a consequence of the election in (2), the person in (1) understands and agrees that all LCFS credits generated from the sale of CNG dispensed through that person's natural gas vehicle fueling equipment shall belong to the natural gas supplier, unless otherwise specified in a written contract between the person and the natural gas supplier.

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference ~~cited~~: Sections 38501, 38510, 38560, 38560.5, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

Section 95480.3. Procedure for Opting Into and Opting Out of the LCFS Program.

Opting into and opting out of the LCFS program is available only to a person that is eligible under section 95480.2. The procedure for opting into and opting out of the LCFS for such a person is set forth as follows.

(a) *Opting In.*

(1) Opting into the LCFS program becomes effective when the fuel provider registers, pursuant to this section, as a regulated party in the LCFS Reporting Tool (LRT), which is available at: https://ssl.arb.ca.gov/lcfsrt/Login.aspx.

(2) Registration under subsection (a)(1) above as a regulated party means that the fuel provider understands the requirements of the LCFS regulation and has agreed to be subject to all the requirements and provisions of the LCFS regulation as a regulated party, pursuant to section 95480.5, in exchange for gaining the ability to generate and trade LCFS credits.

(b) *Selection of Carbon Intensity Value.*

As part of its registration, the regulated party of a fuel listed in subsection 95480.1(b)(1)(A)-(F) must elect for each of its opt-in fuels a carbon intensity (CI) value using one of the following methods:

(1) Method 1, pursuant to section 95486(a) and (b), if an applicable fuel pathway and CI value exist in the Lookup Table in section 95486(b) at the time of selection;

(2) Method 2A or 2B, pursuant to section 95486(c)-(f); or

(3) In lieu of (1) or (2) above, the regulated party may choose the CI value of 87.65 g CO2e/MJ when the opt-in fuel is used as a gasoline substitute or 86.72 g CO2e/MJ when the fuel is used as a diesel substitute. This is because the opt-in fuels listed in section 95480.1(b) have been deemed to have a full fuel lifecycle CI that meets the regulation's 2020 standards, as specified in section 95482(b) and (c). A regulated party choosing a CI value pursuant to this paragraph (3) must use an energy economy ratio (EER) in its LRT quarterly and annual reports that is set to a value of 1.0. Selection of a CI value pursuant to this paragraph does not preclude an opted-in regulated party from pursuing approval of a Method 2A or 2B application at the same or later time, nor does it preclude the regulated party from using Method 1 when an applicable fuel pathway and CI value are incorporated into the Lookup Table or are posted by the Executive Officer at: http://www.arb.ca.gov/fuels/lcfs/2a2b/2a-2b-apps.htm.

(c) *Opting Out.*

A fuel provider, who elected to become a regulated party by opting into the LCFS pursuant to subsection (a) above, may decide later to return to exempt status under section 95480.1(b)(1) ("opt out"). For an election to opt out of the LCFS regulation to be effective, the regulated party must complete all actions specified below, with the completed actions documented in writing and submitted to ARB as specified below:

(1) *90 Days before Opt-Out Date.*

(A) Provide ARB with a 90-day written notice of intent to opt out and the anticipated opt-out effective date;

(B) Using the LRT, provide ARB with any outstanding quarterly progress report (for the quarter in which the opt-out will occur) and annual compliance report (covering January 1st of the year to the date of the opt-out notice); and

(C) Identify in the 90-day notice any actions to be taken to eliminate any remaining deficits by the opt-out date.

(2) *Effective Opt-Out Date.*

Eliminate all remaining deficits and provide verification by email or regular mail that opt out occurred and all deficits have been eliminated. The Executive Office shall confirm receipt of the notification within 3 business days. Any credits that remain in the regulated party's account at the time of the opt out shall be forfeited to the State.

(3) *30 Days after Opt-Out Date.*

(A) Identify in writing the amount and transferee (if applicable) of any LCFS credits generated between the 30-day notice and the date of opt-out;

(B) Verify in writing that the former regulated party's deficit balance is zero as of the date of opt out. The verification must be signed by an authorized company representative, who must attest that the company will not sell, trade, or otherwise transact any LCFS credits after the opt-out date;

(C) Update the quarterly and annual compliance reports submitted with the 30-day notice, as needed, to reflect any changes that occurred during the period between the notice and the actual opt-out date.

(4) *December 31st of the Year of Opt Out and the Following Year.*

Confirm in writing that the former regulated party remains opted out of the LCFS program and has not sold, traded, or otherwise transacted any LCFS credits since opt-out date.

(5) *Written Submittals.*

All notifications, identifications, and other documentation specified in this section 95480.3 must be submitted to:

Chief, Alternative Fuels Branch
California Air Resources Board
1001 I Street, P.O. Box 2815
Sacramento, CA 95812-2815; or

The LRT Administrator: lrtadmin@arb.ca.gov.

(d) *Recordkeeping Requirements.*

The provisions and requirements in section 95484(c)(1) shall apply to a regulated party that has opted out of the LCFS regulation.

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference ~~cited~~: Sections 38501, 38510, 38560, 38560.5, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

Section 95480.4. Multiple Parties Claiming to Be the Regulated Party for the Same Volume of Fuel.

There can only be one regulated party for a specific volume of fuel at any given time. In the event that more than one person has registered with ARB as the regulated party for the same volume of fuel, the following provisions shall apply:

(a) All LCFS credits generated from the volume of fuel at issue shall be made inaccessible to the regulated parties and placed by the Executive Officer into a holding account, including any such credits that have already been transferred to another person prior to being notified by the Executive Officer that the holding action has taken place;

(b) The regulated parties for a credit placed in a holding account pursuant to (a) shall not sell, offer for sale, trade, or otherwise transfer such a credit to another person until the holding action has been lifted by the Executive Officer;

(c) The Executive Officer shall lift the hold on a LCFS credit within 30 working days after initially placing the hold, and shall release the credit to a regulated party based on the following procedure in descending order of priority:

(1) The producer that has opted in under section 95480.2(b) and retained the compliance obligation; if this provision does not apply, then

(2) The intermediate entity (downstream of the producer) that has opted in under section 95480.2(c) and retained the compliance obligation; if this provision does not apply, then

(3) The importer, if neither (1) nor (2) applies, which has retained the compliance obligation pursuant to section 95484; if this provision does not apply, then

(4) The regulated party that received compliance obligation from the importer in (3) or a California producer pursuant to section 95484.

Paragraphs (c)(1), (2), (3), and (4) above notwithstanding, the parties above may, by the time ownership to the fuel or blendstock is transferred, specify by enforceable written contract pursuant to section 95484 the person to which the credits ultimately have been transferred and obligated.

(d) It is a violation of this regulation for a person to register as the regulated party for a specific volume of fuel if doing so would be unreasonable under the circumstances.

(e) This section does not apply to regulated parties for electricity, which are subject to the provisions of section 95484(a)(6).

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference ~~cited~~: Sections 38501, 38510, 38560, 38560.5, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

Section 95480.5. Jurisdiction.

(a) Any of the following actions shall conclusively establish a person's consent to be subject to the jurisdiction of the State of California, including the administrative authority of ARB and the jurisdiction of the Superior Courts of the State of California:

(1) Registration with ARB as a regulated party pursuant to the opt-in provisions in section 95480.3(a); or

(2) Receipt of compensation of any kind, including sales proceeds and commissions, from any transfers of a LCFS credit made pursuant to section 95488.

(b) Any person who, pursuant to section 95484(a)(1) through (4), inclusive, is the initial regulated party or a person to whom the compliance obligation has been transferred directly or indirectly from the initial regulated party, is subject to the jurisdiction of the State of California, including the administrative authority of ARB and the jurisdiction of the Superior Courts of the State of California, irrespective of whether the person has registered as a regulated party in the LRT.

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference ~~cited~~: Sections 38501, 38510, 38560, 38560.5, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

Section 95481. Definitions and Acronyms.

(a) *Definitions.* For the purposes of sections 95480 through 95489, the definitions in Health and Safety Code sections 39010 through 39060 shall apply, except as otherwise specified in this section, section 95480.1, sections 95480.2 through 95480.5, or sections 95482 through 95489:

(1) "Aggregation Indicator" means an identifier in the LCFS Reporting Tool (LRT) for reported transactions that are a result of an aggregation or summing of more than one transaction. An entry of 'True' indicates that multiple transactions have been aggregated and are reported with a single Transaction Number. An entry of 'False' means that the transaction record results from one physical transaction reported as a single Transaction Number.

(~~1~~2) "Alternative fuel" means any transportation fuel that is not CaRFG or a diesel fuel, including but not limited to, those fuels specified in section 95480.1(a)(3) through (a)(12).

(3) "Application" means the type of vehicle where the fuel is consumed in terms of LDV/MDV for light duty vehicle / medium duty vehicle or HDV for heavy-duty vehicle.

(~~2~~4) "B100" means biodiesel meeting ASTM D6751-08 (October 1, 2008) (*Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels*), which is incorporated herein by reference.

(~~3~~5) "Biodiesel" means a diesel fuel substitute produced from nonpetroleum renewable resources that meet the registration requirements for fuels and fuel additives established by the Environmental Protection Agency under section 211 of the Clean Air Act. It includes biodiesel meeting all the following:

(A) Registered as a motor vehicle fuel or fuel additive under 40 CFR part 79;
(B) A mono-alkyl ester;
(C) Meets ASTM D 6751-08 (October 1, 2008), *Standard Specification for Biodiesel Fuel Blendstock (B100) for Middle Distillate Fuels,* which is incorporated herein by reference;
(D) Intended for use in engines that are designed to run on conventional diesel fuel; and
(E) Derived from nonpetroleum renewable resources.

(~~4~~6) "Biodiesel Blend" means a blend of biodiesel and diesel fuel containing 6% (B6) to 20% (B20) biodiesel and meeting ASTM D7467-08

(October 1, 2008), *Specification for Diesel Fuel Oil, Biodiesel Blend (B6 to 20)*, which is incorporated herein by reference.

(7) "Biofuel Production Facility" means an identifier in the LRT that refers to the production facility in which the biofuel was produced.

(~~5~~8) "Biogas (also called biomethane) means natural gas that ~~meets the requirements of 13 CCR §2292.5 and~~ is produced from the breakdown of organic material in the absence of oxygen. Biogas is produced in processes including, but not limited to, anaerobic digestion, anaerobic decomposition, and thermo-chemical decomposition. These processes are applied to biodegradable biomass materials, such as manure, sewage, municipal solid waste, green waste, and waste from energy crops, to produce landfill gas, digester gas, and other forms of biogas.

(~~6~~9) "Biogas CNG" means CNG consisting solely of compressed biogas.

(~~7~~10) "Biogas LNG" means LNG consisting solely of liquefied biogas.

(~~8~~11) "Biomass" has the same meaning as defined in "Renewable Energy Program: Overall Program Guidebook," 2nd Ed., California Energy Commission, Report No. CEC-300-2007-003-ED2-CMF, January 2008, which is incorporated herein by reference.

(~~9~~12) "Biomass-based diesel" means a biodiesel (mono-alkyl ester) or a renewable diesel that complies with ASTM D975-08ae1, (edited December 2008), *Specification for Diesel Fuel Oils*, which is incorporated herein by reference. This includes a renewable fuel derived from co-processing biomass with a petroleum feedstock.

(~~10~~13) "Blendstock" means a component that is either used alone or is blended with another component(s) to produce a finished fuel used in a motor vehicle. Each blendstock corresponds to a fuel pathway in the California-modified GREET. A blendstock that is used directly as a transportation fuel in a vehicle is considered a finished fuel.

(14) "Business Partner" means the identifier in the LRT that refers to the counter party in a specific transaction involving the regulated party. This can either be the buyer or seller of fuel, whichever applies to the specific transaction.

(~~11~~15) "Carbon intensity" means the amount of lifecycle greenhouse gas emissions, per unit of energy of fuel delivered, expressed in grams of carbon dioxide equivalent per megajoule (gCO2E/MJ).

(~~12~~16) "Compressed Natural Gas (CNG)" means natural gas that has been compressed to a pressure greater than ambient pressure ~~and meets the requirements of title 13, CCR, section 2292.5~~.

(~~13~~17) "Credits" and "deficits" means the measures used for determining a regulated party's compliance with the average carbon intensity requirements in sections 95482 and 95483. Credits and deficits are denominated in units of metric tons of carbon dioxide equivalent (CO2E), and are calculated pursuant to section 95485(a).

(~~14~~18) "Diesel Fuel" (also called conventional diesel fuel) has the same meaning as specified in title 13, CCR, section 2281(b).

(~~15~~19) "Diesel Fuel Blend" means a blend of diesel fuel and biodiesel containing no more than 5% (B5) biodiesel by weight and meeting ASTM D975-08ae1, (edited December 2008), *Specification for Diesel Fuel Oils*, which is incorporated herein by reference.

(~~16~~20) "E100," also known as "Denatured Fuel Ethanol," means nominally anhydrous ethyl alcohol meeting ASTM D4806-08 (July 1, 2008), *Standard Specification for Denatured Fuel Ethanol for Blending with Gasolines for Use as Automotive Spark-Ignition Engine Fuel*, which is incorporated herein by reference.

(~~17~~21) "Executive Officer" means the Executive Officer of the Air Resources Board, or his or her designee.

(22) "Electrical Distribution Utility" means an entity that owns or operates an electrical distribution system, including:

(A) a public utility as defined in the Public Utilities Code section 216 (referred to as an Investor Owned Utility or IOU); or

(B) a local publicly owned electric utility (POU) as defined in Public Utilities Code section 224.3; or

(C) an Electrical Cooperative (COOP) as defined in Public Utilities Code section 2776

which provides electricity to retail end users in California.

(~~18~~23) "Final Distribution Facility" means the stationary finished fuel transfer point from which the finished fuel is transferred into the cargo tank truck, pipeline, or other delivery vessel for delivery to the facility at which the finished fuel will be dispensed into motor vehicles.

(~~19~~24) "Finished fuel" means a fuel that is used directly in a vehicle for transportation purposes without requiring additional chemical or physical processing.

(~~20~~25) "Fossil CNG" means CNG that is derived solely from petroleum or fossil sources, such as oil fields and coal beds.

(26) "Fuel Pathway Code" means the identifier in the LRT that applies to a specific fuel pathway in the Lookup Table, as determined pursuant to section 95486(a)(2).

(~~20.5~~27) "GTAP" or "GTAP Model" means the Global Trade Analysis Project Model (January 2010), which is hereby incorporated by reference, and is a software package comprised of:

(A) RunGTAP (February 2009), a visual interface for use with the GTAP databases (posted at http://www.arb.ca.gov/fuels/lcfs/lcfs.htm in February 2009 and available for download at https://www.gtap.agecon.purdue.edu/products/rungtap/default.asp), which is hereby incorporated by reference;

(B) GTAP-BIO (February 2009), the GTAP model customized for corn ethanol (posted at http://www.arb.ca.gov/fuels/lcfs/lcfs.htm in February 2009 and available with its components as a .zip file for download at http://www.arb.ca.gov/fuels/lcfs/gtapbio.zip); which is hereby incorporated by reference;

(C) GTP-SGR (February 2009), the GTAP model customized for sugarcane ethanol (posted at http://www.arb.ca.gov/fuels/lcfs/lcfs.htm in February 2009 and available with its components as a .zip file for download at http://www.arb.ca.gov/fuels/lcfs/gtpsgr.zip), which is hereby incorporated by reference; and

(D) GTAP-SOY (January 2010), the compressed file containing the GTAP model customized for Midwest soybeans (posted at http://www.arb.ca.gov/fuels/lcfs/lcfs.htm in January 2010 and available with its components as a .zip file for download at http://www.arb.ca.gov/fuels/lcfs/gtap-soy.zip), which is hereby incorporated by reference.

(~~21~~28) "HDV" means a heavy-duty vehicle that is rated at 14,001 or more pounds gross vehicle weight rating (GVWR).

(~~22~~29) "Home fueling" means the dispensing of fuel by use of a fueling appliance that is located on or within a residential property with access limited to a single household.

(~~23~~30) "Import" means to bring a product from outside California into California.

(~~24~~31) "Importer" means the person who owns the liquid transportation fuel or blendstock, in the transportation equipment that held or carried the product, at the point the equipment entered California. For purposes of this definition, "transportation equipment" includes, but is not limited to, rail cars, cargo tanker trucks, and pipelines. ~~an imported product when it is received at the import facility in California.~~

~~(25) "Import facility" means, with respect to any imported liquid product, the storage tank in which the product was first delivered from outside California into California, including, in the case of liquid product imported by cargo tank and delivered directly to a facility for dispensing the product into motor vehicles, the cargo tank in which the product was imported.~~

(~~26~~32) "Intermediate calculated value" means a value that is used in the calculation of a reported value but does not by itself meet the reporting requirement under section 95484(b~~c~~).

(~~27~~33) "LDV & MDV" means a vehicle category that includes both light-duty (LDV) and medium-duty vehicles (MDV).

(A) "LDV" means a vehicle that is rated at 8500 pounds or less GVWR.
(B) "MDV" means a vehicle that is rated between 8501 and 14,000 pounds GVWR.

(~~28~~34) "Lifecycle greenhouse gas emissions" means the aggregate quantity of greenhouse gas emissions (including direct emissions and significant indirect emissions such as significant emissions from land use changes), as determined by the Executive Officer, related to the full fuel lifecycle, including all stages of fuel and feedstock production and distribution, from feedstock generation or extraction through the distribution and delivery and use of the finished fuel to the ultimate consumer, where the mass values for all greenhouse gases are adjusted to account for their relative global warming potential.

(~~29~~35) "Liquefied Natural Gas (LNG)" means natural gas that has been liquefied ~~and meets the requirements of title 13, CCR, section 2292.5~~.

(~~30~~36) "Liquefied petroleum gas (LPG or propane)" has the same meaning as defined in Vehicle Code section 380.

(37) "LRT Reporting Deadlines" means the five reporting dates specified in section 95484(b)(1).

(~~31~~38) "Motor vehicle" has the same meaning as defined in section 415 of the Vehicle Code.

(~~32~~39) "Multi-fuel vehicle" means a vehicle that uses two or more distinct fuels for its operation. A multi-fuel vehicle (also called a vehicle operating in blended-mode) includes a bi-fuel vehicle and can have two or more fueling ports onboard the vehicle. A fueling port can be an electrical plug or a receptacle for liquid or gaseous fuel. As an example, a plug-in hybrid hydrogen internal combustion engine vehicle (ICEV) uses both electricity and hydrogen as the fuel source and can be "refueled" using two separately distinct fueling ports.

(~~33~~40) "Multimedia evaluation" has the same meaning as specified in H&S section 43830.8(b) and (c).

(~~34~~41) "Natural gas" means a mixture of gaseous hydrocarbons and other compounds, with at least 80 percent methane (by volume), and typically sold or distributed by utilities, such as any utility company regulated by the California Public Utilities Commission.

(42) "Petroleum Intermediate" means a petroleum product that can be further processed to produce CARBOB, diesel, or other petroleum blendstocks.

(43) "Physical Pathway Code (PPC)" means the code in the LRT that describes the applicable physical pathway, as defined in section 95484(c)(2).

(~~35~~44) "Private access fueling facility" means a fueling facility with access restricted to privately-distributed electronic cards ("cardlock") or is located in a secure area not accessible to the public.

(~~36~~45) "Producer" means, with respect to any liquid fuel, the person who owns the liquid fuel when it is supplied from the production facility. "Producer" includes an "out-of-state producer," which is a producer that has its production facility located outside California.

(~~37~~46) "Production facility" means, with respect to any liquid fuel (other than LNG), a facility in California at which the fuel is produced. For an "out-of-state producer," the production facility is located outside California. "Production facility" means, with respect to natural gas (CNG, LNG or biogas), a facility in California at which fuel is converted, compressed, liquefied, refined, treated, or otherwise processed into CNG, LNG, biogas, or biogas-natural gas blend that is ready for transportation use in a vehicle without further physical or chemical processing.

(~~38~~47) "Public access fueling facility" means a fueling facility that is not a private access fueling dispenser.

(~~39~~48) "Regulated party" means a person who, pursuant to section 95484(a), must meet the average carbon intensity requirements in section 95482 or 95483.

(~~40~~49) "Renewable diesel" means a motor vehicle fuel or fuel additive that is all the following:

(A) Registered as a motor vehicle fuel or fuel additive under 40 CFR part 79;
(B) Not a mono-alkyl ester;
(C) Intended for use in engines that are designed to run on conventional diesel fuel; and
(D) Derived from nonpetroleum renewable resources.

(~~41~~50) "Single fuel vehicle" means a vehicle that uses a single external source of fuel for its operation. The fuel can be a pure fuel, such as gasoline, or a blended fuel such as E85 or a diesel fuel containing biomass-based diesel. ~~A dedicated fuel vehicle has one fueling port onboard the vehicle. Examples include BEV, E85 FFV, vehicles running on a biomass-based diesel blend, and grid-independent hybrids such as a Toyota Prius.®~~

(51) "Transaction Date" means the identifier in the LRT that specifies the title transfer date as shown on the Product Transfer Document.

(52) "Transaction Quantity" means the identifier in the LRT that specifies the amount of fuel reported in a transaction. A Transaction Quantity may be reported in gallons, KWh, scf, or other appropriate units.

(53) "Transaction Type" means the identifier in the LRT that describes the nature of a fuel-based transaction, as defined below:

(A) "Production" means the transportation fuel was produced inside California;
(B) "Import" means the transportation fuel was produced outside California and imported into California;
(C) "Purchased with Obligation" means the transportation fuel was purchased with the compliance obligation from a regulated party;
(D) "Purchased without Obligation" means the transportation fuel was purchased without the compliance obligation from a regulated party;
(E) "Sold with Obligation" means the transportation fuel was sold with the compliance obligation by a regulated party;

(F) "Sold without Obligation" means the transportation fuel was sold without the compliance obligation by a regulated party;
(G) "Export" means the transportation fuel was exported outside of California after temporarily being in California;
(H) "Loss of Inventory" means the fuel entered the California fuel pool but was not used in a motor vehicle due to spillage; and
(I) "Not Used for Transportation" means the fuel did not meet the definition specified in section 95481(a)(52).

(4254) "Transportation fuel" means any fuel used or intended for use as a motor vehicle fuel or for transportation purposes in a nonvehicular source.

(b) *Acronyms.* For the purposes of sections 95480 through 95489, the following acronyms apply.

(1) "ASTM" means ASTM International (formerly American Society for Testing and Materials).
(2) "BEV" means battery electric vehicles.
(3) "CARBOB" means California reformulated gasoline blendstock for oxygenate blending
(4) "CaRFG" means California reformulated gasoline.
(5) "CEC" means California Energy Commission.
(6) "CFR" means code of federal regulations.
(7) "CI" means carbon intensity.
(8) "CNG" means compressed natural gas.
(9) "EER" means energy economy ratio.
(10) "FCV" means fuel cell vehicles.
(11) "FFV" means flex fuel vehicles.
(12) "gCO2E/MJ" means grams of carbon dioxide equivalent per mega joule.
(13) "GREET" means the Greenhouse gases, Regulated Emissions, and Energy use in Transportation model.
(14) "GVWR" means gross vehicle weight rating.
(15) "HDV" means heavy-duty vehicles.
(16) "ICEV" means internal combustion engine vehicle.
(17) "LCFS" means Low Carbon Fuel Standard.
(18) "LDV" means light-duty vehicles.
(19) "LNG" means liquefied natural gas.
(20) "LPG" means liquefied petroleum gas.
(21) "LRT" means LCFS reporting tool.
(22) "MCON" means marketable crude oil name.
(2123) "MDV" means medium-duty vehicles.
(2224) "MT" means metric tons of carbon dioxide equivalent.
(2325) "PHEV" means plug-in hybrid vehicles.
(26) "TEOR" means thermally enhanced oil recovery.
(2427) "ULSD" means California ultra low sulfur diesel.

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference ~~cited~~: Sections 38501, 38510, 38560, 38560.5, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

Section 95482. Average Carbon Intensity Requirements for Gasoline and Diesel.

(a) Starting January 1, 2011 and for each year thereafter, a regulated party must meet the average carbon intensity requirements set forth in Table 1 and Table 2 of this section for its transportation gasoline and diesel fuel, respectively, in each calendar year. For 2010 only, a regulated party does not need to meet a carbon intensity requirement, but it must meet the reporting requirements set forth in section 95484(bc).

(b) *Requirements for gasoline and fuels used as a substitute for gasoline.*

*Table 1. LCFS Compliance Schedule for 2011 to 2020 for Gasoline and Fuels Used as a Substitute for Gasoline.**

Year	Average Carbon Intensity (gCO2E/MJ)	~~% Reduction~~
2010	Reporting Only	
2011	95.61	~~0.25%~~
2012	95.37	~~0.5%~~
2013	96.42 ~~94.89~~	~~1.0%~~
2014	95.93 ~~94.41~~	~~1.5%~~
2015	94.95 ~~93.45~~	~~2.5%~~
2016	93.98 ~~92.50~~	~~3.5%~~
2017	92.52 ~~91.06~~	~~5.0%~~
2018	91.06 ~~89.62~~	~~6.5%~~
2019	89.60 ~~88.18~~	~~8.0%~~
2020 and subsequent years	87.65 ~~86.27~~	~~10.0%~~

* The average carbon intensity requirements for years 2011 and 2012 reflect reductions from base year (2010) CI values for CaRFG calculated using the CI for crude oil used in California refineries in 2006. The average carbon intensity requirements for years 2013 to 2020 reflect reductions from revised base year (2010) CI values for CaRFG calculated using the CI for crude oil used in California refineries in 2009.

(c) *Requirements for diesel fuel and fuels used as a substitute for diesel fuel.*

*Table 2. LCFS Compliance Schedule for 2011 to 2020 for Diesel Fuel and Fuels Used as a Substitute for Diesel Fuel.***

Year	Average Carbon Intensity (gCO2E/MJ)	~~% Reduction~~
2010	Reporting Only	
2011	94.47	~~0.25%~~
2012	94.24	~~0.5%~~
2013	95.40 ~~93.76~~	~~1.0%~~
2014	94.91 ~~93.29~~	~~1.5%~~
2015	93.95 ~~92.34~~	~~2.5%~~
2016	92.99 ~~91.40~~	~~3.5%~~
2017	91.54 ~~89.97~~	~~5.0%~~
2018	90.10 ~~88.55~~	~~6.5%~~
2019	88.65 ~~87.13~~	~~8.0%~~
2020 and subsequent years	86.72 ~~85.24~~	~~10.0%~~

** The average carbon intensity requirements for years 2011 and 2012 reflect reductions from base year (2010) CI values for ULSD calculated using the CI for crude oil used in California refineries in 2006. The average carbon intensity requirements for years 2013 to 2020 reflect reductions from revised base year (2010) CI values for ULSD calculated using the CI for crude oil used in California refineries in 2009.

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference ~~cited~~: Sections 38501, 38510, 38560, 38560.5, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

Section 95483. Average Carbon Intensity Requirements for Alternative Fuels.

* * * * *

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference ~~cited~~: Sections 38501, 38510, 38560, 38560.5, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

Section 95484. Requirements for Regulated Parties.

(a) *Identification of Regulated Parties.* The purpose of this part is to establish the criteria by which a regulated party is determined. The regulated party is initially established for each type of transportation fuel, but this part provides for the transfer of regulated party status and the associated compliance obligations by agreement, notification, or other means, as specified below.

(1) *Regulated Parties for Gasoline.*

(A) *Designation of Producers and Importers as Regulated Parties.*

1. *Where Oxygenate Is Added to Downstream CARBOB.*

For gasoline consisting of CARBOB and an oxygenate added downstream from the California facility at which the CARBOB was produced or imported, the regulated party is initially the following:

a. With respect to the CARBOB, the regulated party is the producer or importer of the CARBOB; and

b. With respect to the oxygenate, the regulated party is the producer or importer of the oxygenate.

2. *Where No Separate CARBOB.* For gasoline that does not include CARBOB that had previously been supplied from the facility at which was produced or imported, the regulated party for the gasoline is the producer or importer of the gasoline.

(B) *Effect of Transfer of CARBOB by Regulated Party.*

1. *Threshold Determination Whether Recipient of CARBOB is a Producer or Importer.* Whenever a person who is the regulated party for CARBOB transfers ownership of the CARBOB, the recipient must notify the transferor whether the recipient is a producer or importer for purposes of this section 95484(a)(1)(B).

2. *Producer or Importer Acquiring CARBOB Becomes the Regulated Party Unless Specified Conditions Are Met.* Except as provided for in section 95484(a)(1)(B)3., when a person who is the regulated party transfers ownership of the CARBOB to a producer or importer, the recipient of ownership of the CARBOB (i.e., the transferee) becomes the

regulated party for it. The transferor must provide the recipient a product transfer document that prominently states the information specified in paragraphs a. and b. below, and the transferor and recipient must meet the requirements specified in paragraph c., as set forth below:

a. the volume and average carbon intensity of the transferred CARBOB. ~~For a transferor that is a regulated party subject to section 95486(b)(2)(A)2., the~~ The transferor of CARBOB may report as the "average carbon intensity" on the product transfer document the total carbon intensity value for CARBOB as shown in the Carbon Intensity Lookup Table; and

b. the recipient is now the regulated party for the acquired CARBOB and accordingly is responsible for meeting the requirements of the LCFS regulation with respect to the CARBOB.

c. For purposes of section 95485(a), except as provided in paragraph c.iii. of this provision:

   i. the transferor under a. above must include the $Deficits^{XD}_{Incremental20XX}$ ~~$Deficits^{XD}_{Incremental}$~~, as defined and set forth in section 95486(b)(2)(A)1~~2.a~~., in the transferor's annual credits and deficits balance calculation set forth in section 95485(a)(2); and

   ii. the recipient under b. above must include $Deficits^{XD}_{Base}$, as defined and set forth in section 95486(b)(2)(A)1~~2.a~~., in the recipient's annual credits and deficits balance calculation set forth in section 95485(a)(2).

   iii. Paragraphs c.i and c.ii. above notwithstanding, the transferor and recipient of CARBOB may, by the time the ownership is transferred, specify by written contract which party is responsible for accounting for the base deficit and incremental deficit In the annual credits and deficits balance calculation set forth in section 95485(a)(2).

3. *Transfer of CARBOB or Gasoline to a Producer or Importer and Retaining Compliance Obligation.* Section 95484(a)(1)(B)2. notwithstanding, a regulated party transferring ownership of CARBOB to a producer or importer may elect to remain the regulated party and retain the LCFS compliance obligation for the transferred CARBOB by providing the recipient at the time of transfer with a product transfer document that prominently states that the transferor has elected to remain the regulated party with respect to the CARBOB.

4. *If Recipient Is Not a Producer or Importer, Regulated Party Transferring CARBOB Remains Regulated Party Unless Specified Conditions Are Met.* When a person who is the regulated party for CARBOB transfers ownership of the CARBOB to a person who is not a producer or importer, the transferor remains the regulated party unless the conditions of section 95484(a)(1)(B)5. are met.

5. *Conditions Under Which a Non-Producer and Non-Importer Acquiring Ownership of CARBOB Becomes the Regulated Party.* A person, who is neither a producer nor an importer and who acquires ownership of CARBOB from the regulated party, becomes the regulated party for the CARBOB if, by the time ownership is transferred, the two parties agree by written contract that the person acquiring ownership accepts the LCFS compliance obligation as the regulated party. For the transfer of regulated party obligations to be effective, the transferor must also provide the recipient a product transfer document that prominently states the information specified in paragraphs a. and b. below, and the transferor and recipient must meet the requirements specified in paragraph c., as set forth below:

    a. the volume and average carbon intensity of the transferred CARBOB. ~~For a transferor that is a regulated party subject to section 95486(b)(2)(A)2., the~~ The transferor of CARBOB may report as the "average carbon intensity" on the product transfer document the total carbon intensity value for CARBOB as shown in the Carbon Intensity Lookup Table; and

    b. the recipient is now the regulated party for the acquired CARBOB and accordingly is responsible for

meeting the requirements of the LCFS regulation with respect to the CARBOB.

c. For purposes of section 95485(a), except as provided in paragraph c.iii. of this provision:

i. the transferor under a. above must include the $\underline{Deficits^{XD}_{Incremental20XX}}$ ~~$Deficits^{XD}_{Incremental}$~~, as defined and set forth in section 95486(b)(2)(A)1~~2.a~~., in the transferor's annual credits and deficits balance calculation set forth in section 95485(a)(2); and

ii. the recipient under b. above must include $Deficits^{XD}_{Base}$, as defined and set forth in section 95486(b)(2)(A)1~~2.a~~., in the recipient's annual credits and deficits balance calculation set forth in section 95485(a)(2).

iii. Paragraphs c.i and c.ii. above notwithstanding, the transferor and recipient of CARBOB may, by the time the ownership is transferred, specify by written contract which party is responsible for accounting for the base deficit and incremental deficit In the annual credits and deficits balance calculation set forth in section 95485(a)(2).

(C) *Effect of Transfer By Regulated Party of Oxygenate to Be Blended With CARBOB.*

1. *Person Acquiring the Oxygenate Becomes the Regulated Party Unless Specified Conditions Are Met.* Except as provided in section 95484(a)(1)(C)2., when a person who is the regulated party for oxygenate to be blended with CARBOB transfers ownership of the oxygenate before it has been blended with CARBOB, the recipient of ownership of the oxygenate (i.e., the transferee) becomes the regulated party for it. The transferor must provide the recipient a product transfer document that prominently states:

a. the volume and carbon intensity of the transferred oxygenate; and
b. the recipient is now the regulated party for the acquired oxygenate and accordingly is responsible for

meeting the requirements of the LCFS with respect to the oxygenate.

2. *Transfer of Oxygenate and Retaining Compliance Obligation.* Section 95484(a)(1)(C)1. notwithstanding, a regulated party transferring ownership of oxygenate may elect to remain the regulated party and retain the LCFS compliance obligation for the transferred oxygenate by providing the recipient at the time of transfer with a product transfer document that prominently states that the transferor has elected to remain the regulated party with respect to the oxygenate.

(D) *Effect of Transfer by a Regulated Party of Gasoline to be Blended With Additional Oxygenate.* A person who is the sole regulated party for a batch of gasoline and is transferring ownership of the gasoline to another party that will be combining it with additional oxygenate may transfer his or her obligations as a regulated party if all of the conditions set forth below are met.

1. Blending the additional oxygenate into the gasoline is not prohibited by title 13, California Code of Regulations, section 2262.5(d).

2. By the time ownership is transferred the two parties agree by written contract that the person acquiring ownership accepts the LCFS compliance obligations as a regulated party with respect to the gasoline.

3. The transferor provides the recipient a product transfer document that prominently states the information specified in paragraphs a. and b. below, and the transferor and recipient must meet the requirements specified in paragraph c., as set forth below:

   a. the volume and average carbon intensity of the transferred gasoline. ~~For a transferor that is a regulated party subject to section 95486(b)(2)(A)2., the~~ The transferor of CARBOB may use the total carbon intensity value for CARBOB along with the carbon intensity for the oxygenate, as shown in the Carbon Intensity Lookup Table, for calculating the "average carbon intensity" on the product transfer document; and
   b. the recipient is now the regulated party for the acquired gasoline and accordingly is responsible for

meeting the requirements of the LCFS regulation with respect to the gasoline.

c. For purposes of section 95485(a), except as provided in paragraph c.iii. of this provision:

i. the transferor under a. above must include the $\underline{Deficits^{XD}_{Incremental20XX}}$ ~~$Deficits^{XD}_{Incremental}$~~, as defined and set forth in section 95486(b)(2)(A)1~~2.a.~~, in the transferor's annual credits and deficits balance calculation set forth in section 95485(a)(2); and

ii. the recipient under b. above must include , as defined and set forth in section 95486(b)(2)(A)1~~2.a.~~, in the recipient's annual credits and deficits balance calculation set forth in section 95485(a)(2).

iii. Paragraphs c.i and c.ii. above notwithstanding, the transferor and recipient of CARBOB may, by the time the ownership is transferred, specify by written contract which party is responsible for accounting for the base deficit and incremental deficit in the annual credits and deficits balance calculation set forth in section 95485(a)(2).

4. The written contract between the parties includes an agreement that the recipient of the gasoline will be blending additional oxygenate into the gasoline.

(E) *Effect of Transfer by a Regulated Party of Oxygenate to be Blended With Gasoline.* Where oxygenate is added to gasoline, the regulated party with respect to the oxygenate is initially the producer or importer of the oxygenate. Transfers of the oxygenate are subject to section 95484(a)(1)(C).

(2) *Regulated Party for Diesel Fuel and Diesel Fuel Blends.*

(A) *Designation of Producers and Importers as Regulated Parties.*

1. *Where Biomass-Based Diesel Is Added to Downstream Diesel Fuel.*
For a diesel fuel blend consisting of diesel fuel and biomass-based diesel added downstream from the California facility

at which the diesel fuel was produced or imported, the regulated party is initially the following:

a. With respect to the diesel fuel, the regulated party is the producer or importer of the diesel fuel; and

b. With respect to the biomass-based diesel, the regulated party is the producer or importer of the biomass-based diesel.

2. *All Other Diesel Fuels.* For any other diesel fuel that does not fall within section 95484(a)(2)(A)1., the regulated party is the producer or importer of the diesel fuel.

(B) *Effect of Transfer of Diesel Fuel and Diesel Fuel Blends by Regulated Party.*

1. *Threshold Determination Whether Recipient of Diesel Fuel or Diesel Fuel Blend is a Producer or Importer.* Whenever a person who is the regulated party for diesel fuel or a diesel fuel blend transfers ownership before it has been transferred from its final distribution facility, the recipient must notify the transferor whether the recipient is a producer or importer for purposes of this section 95484(a)(2)(B).

2. *Producer or Importer Acquiring Diesel Fuel or Diesel Fuel Blend Becomes the Regulated Party Unless Specified Conditions Are Met.* Except as provided for in section 95484(a)(2)(B)3., when a person who is the regulated party for diesel fuel or a diesel fuel blend transfers ownership to a producer or importer before it has been transferred from its final distribution facility, the recipient of ownership of the diesel fuel or diesel fuel blend (i.e., the transferee) becomes the regulated party for it. The transferor must provide the recipient a product transfer document that prominently states the information specified in paragraphs a. and b. below, and the transferor and recipient must meet the requirements specified in paragraph c., as set forth below:

a. the volume and average carbon intensity of the transferred diesel fuel or diesel fuel blend. ~~For a transferor that is a regulated party subject to section 95486(b)(2)(A)2., the~~ The transferor of diesel fuel or diesel fuel blend may report as the "average carbon intensity" on the product transfer document the total

carbon intensity value for "diesel" (ULSD) as shown in the Carbon Intensity Lookup Table; and

b. the recipient is now the regulated party for the acquired diesel fuel or diesel fuel blend and accordingly is responsible for meeting the requirements of the LCFS regulation with respect to it.

c. For purposes of section 95485(a), except as provided in paragraph c.iii. of this provision:

i. the transferor under a. above must include the $\underline{Deficits^{XD}_{Incremental20XX}}$ ~~$Deficits^{XD}_{Incremental}$~~, as defined and set forth in section 95486(b)(2)(A)1~~2.a~~., in the transferor's annual credits and deficits balance calculation set forth in section 95485(a)(2); and

ii. the recipient under b. above must include $Deficits^{XD}_{Base}$, as defined and set forth in section 95486(b)(2)(A)1~~2.a~~., in the recipient's annual credits and deficits balance calculation set forth in section 95485(a)(2).

iii. Paragraphs c.i and c.ii. above notwithstanding, the transferor and recipient of diesel fuel or diesel fuel blend may, by the time the ownership is transferred, specify by written contract which party is responsible for accounting for the base deficit and incremental deficit In the annual credits and deficits balance calculation set forth in section 95485(a)(2).

3. *Transfer of Diesel Fuel or Diesel Fuel Blend to a Producer or Importer and Retaining Compliance Obligation.* Section 95484(a)(2)(B)2. notwithstanding, a regulated party transferring ownership of diesel fuel or diesel fuel blend to a producer or importer may elect to remain the regulated party and retain the LCFS compliance obligation for the transferred diesel fuel or diesel fuel blend by providing the recipient at the time of transfer with a product transfer document that prominently states that the transferor has elected to remain the regulated party with respect to the diesel fuel or diesel fuel blend.

4. *If Recipient Is Not a Producer or Importer, Regulated Party Transferring Diesel Fuel or Diesel Fuel Blend Remains Regulated Party Unless Specified Conditions Are Met.* When a person who is the regulated party for diesel fuel or a diesel fuel blend transfers ownership of the diesel fuel or diesel fuel blend to a person who is not a producer or importer, the transferor remains the regulated party unless the conditions of section 95484(a)(2)(B)5. are met.

5. *Conditions Under Which a Non-Producer and Non-Importer Acquiring Ownership of Diesel Fuel or Diesel Fuel Blend Becomes the Regulated Party.* A person, who is neither a producer nor an importer and who acquires ownership of diesel fuel or a diesel fuel blend from the regulated party, becomes the regulated party for the diesel fuel or diesel fuel blend if, by the time ownership is transferred, the two parties agree by written contract that the person acquiring ownership accepts the LCFS compliance obligation as the regulated party. For the transfer of regulated party obligations to be effective, the transferor must also provide the recipient a product transfer document that prominently states the information specified in paragraphs a. and b. below, and the transferor and recipient must meet the requirements specified in paragraph c., as set forth below:

   a. the volume and average carbon intensity of the transferred diesel fuel or diesel fuel blend. ~~For a transferor that is a regulated party subject to section 95486(b)(2)(A)2., the~~ The transferor of diesel fuel or diesel fuel blend may report as the "average carbon intensity" on the product transfer document the total carbon intensity value for "diesel" (ULSD) as shown in the Carbon Intensity Lookup Table; and

   b. the recipient is now the regulated party for the acquired diesel fuel or diesel fuel blend and accordingly is responsible for meeting the requirements of the LCFS regulation with respect to the diesel fuel or diesel fuel blend.

   c. For purposes of section 95485(a), except as provided in paragraph c.iii. of this provision:

      i. the transferor under a. above must include the $\underline{Deficits^{XD}_{Incremental20XX}}$ ~~$Deficits^{XD}_{Incremental}$~~, as defined and set forth in section 95486(b)(2)(A)1~~2.a~~., in

the transferor's annual credits and deficits balance calculation set forth in section 95485(a)(2); and

ii. the recipient under b. above must include $Deficits^{XD}_{Base}$, as defined and set forth in section 95486(b)(2)(A)1~~2.a~~., in the recipient's annual credits and deficits balance calculation set forth in section 95485(a)(2).

iii. Paragraphs c.i and c.ii. above notwithstanding, the transferor and recipient of diesel fuel or diesel fuel blend may, by the time the ownership is transferred, specify by written contract which party is responsible for accounting for the base deficit and incremental deficit In the annual credits and deficits balance calculation set forth in section 95485(a)(2).

(C) *Effect of Transfer By Regulated Party of Biomass-Based Diesel to Be Blended With Diesel Fuel.*

1. *Person Acquiring the Biomass-Based Diesel Becomes the Regulated Party Unless Specified Conditions Are Met.*

Except as provided in section 95484(a)(2)(C)2., when a person who is the regulated party for biomass-based diesel to be blended with diesel fuel transfers ownership of the biomass-based diesel before it has been blended with diesel fuel, the recipient of ownership of the biomass-based diesel (i.e., the transferee) becomes the regulated party for it. The transferor must provide the recipient a product transfer document that prominently states:

a. the volume and carbon intensity of the transferred biomass-based diesel; and

b. the recipient is now the regulated party for the acquired biomass-based diesel and accordingly is responsible for meeting the requirements of the LCFS with respect to the biomass-based diesel.

2. *Transfer of Biomass-Based Diesel and Retaining Compliance Obligation.*

Section 95484(a)(2)(C)1. notwithstanding, the transferor may elect to remain the regulated party and retain the LCFS compliance obligation for the transferred biomass-based diesel by providing the recipient at the time of transfer with a product transfer document that prominently states that the transferor has elected to remain the regulated party with respect to the biomass-based diesel.

(3) *Regulated Party For Liquid Alternative Fuels Not Blended With Gasoline Or Diesel Fuel.* For a liquid alternative fuel, including but not limited to neat denatured ethanol and neat biomass-based diesel, that is not blended with gasoline or diesel fuel, or with any other petroleum-derived fuel, the regulated party is the producer or importer of the liquid alternative fuel.

(4) *Regulated Party For Blends Of Liquid Alternative Fuels And Gasoline Or Diesel Fuel.*

(A) *Designation of producers and Importers as regulated parties.* For a transportation fuel that is a blend of liquid alternative fuel and gasoline or diesel fuel – but that does not itself constitute gasoline or diesel fuel – the regulated party is the following:

(1) With respect to the alternative fuel component, the regulated party is the person who produced the liquid alternative fuel in California or imported it into California; and

(2) With respect to the gasoline or diesel fuel component, the regulated party is the person who produced the gasoline or diesel fuel in California or imported it into California.

(B) *Transfer Of A Blend Of Liquid Alternative Fuel And Gasoline Or Diesel Fuel And Compliance Obligation.* Except as provided for in section 95484(a)(4)(C), on each occasion that a person transfers ownership of fuel that falls within section 95484(a)(4) ("alternative liquid fuel blend") before it has been transferred from its final distribution facility, the recipient of ownership of such an alternative liquid fuel blend (i.e., the transferee) becomes the regulated party for that alternative liquid fuel blend. The transferor shall provide the recipient a product transfer document that prominently states:

1. the volume and average carbon intensity of the transferred alternative liquid fuel blend; and

2. the recipient is now the regulated party for the acquired alternative liquid fuel blend and accordingly is responsible for meeting the requirements of the LCFS regulation with respect to the alternative liquid fuel blend.

(C) *Transfer Of A Blend Of Liquid Alternative Fuel And Gasoline Or Diesel Fuel And Retaining Compliance Obligation.* Section 95484(a)(4)(B) notwithstanding, the transferor may elect to remain the regulated party and retain the LCFS compliance obligation for the transferred alternative liquid fuel blend by written contract with the recipient. The transferor shall provide the recipient with a product transfer document that identifies the volume and average carbon intensity of the transferred alternative liquid fuel blend.

(5) *Regulated Parties for Natural Gas (Including CNG, LNG, and Biogas).*

(A) *Designation of Regulated Parties for Fossil CNG and Biogas CNG.*

1. *Where Biogas CNG is Added to Fossil CNG.*

For fuel consisting of a fossil CNG and biogas CNG blend, the regulated party is initially the following:

a. With respect to the fossil CNG, the regulated party is the person that owns the natural gas fueling equipment at the facility at which the fossil CNG and biogas CNG blend is dispensed to motor vehicles for their transportation use; and

b. With respect to the biogas CNG, the regulated party is the producer or importer of the biogas CNG.

2. *Where No Biogas CNG is Added to Fossil CNG.* For fuel consisting solely of fossil CNG, the regulated party is the person that owns the natural gas fueling equipment at the facility at which the fossil CNG is dispensed to motor vehicles for their transportation use.

(B) *Designation of Regulated Parties for Fossil LNG and Biogas LNG.*

1. *Where Biogas LNG is Added to Fossil LNG.*

For a fuel consisting of a fossil LNG and biogas LNG blend, the regulated party is initially the following:

a. With respect to the fossil LNG, the regulated party is the person that owns the fossil LNG when it is transferred to the facility at which the liquefied blend is dispensed to motor vehicles for their transportation use; and

b. With respect to the biogas, the regulated party is the producer or importer of the biogas LNG.

2. *Where No Biogas LNG is Added to Fossil LNG.* For fuel consisting solely of fossil LNG, the regulated party is initially the person that owns the fossil LNG when it is transferred to the facility at which the fossil LNG is dispensed to motor vehicles for their transportation use.

(C) *Designation of Regulated Party for Biogas CNG or Biogas LNG Supplied Directly to Vehicles for Transportation Use.* For fuel consisting solely of biogas CNG or biogas LNG that is produced in California and supplied directly to vehicles in California for their transportation use without first being blended into fossil CNG or fossil LNG, the regulated party is initially the producer of the biogas CNG or biogas LNG.

(D) *Effect of Transfer of Fuel by Regulated Party.*

1. *Transferor Remains Regulated Party Unless Conditions Are Met.*

When a person who is the regulated party for a fuel specified in section 95484(a)(5)(A), (B), or (C) transfers ownership of the fuel, the transferor remains the regulated party unless the conditions of section 95484(a)(5)(D)2. are met.

2. *Conditions Under Which a Person Acquiring Ownership of a Fuel Becomes the Regulated Party.* Section 95484(a)(5)(D)1. notwithstanding, a person acquiring ownership of a fuel specified in section 95484(a)(5)(A), (B), or (C) from the regulated party becomes the regulated party for that fuel if, by the time ownership is transferred, the two parties agree by written contract that the person acquiring ownership accepts the LCFS compliance obligation as the regulated party. For the transfer of regulated party obligations to be effective, the transferor must also provide the recipient a product transfer document that prominently states:

a. the volume and average carbon intensity of the transferred fuel; and

b. the recipient is now the regulated party for the acquired fuel and accordingly is responsible for meeting the requirements of the LCFS regulation with respect to the acquired fuel.

(6) *Regulated Parties for Electricity.* For electricity used as a transportation fuel, the party who is eligible to opt-in as a regulated party is determined as specified below:

(A) For transportation fuel supplied through electric vehicle (EV) charging equipment in a single or multi-family residence, the Electrical Distribution Utility is eligible to opt-in as the regulated party in their service territory. To receive credit for electricity supplied as a transportation fuel, the Electrical Distribution Utility must:

1. Use all credit proceeds as direct benefits for current EV customers.

2. Educate the public on the benefits of EV transportation (including environmental benefits and costs of EV charging as compared to gasoline). These efforts may include, but are not limited to:

a. public meetings
b. EV dealership flyers
c. utility customer bill inserts
d. radio and/or television advertisements
e. webpage content

3. Provide rate options that encourage off-peak charging and minimize adverse impacts to the electrical grid.

4. Include in annual compliance reporting an itemized summary of efforts to meet requirements 1 through 3 above; costs associated with meeting the requirements; an accounting of credits generated, sold, and banked; and an accounting of the number of EV s known to be operating in the service territory. ARB will post the annual compliance reports for public review by May 31st of each year.

(B) For transportation fuel supplied through public access EV charging equipment, the third-party non-utility Electric Vehicle Service

Provider (EVSP) or Electrical Distribution Utility that has installed the equipment, or had an agent install the equipment, and who has a contract with the property owner or lessee where the equipment is located to maintain or otherwise service the charging equipment, is eligible to opt-in as the regulated party.

If the EVSP is not the regulated party for a specific volume of fuel, or has not fully complied with the requirements of this subarticle, the Electrical Distribution Utility is eligible to opt-in as the regulated party with EO approval. To receive credit for transportation fuel supplied through public access EV charging equipment, the regulated party must:

1. Use all credit proceeds as direct benefits for current EV customers.

2. Educate the public on the benefits of EV transportation (including environmental benefits and costs of EV charging as compared to gasoline). These efforts may include, but are not limited to:

   a. public meetings
   b. EV dealership flyers
   c. utility customer bill inserts
   d. radio and/or television advertisements
   e. webpage content

3. Provide rate options that encourage off-peak charging and minimize adverse impacts to the electrical grid.

4. Include in annual compliance reporting an itemized summary of efforts to meet requirements 1 through 3 above; costs associated with meeting the requirements; an accounting of credits generated, sold, and banked; and an accounting of the number of operating EV charging stations and the number of charging incidents. ARB will post the annual compliance reports for public review by May 31st of each year.

(C) For transportation fuel supplied to a fleet of three or more EVs, a company operating a fleet (fleet operator) is eligible to be a regulated party. If the fleet operator is not the regulated party for a specific volume of fuel, or has not otherwise fully complied with the requirements of this subarticle, the Electrical Distribution Utility is eligible to opt-in as the regulated party with EO approval. For transportation fuel supplied to a fleet of less than three EVs, the

Electrical Distribution Utility is eligible to be the regulated party. To receive credit for transportation fuel supplied to an EV fleet, the regulated party must include in annual compliance reporting an accounting of the number of EVs in the fleet.

(D) For transportation fuel supplied through private access EV charging equipment at a business or workplace, the business owner is eligible to be a regulated party. If the business owner is not the regulated party for a specific volume of fuel, or has not fully complied with the requirements of this subarticle, the Electrical Distribution Utility is eligible to opt-in as the regulated party with EO approval. To receive credit for transportation fuel supplied through private access EV charging equipment at a business or workplace, the regulated party must:

1. Educate employees on the benefits of EV transportation (including environmental benefits and costs of EV charging as compared to gasoline) through outreach efforts that may include, but are not limited to:

   a. employee meetings
   b. public meetings
   c. EV dealership flyers
   d. employee flyers
   e. webpage content
   f. preferred parking

2. Include in annual compliance reporting a summary of efforts to meet requirement 1, as well as an accounting of the number of EVs known to be charging at the business.

(E) In the event that there is measured on-road electricity as a transportation fuel that is not covered in paragraphs (B) through (D) above, the Electrical Distribution Utility is eligible to opt-in as the regulated party with EO approval. To receive credit for this transportation fuel, the Electrical Distribution Utility must meet all requirements set forth in section 95484(a)(6)(A).

~~(A) The load-serving entity or other provider of electricity services, unless section 95484(a)(6)(B), (C), or (D) below applies. "Load-serving entity" has the same meaning specified in Public Utilities Code (PUC) section 380. "Provider of electricity services" means a local publicly owned utility, retail seller (as defined in PUC section 399.12(g)), or any other person that supplies electricity to the vehicle charging equipment;~~

~~(B) The electricity services supplier, where "electricity services supplier" means any person or entity that provides bundled charging infrastructure and other electric transportation services and provides access to vehicle charging under contract with the vehicle owner or operator;~~

~~(C) The owner and operator of the electric-charging equipment, provided there is a contract between the charging equipment owner-operator and the provider of electricity services specifying that the charging equipment owner-operator is the regulated party;~~

~~(D) The owner of a home with electric vehicle-charging equipment, provided there is a contract between the homeowner and provider of electricity services specifying that the homeowner may acquire credits.~~

(7) *Regulated Parties for Hydrogen Or A Hydrogen Blend.*

(A) *Designation of Regulated Party at Time Finished Fuel is Created.*

For a volume of finished fuel consisting of hydrogen or a blend of hydrogen and another fuel ("finished hydrogen fuel"), the regulated party is initially the person who owns the finished hydrogen fuel at the time the blendstocks are blended to make the finished hydrogen fuel.

(B) *Transfer of Ownership and Retaining Compliance Obligation.* Except as provided for in section 95484(a)(7)(C), when a person who is the regulated party transfers ownership of a finished hydrogen fuel to another person, the transferor remains the regulated party.

(C) *Conditions Under Which a Person Acquiring Ownership of Finished Hydrogen Fuel Becomes the Regulated Party.* Section 95484(a)(7)(B) notwithstanding, a person who acquires ownership of finished hydrogen fuel becomes the regulated party for the fuel if, by the time ownership is transferred, the two parties (transferor and recipient) agree by written contract that the person acquiring ownership accepts the LCFS compliance obligation as the regulated party. For the transfer of regulated party obligations to be effective, the transferor must also provide the recipient a product transfer document that prominently states:

1. the volume and average carbon intensity of the transferred finished hydrogen fuel; and

2. the recipient is now the regulated party for the acquired finished hydrogen fuel and accordingly is responsible for meeting the requirements of the LCFS regulation with respect to the acquired finished hydrogen fuel.

~~(b) *Calculation of Credit Balance and Annual Compliance Obligation.*~~

~~(1) *Compliance Period.* Beginning in 2011 and every year thereafter, the annual compliance period is January 1 through December 31 of each year.~~

~~(2) *Calculation of Compliance Obligation and Credit Balance at the End of a Compliance Period.* A regulated party must calculate the credit balance at the end of a compliance period as follows:~~

~~$Compliance\ Obligation = Deficits^{Gen} + Deficits^{Carried\ Over}$~~

~~$Credit\ Balance = Credits^{Gen} + Credits^{Acquired} - Sum\ of\ (Credits^{retired} + Credits^{Sold} + Credits^{Exported})$~~

~~$Credit\ Balance = Credits^{Gen} + Credits^{CarriedOver} + Credits^{Acquired} + Deficits^{Gen} - Credits^{Sold} - Credits^{Exported} - Credits^{Retired}$~~

~~where:~~

~~$Deficits^{Gen}$ are the total deficits generated pursuant to section 95485(a) for the current compliance period;~~

~~$Deficits^{Carried\ Over}$ are the deficits carried over from the previous compliance period;~~

~~$Credits^{Gen}$ areis the total credits generated pursuant to section 954885(a) for the current compliance period;~~

~~$Credits^{CarriedOver}$ is the credits or deficits carried over from the previous compliance period;~~

~~$Credits^{Acquired}$ areis the total credits purchased or otherwise acquired, including carry back credits acquired pursuant to section 95488(a)(3)in the current compliance period;~~

~~$Deficits^{Gen}$ is the total deficits generated pursuant to section 95485(a) for the current compliance period;~~

~~$Credits^{Sold}$ areis the total credits sold or otherwise transferred in the current compliance period;~~

~~$Credits^{Exported}$ areis the total credits exported to programs outside the LCFS for the current compliance period; and~~

~~$Credits^{Retired}$ areis the total credits retired within the LCFS for the current compliance period.~~

~~(3) *Compliance Demonstration.* A regulated party's annual compliance obligation is met when the regulated party demonstrates via its annual report that it possessed and has retired a number of credits from its credit account (established pursuant to section 95488) that is equal to its compliance obligation.~~

~~(34) *Deficit Carryover.* A regulated party that does not retire sufficient credits to fully offset its compliance obligation creates a negative credit balance in a compliance period. The regulated party with a negative credit balance in a compliance period may carry over the deficit to the next compliance period, without penalty, if both the following conditions are met:~~

~~(A) the regulated party fully met its annual compliance obligation for has a credit balance greater than or equal to zero in the previous compliance period; and~~

~~(B) the number of $Credits^{retired}$ for the current annual compliance period is at least equal to 90 percent of the current annual compliance obligation. sum of the magnitude of $Credits^{Gen}$, $Credits^{CarriedOver}$, and $Credits^{Acquired}$ is greater than or equal to 90 percent of the sum of the magnitude of $Deficits^{Gen}$, $Credits^{Sold}$, $Credits^{Exported}$, $Credits^{Retired}$ and for the current compliance period.~~

~~(45) *Deficit Reconciliation.*~~

~~(A) A regulated party that meets the conditions of deficit carryover, as specified in section 95481(b)(34), must eliminate any deficit generated in a given compliance period by the end of the next compliance period. A deficit may be eliminated only by retirement of an equal amount of generated credits ($Credits^{Gen}$), by acquisition of an equal amount of credits from another regulated party ($Credits^{Acquired}$), or by any combination of these two methods. retained credits ($Credits^{CarriedOver}$), by purchase of an equal amount of credits from another regulated party, or by any combination of these two methods.~~

~~(B) If the conditions of deficit carryover as specified in section 95481(b)(34) are not met, a regulated party is subject to penalties~~

~~to the extent permitted under State law. In addition, the regulated party must eliminate any deficit generated in a given compliance period by the end of the next compliance period. A deficit may be eliminated only by retirement of an equal amount of generated credits ($Credits^{Gen}$), by acquisition of an equal amount of credits from another regulated party ($Credits^{Acquired}$), or by any combination of these two methods. a regulated party must eliminate any deficit generated in a given compliance period by the end of the next compliance period. A deficit may be eliminated only by retirement of an equal amount of retained credits ($Credits^{CarriedOver}$), by purchase of an equal amount of credits from another regulated party, or by any combination of these two methods. In addition, the regulated party is subject to penalties to the extent permitted under State law.~~

~~(C) A regulated party that is reconciling in the current compliance period a deficit from the previous compliance period under (A) or (B) above remains responsible for meeting the LCFS regulation requirements during the current compliance period.~~

(~~c~~b) *Reporting Requirements.*

(1) *Reporting Frequency*. A regulated party must submit to the Executive Officer quarterly progress reports and annual compliance reports, as specified in sections 95484(b~~c~~)(3) and 95484(b~~c~~)(4). The reporting frequencies for these reports are set forth below:

(A) *Quarterly Progress Reports For All Regulated Parties.* Beginning 2010 and each year thereafter, a regulated party must submit quarterly progress reports to the Executive Officer by:

1. May 31st – for the first calendar quarter covering January through March;

2. August 31st – for the second calendar quarter covering April through June;

3. November 30th – for the third calendar quarter covering July through September; and

4. February 28th (29th in a leap year) – for the fourth calendar quarter covering October through December.

(B) *Annual Compliance Reports.* By April 30th of 2011, a regulated party must submit an annual report for calendar year 2010. By

April 30th of 2012 and each year thereafter, a regulated party must provide an annual compliance report for the prior calendar year.

(2) *How ~~T~~to Report.* A regulated party must submit an annual compliance and quarterly progress report using the online LCFS Reporting Tool (LRT), an interactive, secured internet web-based system. The LRT is available at: www.arb.ca.gov/lcfsrt.~~by using an interactive, secured internet web-based form~~.

The regulated party is solely responsible for ensuring that the Executive Officer receives its progress and compliance reports by the dates specified in section 95484(b~~e~~)(1). The Executive Officer shall not be responsible for failure of electronically submitted reports to be transmitted to the Executive Officer. The report must contain a statement attesting to the report's accuracy and validity. The Executive Officer shall not deem an electronically submitted report to be valid unless the report is accompanied by a digital signature that meets the requirements of title 2, California Code of Regulations, section 22000 et seq.

(3) *General and Specific Reporting Requirements for Quarterly Progress Reports.* For each of its transportation fuels, a regulated party must submit a quarterly progress report that contains the information specified in Table 3 and meets the additional specific requirements set forth below:

(A) *Specific Quarterly Reporting Requirements (Except As Otherwise Noted) for Gasoline and Diesel Fuel.*

1. For each transfer of gasoline or diesel fuel that results in a transfer of the compliance obligation or retention of the compliance obligation by written contract, the regulated party must provide to the Executive Officer, within 10 business days of a request, the product transfer document containing the information identified in section 95484(a)(1)(B), (a)(1)(C), (a)(1)(D), (a)(2)(B), (a)(2)(C), (a)(4)(B), or (a)(4)(C), ~~(a)(5)(D), or (a)(7)(C),~~ whichever applies.

2. The carbon intensity value of each blendstock determined pursuant to section 95486.

3. The volume of each blendstock (in gal) per compliance period. For purposes of this provision only, except as provided in section 95484(b)(4)(B), the regulated party may report the total volume of each blendstock aggregated for each distinct carbon intensity value (e.g., X gallons of blendstock with A gCO2e/MJ, Y gallons of blendstock with B

gCO2e/MJ, etc.). ~~Further, if the regulated party is subject to section 95486(b)(2)(A)2. for fuel or blendstock derived from high carbon-intensity crude oil (HCICO), regulated party must report the E_{HCICO}^{XD} per compliance period, where E_{HCICO}^{XD} is defined in section 95486(b)(2)(A)2.a.~~

4. The volume of each petroleum blendstock, petroleum intermediate, and petroleum finished fuel (in gal) imported into California during each quarter. ~~All Renewable Identification Numbers (RINs) that are retired for facilities in California.~~

(B) *Specific Quarterly Reporting Requirements for Natural Gas (including CNG, LNG, and Biogas).* For each private access, public access, or home fueling facility to which the regulated party supplies CNG, LNG or biogas as a transportation fuel:

1. For CNG, the regulated party must report the amount of fuel dispensed (in scf) per compliance period for all light/medium-duty vehicles (LDV & MDV) and heavy-duty vehicles (HDV). For LNG, the regulated party must report the amount of fuel dispensed (in gal) per compliance period for all LDV & MDV and HDV;

2. Except as provided for in section 95484(b~~c~~)(3)(B)3., the regulated party must report the amount of fuel dispensed based on the use of separate fuel dispenser meters at each fuel dispenser;

3. In lieu of using separate meters at each fuel dispenser, the regulated party may report the amount of fuel dispensed at each facility using any other method that the regulated party demonstrates to the Executive Officer's satisfaction as being equivalent to or better than the use of separate fuel meters at each fuel dispenser in each fueling facility;

4. The carbon intensity value of the CNG, LNG, or biogas determined pursuant to section 95486.

(C) *Specific Quarterly Reporting Requirements for Electricity.* For electricity used as a transportation fuel, a regulated party must also submit the following:

1. For residential charging stations, the total electricity dispensed (in kWh) to all vehicles at each residence based on direct metering, which distinguishes electricity delivered

for transportation use. Before January 1, 2015, "based on direct metering" means either:

a. the use of direct metering (~~also called~~ either submetering or separate metering) to measure the electricity directly dispensed to all vehicles at each residential charging station; or

b. for households and residences only where direct metering has not been installed, the regulated party may report the total electricity dispensed at each residential charging station using another method that the regulated party demonstrates to the Executive Officer's satisfaction is substantially similar to the use of direct metering under section 95484(b~~c~~)(3)(C)1.a.~~-~~

Effective January 1, 2015, "based on direct metering" means only the use of direct metering as specified in section 95484(b~~c~~)(3)(C)1.a. above;

2. For each public access charging facility, the amount of electricity dispensed (in kW-hr);

3. For each fleet charging facility, the amount of fuel dispensed (in kW-hr).

4. For each workplace private access charging facility, the amount of electricity dispensed (in kW-hr).

~~4.~~5. The carbon intensity value of the electricity determined pursuant to section 95486.

(D) *Specific Quarterly Reporting Requirements for Hydrogen or a Hydrogen Blend.* For hydrogen or a hydrogen blend used as a transportation fuel, a regulated party must also submit the following:

1. For each private access fueling facility, the amount of fuel dispensed (in kg) by vehicle weight category: LDV & MDV and HDV.

2. For each public access filling station, the amount of fuel dispensed (in kg) by vehicle weight category: LDV & MDV and HDV.

3. The carbon intensity value of the hydrogen or the blendstocks used to produce the hydrogen blend determined

pursuant to section 95486.

(4) *General and Specific Reporting Requirements for Annual Compliance Reports.* A regulated party must submit an annual compliance report that meets, at minimum, the general and specific requirements specified in section 95484(be)(3) above and the additional requirements set forth below:

(A) A regulated party must report the following:

1. The total credits and deficits generated by the regulated party in the current compliance period, calculated as per equations in section 95485(a);

2. Any credits carried over from the previous compliance period;

3. Any deficits carried over from the previous compliance period;

4. The total credits acquired from another party and identify the party from whom the credits were acquired;

5. The total credits sold or otherwise transferred and identify each party to whom those credits were transferred;

6. The total credits retired within the LCFS; and

7. The total credits exported to programs outside the LCFS.

(B) A producer of CARBOB, gasoline or diesel fuel must report, for each its refineries, the data listed below:

1. volume (in gal) and marketable crude oil name (MCON) of all crude oil supplied to the refinery in the current compliance period that was produced in California using thermal enhanced oil recovery (TEOR) methods;

2. volume (in gal) and MCON of all crude oil supplied to the refinery in the current compliance period that was produced in California using non-TEOR methods; and

3. volume (in gal), MCON, and Country (or State) of origin for all crude oil supplied to the refinery in the current compliance period that was imported.

(5) *Significant Figures*. The regulated party must report the following quantities as specified below:

(A) carbon intensity, expressed to the same number of significant figures as shown in the carbon intensity lookup table (Method 1);

(B) credits, expressed to the nearest whole metric ton CO2 equivalent;

(C) fuel volume in units specified in section 95484(b)(3) and (b)(4), expressed to the nearest whole unit applicable for that quantity; ~~expressed as follows:~~

~~1. a fuel volume greater than 1 million gasoline gallon equivalent (gge) must be expressed to the nearest 10,000 gge;~~

~~2. a fuel volume between 100,000 gge and 1 million gge, inclusive, must be expressed to the nearest 1,000 gge;~~

~~3. a fuel volume between 10,000 gge and 99,999 gge, inclusive, must be expressed to the nearest 100 gge; and~~

~~4. a fuel volume less than 9,999 gge must be expressed to the nearest 10 gge.~~

(D) any other quantity not specified in section 95484(b~~c~~)(5)(A) to 95484(b~~c~~)(5)(C) must be expressed to the nearest whole unit applicable for that quantity.

~~(E) *Rounding Intermediate Calculated Values.* A regulated party must use one of the following procedures for rounding intermediate calculated values for fuel quantity dispensed, blended, or sold in California; calculated carbon intensity values; calculated LCFS credits and deficits; and any other calculated or measured quantity required to be used, recorded, maintained, provided, or reported for the purpose determining a reported value under the LCFS regulation (17 CCR section 95480 et seq.):~~

~~1. ASTM E 29-08 (October 1, 2008), *Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications*, which is incorporated herein by reference; or~~

~~2. Any other practice that the regulated party has demonstrated to the Executive Officer's written satisfaction provides equivalent or better results as compared with the method specified in subsection 95484(c)(5)(E)1. above.~~

Table 3. Summary Checklist of Quarterly and Annual Reporting Requirements.

Parameters to Report	Gasoline & Diesel fuel	CNG & LNG	Electricity	Hydrogen Or Hydrogen Blends	Neat Ethanol or Biomass-Based Diesel Fuels
Company or organization name	x	x	x	x	x
Reporting period	x	x	x	x	x
~~Type of fuel~~ Fuel pathway code	x	x	x	x	x
~~Blended fuel (yes/no)~~ Transaction type	x	x	x	x	x
~~If yes, number of blendstocks~~ Transaction date	x	x	~~n/a~~ x	x	x
~~Type(s) of blendstock~~ Business Partner	x	x	~~n/a~~ x	x	x
~~RIN numbers~~ Biofuel Production Facility	x	~~n/a~~ x	n/a	~~n/a~~ x	x
~~Blendstock feedstock~~ Physical pathway code	x	x	~~n/a~~ x	x	x
~~Feedstock origin~~ Aggregation	x	x	~~n/a~~	x	x
~~Production process~~ Application / EER	x	x	x~~*~~	x	x
Volume ~~Amount~~ of each blendstock (~~MJ~~Gal)	x	~~X~~ n/a	n/a	~~X~~ n/a	~~X~~ n/a
~~**The CI of the fuel or blendstock ($CI^{XD}_{reported}$)~~ Volume of each petroleum blendstock, petroleum intermediate, and petroleum finished fuel imported into California (gal)	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~
Amount of each fuel used as gasoline replacement (MJ)	x	x	x	x	x
Amount of each fuel used as diesel fuel replacement (MJ)	x	x	x	x	x
**Credits/deficits generated per quarter (MT)	x	x	x	x	x
For Annual Reporting (in addition to the items above)					
**Credits and Deficits generated per year (MT)	x	x	x	x	x
**Credits/deficits carried over from the previous year (MT), if any	x	x	x	x	x
**Credits acquired from another party (MT), if any	x	x	x	x	x
**Credits sold to another party (MT), if any	x	x	x	x	x
**Credits exported to another program (MT), if any	x	x	x	x	x
**Credits retired within LCFS (MT) , if any	x	x	x	x	x
Volume (gal) and MCON of crude oil refining in California production facility	x	n/a	n/a	n/a	n/a

~~* Optional. However if qualifying the CI value of electricity, under method 2A, that is different from CA Marginal electricity value, production process must be reported.~~ ***Value will be calculated or stored in the compliance tool.*

(~~d~~c) *Recordkeeping and Auditing.*

(1) A regulated party must retain all of the following records for at least 3 years and must provide such records within 20 days of a written request received from the Executive Officer or his/her designee before expiration of the period during which the records are required to be retained:

(A) product transfer documents;

(B) copies of all data and reports submitted to the Executive Officer;

(C) records related to each fuel transaction; and

(D) records used for compliance or credit calculations.

(2) *Evidence of Physical Pathway.* A regulated party may not generate credits pursuant to section 95485 unless it has demonstrated or provided a demonstration to the Executive Officer that a physical pathway exists, for each of the transportation fuels and blendstocks for which it is responsible under the LCFS regulation, and that each physical pathway has been approved by the Executive Officer pursuant to this section 95484(c~~d~~)(2). For purposes of this provision, "demonstrated" and "demonstration" includes any combination of either (i) a showing by the regulated party using its own documentation; or (ii) a showing by the regulated party that incorporates by reference documentation voluntarily submitted by another regulated party or a non-regulated party fuel producer, provided the documentation applies to and accurately represents the regulated party's transportation fuel or blendstock;

"Physical pathway" means the applicable combination of actual fuel delivery methods, such as truck routes, rail lines, gas/liquid pipelines, electricity transmission lines, and any other fuel distribution methods, through which the regulated party reasonably expects the fuel to be transported under contract from the entity that generated or produced the fuel, to any intermediate entities, and ending at the fuel blender, producer, importer, or provider in California.

The Executive Officer shall not approve a physical pathway demonstration unless the demonstration meets the following requirements:

(A) *Initial Demonstration of Delivery Methods.* The regulated party must provide an initial demonstration of the delivery methods comprising the physical pathway for each of the regulated party's fuels. The initial demonstration must include documentation in sufficient detail for the Executive Officer to verify the existence of the physical pathway's delivery methods.

The documentation must include a map(s) that shows the truck/rail lines or routes, pipelines, transmission lines, and other delivery methods (segments) that, together, comprise the physical pathway. If more than one company is involved in the delivery, each segment on the map must be linked to a specific company that is expected to transport the fuel through each segment of the physical pathway. The regulated party must provide the contact information for each such company, including the contact name, mailing address, phone number, and company name.

(B) *Initial Demonstration of Fuel Introduced Into the Physical Pathway.*

For each blendstock or alternative fuel for which LCFS credit is being claimed, the regulated party must provide evidence showing that a specific volume of that blendstock or fuel was introduced by its provider into the physical pathway identified in section 95484(c~~d~~)(2)(A). The evidence may include, but is not limited to, a written purchase contract or transfer document for the volume of blendstock or alternative fuel that was introduced or otherwise delivered into the physical pathway.

(C) *Initial Demonstration of Fuel Removed From the Physical Pathway.* For each specific volume of blendstock or alternative fuel identified in section 95484(c~~d~~)(2)(B), the regulated party must provide evidence showing that the same volume of blendstock or fuel was removed from the physical pathway in California by the regulated party and provided for transportation use in California. The evidence may include, but is not limited to, a written sales contract or transfer document for the volume of blendstock or alternative fuel that was removed from or otherwise extracted out of the physical pathway in California.

(D) *Subsequent Demonstration of Physical Pathway.* Once the Executive Officer has approved the initial demonstrations specified in section 95484(c~~d~~)(2)(A) through (C), the regulated party does not need to resubmit the demonstrations for Executive Officer approval in any subsequent year, unless there is a material change to any of the information submitted under section 95484(c~~d~~)(2)(A) through (C).

"Material change" means any change to the initially submitted information involving a change in the basic mode of transport for the fuel. For example, if an approved pathway using rail transport is changed to add to or replace the rail with truck or ship transport, that change would be deemed a material change.

If there is a material change to an approved physical pathway, the regulated party must notify the Executive Officer in writing within 30 business days after the material change has occurred, and the approved physical pathway shall become invalid 30 business days after the material change has occurred. A regulated party that wishes to generate credits after an approved physical pathway has become invalid must submit for Executive Officer approval a new initial demonstrations, pursuant to section 95484(cd)(2)(A) through (C), which includes the material change(s) to the physical pathway.

(E) *Submittal and Review of and Final Action on Submitted Demonstrations*

1. The regulated party may not receive credit for any fuel or blendstock until the Executive Officer has approved the regulated party's submitted physical-pathway demonstration pursuant to section 95484(cd)(2)(A) through (C). Upon receiving Executive Officer approval of a physical pathway, the regulated party may claim LCFS credits based on that pathway that are calculated retroactive to the date when the regulated party's use of the pathway began but no earlier than January 1, 2011.

2. Within 15 business days of receipt of a physical pathway demonstration, the Executive Officer shall determine if the physical pathway demonstration is complete and notify the regulated party accordingly. If incomplete, the Executive Officer shall notify the regulated party and identify the information needed to complete the demonstrations identified in section 95484(cd)(2)(A) through (C). Once the Executive Officer deems the demonstrations to be complete, the Executive Officer shall, within 15 business days, take final action to either approve or disapprove a physical pathway demonstration and notify the regulated party of the final action.

(3) *Data Verification.* All data and calculations submitted by a regulated party for demonstrating compliance or claiming credit are subject to verification by the Executive Officer or a third party approved by the Executive Officer.

(4) *Access To Facility And Data.* Pursuant to H&S section 41510, if necessary under the circumstances, after obtaining a warrant, the Executive Officer has the right of entry to any premises owned, operated, used, leased, or rented by an owner or operator of a facility in order to inspect and copy records relevant to the determination of compliance.

(5) The Executive Officer shall post on the ARB's website at http://www.arb.ca.gov/fuels/lcfs/lcfs.htm the names and contact information for each regulated party and non-regulated party fuel producer that has obtained Executive Officer approval of its physical pathway demonstration; the transportation fuels and blendstocks covered by such Executive Officer approval; and details of the approved physical pathways disclosed in accordance with 17 CCR §§ 91000 – 91022 and the California Public Records Act (Government Code section 6250 et seq.).

(~~e~~d) *Violations and Penalties.*

(1) Pursuant to H&S section 38580 (part of the California Global Warming Solutions Act of 2006), any violation of the provisions of the LCFS regulation (title 17, CCR, § 95480 et seq.) may be enjoined pursuant to H&S section 41513, and the violation is subject to those penalties set forth in Article 3 (commencing with § 42400) of Chapter 4 of Part 4 of, and Chapter 1.5 (commencing with § 43025) of Part 5 of, Division 26.

(2) Pursuant to H&S section 38580, any violation of the provisions of the LCFS regulation shall be deemed to result in an emission of an air contaminant for the purposes of the penalty provisions of Article 3 (commencing with § 42400) of Chapter 4 of Part 4 of, and Chapter 1.5 (commencing with § 43025) of Part 5 of, Division 26.

(3) Any violation of the provisions of the LCFS regulation shall be subject to all other penalties and remedies permitted under State law.

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference ~~cited~~: Sections 38501, 38510, 38560, 38560.5, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

Section 95485. LCFS Credits and Deficits.

(a) *Calculation of Credits and Deficits Generated.* A regulated party must calculate the amount of credits and deficits generated in a compliance period for an LCFS fuel using the methods specified below in section 95485(a)(1) through (3). The total credits and deficits generated are used in determining the overall credit balance for a compliance period, pursuant to section 95488(a) ~~95484(b)~~. All credits and deficits are denominated in units of metric tons (MT) of carbon dioxide equivalent.

(1) All LCFS fuel quantities used for credit calculation must be in energy units of megajoules (MJ).

Fuel quantities denominated in other units, such as those shown in Table 4, must be converted to MJ by multiplying by the corresponding energy density[1]:

Table 4. Energy Densities of LCFS Fuels and Blendstocks.

Fuel (units)	Energy Density
CARBOB (gal)	119.53 (MJ/gal)
CaRFG (gal)	115.63 (MJ/gal)
Diesel fuel (gal)	134.47 (MJ/gal)
CNG (scf)	0.98 (MJ/scf)
LNG (gal)	78.83 (MJ/gal)
Electricity (KWh)	3.60 (MJ/KWh)
Hydrogen (kg)	120.00 (MJ/kg)
Anhydrous Ethanol (gal)	80.53 (MJ/gal)
Neat Biomass-based diesel (gal)	126.13 (MJ/gal)

(2) The total credits and deficits generated by a regulated party in a compliance period must be calculated as follows:

$$Credits^{Gen}(MT) = \sum_{i}^{n} Credits_i^{gasoline} + \sum_{i}^{n} Credits_i^{diesel}$$

$$Deficits^{Gen}(MT) = \sum_{i}^{n} Deficits_i^{gasoline} + \sum_{i}^{n} Deficits_i^{diesel}$$

where:

[1] Energy density factors are based on the lower heating values of fuels in CA-GREET using BTU to MJ conversion of 1055 J/Btu.

$Credits^{Gen}$ represents the total credits (a zero or positive value), in units of metric tons ("MT"), for all fuels and blendstocks determined from the credits generated under either or both of the gasoline and diesel fuel average carbon intensity requirements;

$Deficits^{Gen}$ represents the total deficits (a negative value), in units of metric tons ("MT"), for all fuels and blendstocks determined from the deficits generated under either or both of the gasoline and diesel fuel average carbon intensity requirements;

i is the finished fuel or blendstock index; and

n is the total number of finished fuels and blendstocks provided by a regulated party in a compliance period.

(3) LCFS credits or deficits for each fuel or blendstock supplied by a regulated party must be calculated according to the following equations:

(A) $$Credits_i^{XD} / Deficits_i^{XD}(MT) = \left(CI_{s\tan dard}^{XD} - CI_{reported}^{XD}\right) \times E_{displaced}^{XD} \times C$$

where:

$Credits_i^{XD} / Deficits_i^{XD}$ *(MT)* is either the amount of LCFS credits generated (a zero or positive value), or deficits incurred (a negative value), in metric tons, by a fuel or blendstock under the average carbon intensity requirement for gasoline (*XD*="gasoline") or diesel (*XD*="diesel");

$CI_{s\tan dard}^{XD}$ is the average carbon intensity requirement of either gasoline (*XD*= "gasoline") or diesel fuel (*XD*= "diesel") for a given year as provided in section 95482 (b) and (c), respectively;

$CI_{reported}^{XD}$ is the adjusted carbon intensity value of a fuel or blendstock, in gCO2E/MJ, calculated pursuant to section 95485(a)(3)(B);

$E_{displaced}^{XD}$ is the total amount of gasoline (*XD*="gasoline") or diesel (*XD*="diesel") fuel energy displaced, in MJ, by the use of an alternative fuel, calculated pursuant to section 95485(a)(3)(C); and

C is a factor used to convert credits to units of metric tons from gCO2E and has the value of:

$$C = 1.0x10^{-6}\frac{(MT)}{(gCO_2E)}$$

(B) $$CI_{reported}^{XD} = \frac{CI_i}{EER^{XD}}$$

where:

CI_i is the carbon intensity of the fuel or blendstock, measured in gCO2E/MJ, determined by a California-modified GREET pathway or a custom pathway and incorporates a land use modifier (if applicable); and

EER^{XD} is the dimensionless Energy Economy Ratio (EER) relative to gasoline (*XD*="gasoline") or diesel fuel (*XD*= "diesel") as listed in Table 5. For a vehicle-fuel combination not listed in Table 5, EER^{XD} =1 must be used.

(C) $$E_{displaced}^{XD} = E_i \times EER^{XD}$$

where:

E_i is the energy of the fuel or blendstock, in MJ, determined from the energy density conversion factors in Table 4.

Table 5. EER Values for Fuels Used in Light- and Medium-Duty, and Heavy-Duty Applications.

Light/Medium-Duty Applications (Fuels used as gasoline replacement)		**Heavy-Duty/Off-Road Applications (Fuels used as diesel replacement)**	
Fuel/Vehicle Combination	**EER Values Relative to Gasoline**	**Fuel/Vehicle Combination**	**EER Values Relative to Diesel**
Gasoline (incl. E6 and E10) or E85 (and other ethanol blends)	1.0	Diesel fuel or Biomass-based diesel blends	1.0
CNG / ICEV	1.0	CNG or LNG (Spark-Ignition Engines) CNG or LNG (Compression-Ignition Engines)	0.9 1.0
Electricity / BEV, or PHEV	~~3.0~~ 3.4	Electricity / BEV, or PHEV*	2.7
H2 / FCV	~~2.3~~ 2.5	H2 / FCV	1.9

*BEV = battery electric vehicle, PHEV= plug-in hybrid electric vehicle, FCV = fuel cell vehicle, ICEV = internal combustion engine vehicle.

(b) *Credit Generation Frequency.* Beginning 2011 and every year afterwards, a regulated party may generate credits quarterly.

(c) *Credit Acquisition, Banking, Borrowing, and Trading.*

(1) A regulated party may:

(A) retain LCFS credits without expiration for use within the LCFS market;

(B) acquire or transfer LCFS credits. A third-party entity, which is not a regulated party or acting on behalf of a regulated party, may not purchase, sell, or trade LCFS credits, except as otherwise specified in (C) below; and

(C) export credits for compliance with other greenhouse gas reduction initiatives including, but not limited to, programs established pursuant to AB 32 (Nunez, Stats. 2006, ch. 488), subject to the authorities and requirements of those programs.

(2) A regulated party may not:

(A) use credits in the LCFS program that are generated outside the LCFS program, including, but not limited to, credits generated in other AB 32 programs.

(B) borrow or use credits from anticipated future carbon intensity reductions.

(C) generate LCFS credits from fuels exempted from the LCFS under section 95480.1(d) or are otherwise not one of the transportation fuels specified in section 95480.1(a).

(d) *Nature of Credits.* LCFS credits shall not constitute instruments, securities, or any other form of property.

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference ~~cited~~: Sections 38501, 38510, 38560, 38560.5, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

Section 95486. Determination of Carbon Intensity Values.

(a) *Selection of Method.*

(1) A regulated party for CARBOB, gasoline, or diesel fuel must use Method 1, as set forth in section 95486(b)(2)(A), to determine the carbon intensity of each fuel or blendstock for which it is the regulated party.

(2) A regulated party for any other fuel or blendstock must use Method 1, as set forth in section 95486(b)(2)(B), to determine the carbon intensity of each ~~fuel for~~ of the regulated party's fuels, unless the regulated party is approved for using either Method 2A or Method 2B, as provided in section 95486(c) or (d). A regulated party may use Method 1 to determine the carbon intensity of each fuel he or she sells in California if the Carbon Intensity Lookup Table contains fuel pathways that closely correspond to the regulated party's fuel pathways. A regulated party's pathway corresponds closely with a Lookup Table pathway when it is consistent with Lookup Table pathway in the following areas:

(A) Feedstocks used to produce the fuel.

(B) Fuel and feedstock production technology.

(C) Geographic regions in which feedstocks and finished fuel are produced.

(D) The modes used to transport feedstocks and finished fuel and the transport distances involved.

(E) The types and amounts of thermal and electrical energy consumed in both feedstock and finished fuel production. This applies both to the energy consumed in the production process, but also to the upstream energy consumed (e.g., fuels used to generate electricity; energy consumed to produce natural gas, etc.).

(F) The CI of the regulated party's product must be lower than or equal to the Lookup Table pathway CI. If the Executive Officer determines that the regulated party's product has an actual CI that is likely to be higher than the Lookup Table pathway CI, the regulated party shall prepare a Method 2B application for a pathway-specific CI.

(3) A regulated party's choice of carbon intensity value under Method 1 in either (a)(1) or (a)(2) above is subject in all cases to Executive Officer approval, as specified in this provision.

(A) If the Executive Officer has reason to believe that the regulated party's choice is not the value that most closely corresponds to its fuel or blendstock, the Executive Officer shall choose a carbon intensity value, in the Carbon Intensity Lookup Tables for the fuel or blendstock, which the Executive Officer determines is the one that most closely corresponds to the pathway for that fuel or blendstock.

(B) If the Executive Officer has reason to believe that the Carbon Intensity Lookup Table does not contain a fuel pathway that closely corresponds with the regulated party's fuel pathway, as specified in 95486(a)(2), the regulated party will not be allowed to use Method 1, and the Executive Officer may permit the regulated party to use a carbon intensity value pursuant to subsection (5) below for determining the regulated party's fuel carbon intensity.

(C) The Executive Officer shall provide the rationale for his/her determination to the regulated party in writing within 10 business days of the determination. The regulated party shall be responsible for reconciling any deficits, in accordance with section 95485, that were incurred as a result of its initial choice of carbon intensity values. In determining whether a carbon intensity value that is different than the one chosen by the regulated party is more appropriate, the Executive Officer may consider any information submitted by the regulated party in support of its choice of carbon intensity value.

(4) A regulated party who has purchased ethanol or biomass-based diesel but is unable to determine the carbon intensity of that fuel may petition the Executive Officer to use a default carbon intensity value. The Executive Officer may grant a regulated party permission to use a default value only if the regulated party demonstrates that the use of Methods 1 and 2 are not available for the volume of fuel and that the fuel cannot be sold outside of California. The term "unable to be determined" is defined, for purposes of this provision, as follows:

(A) The production facility cannot be identified, or

(B) The production facility is known, but it has neither been registered through the LCFS Biofuel Producer Registration process nor received a pathway carbon intensity through the Method 2A or 2B process.

(5) Pursuant to Paragraph (4) above, the Executive Officer may grant regulated parties permission to use the following carbon intensities for ethanol and biomass-based diesel, respectively:

(A) For ethanol, the Midwest Average ethanol carbon intensity of 99.40 gCO_2e/MJ from Table 6 in Section 95486(b), and

(B) For biomass-based diesel, the ULSD carbon intensity value of 96.36 from Table 7 in Section 95486(b).

(b) *Method 1 – ARB Lookup Table.*

(1) To generate carbon intensity values, ARB uses the California-modified GREET (CA-GREET) model ~~(~~version 1.8b~~,~~ (February 2009, updated December 2009~~)~~), which is incorporated herein by reference, and a land-use change (LUC) modifier (when applicable). The CA-GREET model is available for downloading on ARB's website at http://www.arb.ca.gov/fuels/lcfs/lcfs.htm.

The Carbon-Intensity Lookup Tables, shown below, specify the carbon intensity values for the enumerated fuel pathways that are described in the following supporting documents, all of which are incorporated herein by reference:

(A) Stationary Source Division, Air Resources Board (February 27, 2009, v.2.1), "Detailed California-Modified GREET Pathway for California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB) from Average Crude Refined in California;"

(A.1) Supplement (October 28, 2011) to Stationary Source Division, Air Resources Board (February 27, 2009, v.2.1), "Detailed California-Modified GREET Pathway for California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB) from Average Crude Refined in California;"

(B) Stationary Source Division, Air Resources Board (February 27, 2009, v.2.1), "Detailed California-Modified GREET Pathway for California Reformulated Gasoline (CaRFG);"

(B.1) Supplement (October 28, 2011) to Stationary Source Division, Air Resources Board (February 28, 2009, v.2.1), "Detailed California-Modified GREET Pathway for California Reformulated Gasoline (CaRFG);"

(C) Stationary Source Division, Air Resources Board (February 28, 2009, v.2.1), "Detailed California-Modified GREET Pathway for Ultra Low Sulfur Diesel (ULSD) from Average Crude Refined in California;"

(C.1) Supplement October 28, 2011) to Stationary Source Division, Air Resources Board (February 28, 2009, v.2.1), "Detailed California-

Modified GREET Pathway for Ultra Low Sulfur Diesel (ULSD) from Average Crude Refined in California;"

(D) Stationary Source Division, Air Resources Board (February 27, 2009, v.2.1), "Detailed California-Modified GREET Pathway for California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB) from Average Crude Refined in California;"

(E) Stationary Source Division, Air Resources Board (February 27, 2009, v.2.1), "Detailed California-Modified GREET Pathway for Corn Ethanol;"

(F) Stationary Source Division, Air Resources Board (February 27, 2009, v.2.1), "Detailed California-Modified GREET Pathway for Brazilian Sugarcane Ethanol;"

(G) Stationary Source Division, Air Resources Board (February 28, 2009, v.2.1), "Detailed California-Modified GREET Pathway for Compressed Natural Gas (CNG) from North American Natural Gas;"

(H) Stationary Source Division, Air Resources Board (February 28, 2009, v.2.1), "Detailed California-Modified GREET Pathway for Compressed Natural Gas (CNG) from Landfill Gas;"

(I) Stationary Source Division, Air Resources Board (February 27, 2009, v.2.1), "Detailed California-Modified GREET Pathway for California Average and Marginal Electricity;"

(J) Stationary Source Division, Air Resources Board (February 27, 2009, v.2.1), "Detailed California-Modified GREET Pathway for Compressed Gaseous Hydrogen from North American Natural Gas;"

(K) Stationary Source Division, Air Resources Board (September 23, 2009, v.2.0), "Detailed California-Modified GREET Pathways for Liquefied Natural Gas (LNG) from North American and Remote Natural Gas Sources;"

(L) Stationary Source Division, Air Resources Board (September 23, 2009, v.2.0), "Detailed California-Modified GREET Pathway for Liquefied Natural Gas (LNG) from Landfill Gas (LFG);"

(M) Stationary Source Division, Air Resources Board (July 20, 2009, v.1.0), "Detailed California-Modified GREET Pathway for Compressed Natural Gas (CNG) from Dairy Digester Biogas;"

(N) Stationary Source Division, Air Resources Board (September 23, 2009, v.2.0), "Detailed California-Modified GREET Pathway for Liquefied Natural Gas (LNG) from Dairy Digester Biogas;"

(O) Stationary Source Division, Air Resources Board (September 23, 2009, v.2.0), "Detailed California-Modified GREET Pathway for Biodiesel from Used Cooking Oil;"

(P) Stationary Source Division, Air Resources Board (September 23, 2009, v.2.0), "Detailed California-Modified GREET Pathway for Co-Processed Renewable Diesel from Tallow (U.S. Sourced);"

(Q) Stationary Source Division, Air Resources Board (September 23, 2009, v.2.3), "Detailed California-Modified GREET Pathways for Brazilian Sugarcane Ethanol: Average Brazilian Ethanol, With Mechanized Harvesting and Electricity Co-product Credit, With Electricity Co-product Credit;"

(R) Stationary Source Division, Air Resources Board (December 14, 2009, v.3.0), "Detailed California-Modified GREET Pathway for Biodiesel from Midwest Soybeans; and

(S) Stationary Source Division, Air Resources Board (December 14, 2009, v.3.0), "Detailed California-Modified GREET Pathway for Renewable Diesel from Midwest Soybeans.

Table 6. Carbon Intensity Lookup Table for Gasoline and Fuels that Substitute for Gasoline.

Fuel	Pathway Description	Carbon Intensity Values (gCO_2e/MJ)		
		Direct Emissions	Land Use or Other Indirect Effect	Total
CARBOB ~~Gasoline~~	CARBOB – based on the average crude oil delivered to California refineries and average California refinery efficiencies	97.51 ~~95.86~~	0	97.51 ~~95.86~~
	Baseline Crude Average – based on production and transport of the crude oil used as petroleum feedstock for California refineries during the baseline calendar year, 2009	9.72	0	9.72
	Annual Crude Average – based on production and transport of the crude oil used as petroleum feedstock for California refineries during a specified calendar year*	See section 95486(b)(2)(A)1.	0	See section 95486(b)(2)(A)1.
Ethanol from Corn	Midwest average; 80% Dry Mill; 20% Wet Mill; Dry DGS	69.40	30	99.40
	California average; 80% Midwest Average; 20% California; Dry Mill; Wet DGS; NG	65.66	30	95.66
	California; Dry Mill; Wet DGS; NG	50.70	30	80.70
	Midwest; Dry Mill; Dry DGS, NG	68.40	30	98.40
	Midwest; Wet Mill, 60% NG, 40% coal	75.10	30	105.10
	Midwest; Wet Mill, 100% NG	64.52	30	94.52
	Midwest; Wet Mill, 100% coal	90.99	30	120.99
	Midwest; Dry Mill; Wet DGS	60.10	30	90.10
	California; Dry Mill; Dry DGS, NG	58.90	30	88.90
	Midwest; Dry Mill; Dry DGS; 80% NG; 20% Biomass	63.60	30	93.60
	Midwest; Dry Mill; Wet DGS; 80% NG; 20% Biomass	56.80	30	86.80
	California; Dry Mill; Dry DGS; 80% NG; 20% Biomass	54.20	30	84.20
	California; Dry Mill; Wet DGS; 80% NG; 20% Biomass	47.44	30	77.44
Ethanol from Sugarcane	Brazilian sugarcane using average production processes	27.40	46	73.40
	Brazilian sugarcane with average production process, mechanized harvesting and electricity co-product credit	12.40	46	58.40
	Brazilian sugarcane with average production process and electricity co-product credit	20.40	46	66.40

Compressed Natural Gas	California NG via pipeline; compressed in CA	67.70	0	67.70
	North American NG delivered via pipeline; compressed in CA	68.00	0	68.00
	Landfill gas (bio-methane) cleaned up to pipeline quality NG; compressed in CA	11.26	0	11.26
	Dairy Digester Biogas to CNG	13.45	0	13.45
Liquefied Natural Gas	North American NG delivered via pipeline; liquefied in CA using liquefaction with 80% efficiency	83.13	0	83.13
	North American NG delivered via pipeline; liquefied in CA using liquefaction with 90% efficiency	72.38	0	72.38
	Overseas-sourced LNG delivered as LNG to Baja; re-gasified then re-liquefied in CA using liquefaction with 80% efficiency	93.37	0	93.37
	Overseas-sourced LNG delivered as LNG to CA; re-gasified then re-liquefied in CA using liquefaction with 90% efficiency	82.62	0	82.62
	Overseas-sourced LNG delivered as LNG to CA; no re-gasification or re-liquefaction in CA	77.50	0	77.50
	Landfill Gas (bio-methane) to LNG liquefied in CA using liquefaction with 80% efficiency	26.31	0	26.31
	Landfill Gas (bio-methane) to LNG liquefied in CA using liquefaction with 90% efficiency	15.56	0	15.56
	Dairy Digester Biogas to LNG liquefied in CA using liquefaction with 80% efficiency	28.53	0	28.53
	Dairy Digester Biogas to LNG liquefied in CA using liquefaction with 90% efficiency	17.78	0	17.78
Electricity	California average electricity mix	124.10	0	124.10
	California marginal electricity mix of natural gas and renewable energy sources	104.71	0	104.71
Hydrogen	Compressed H_2 from central reforming of NG (includes liquefaction and re-gasification steps)	142.20	0	142.20
	Liquid H_2 from central reforming of NG	133.00	0	133.00
	Compressed H_2 from central reforming of NG (no liquefaction and re-gasification steps)	98.80	0	98.80
	Compressed H_2 from on-site reforming of NG	98.30	0	98.30
	Compressed H_2 from on-site reforming with renewable feedstocks	76.10	0	76.10

* The annual crude Average CI value will be first calculated for calendar year 2012 and subsequently updated annually using data for crude oil supplied to California refineries during the specified calendar year.

Table 7. Carbon Intensity Lookup Table for Diesel and Fuels that Substitute for Diesel.

Fuel	Pathway Description	Carbon Intensity Values (gCO_2e/MJ)		
		Direct Emissions	Land Use or Other Indirect Effect	Total
Diesel	ULSD – based on the average crude oil delivered to California refineries and average California refinery efficiencies	96.3694.71	0	96.3694.71
	Baseline Crude Average – based on production and transport of the crude oil used as petroleum feedstock for California refineries during the baseline calendar year, 2009	9.72	0	9.72
	Annual Crude Average – based on production and transport of the crude oil used as petroleum feedstock for California refineries during a specified calendar year**	See section 95486(b)(2)(A)1.	0	See section 95486(b)(2)(A)1.
Biodiesel	Conversion of waste oils (Used Cooking Oil) to biodiesel (fatty acid methyl esters -FAME) where "cooking" is required	15.84	0	15.84
	Conversion of waste oils (Used Cooking Oil) to biodiesel (fatty acid methyl esters -FAME) where "cooking" is not required	11.76	0	11.76
	Conversion of Midwest soybeans to biodiesel (fatty acid methyl esters -FAME)	21.25	62	83.25
Renewable Diesel	Conversion of tallow to renewable diesel using higher energy use for rendering	39.33	0	39.33
	Conversion of tallow to renewable diesel using lower energy use for rendering	19.65	0	19.65
	Conversion of Midwest soybeans to renewable diesel	20.16	62	82.16
Compressed Natural Gas	California NG via pipeline; compressed in CA	67.70	0	67.70
	North American NG delivered via pipeline; compressed in CA	68.00	0	68.00
	Landfill gas (bio-methane) cleaned up to pipeline quality NG; compressed in CA	11.26	0	11.26
	Dairy Digester Biogas to CNG	13.45	0	13.45
Liquefied Natural Gas	North American NG delivered via pipeline; liquefied in CA using liquefaction with 80% efficiency	83.13	0	83.13
	North American NG delivered via pipeline; liquefied in CA using liquefaction with 90% efficiency	72.38	0	72.38
	Overseas-sourced LNG delivered as LNG to Baja;	93.37	0	93.37

	re-gasified then re-liquefied in CA using liquefaction with 80% efficiency			
	Overseas-sourced LNG delivered as LNG to CA; re-gasified then re-liquefied in CA using liquefaction with 90% efficiency	82.62	0	82.62
	Overseas-sourced LNG delivered as LNG to CA; no re-gasification or re-liquefaction in CA	77.50	0	77.50
	Landfill Gas (bio-methane) to LNG liquefied in CA using liquefaction with 80% efficiency	26.31	0	26.31
	Landfill Gas (bio-methane) to LNG liquefied in CA using liquefaction with 90% efficiency	15.56	0	15.56
	Dairy Digester Biogas to LNG liquefied in CA using liquefaction with 80% efficiency	28.53	0	28.53
	Dairy Digester Biogas to LNG liquefied in CA using liquefaction with 90% efficiency	17.78	0	17.78
Electricity	California average electricity mix	124.10	0	124.10
	California marginal electricity mix of natural gas and renewable energy sources	104.71	0	104. 71
Hydrogen	Compressed H_2 from central reforming of NG (includes liquefaction and re-gasification steps)	142.20	0	142.20
	Liquid H_2 from central reforming of NG	133.00	0	133.00
	Compressed H_2 from central reforming of NG (no liquefaction and re-gasification steps)	98.80	0	98.80
	Compressed H_2 from on-site reforming of NG	98.30	0	98.30
	Compressed H_2 from on-site reforming with renewable feedstocks	76.10	0	76.10

** The annual crude Average CI value will be first calculated for calendar year 2012 and subsequently updated annually using data for crude oil supplied to California refineries during the specified calendar year.

(2) *Lookup-Table Carbon-Intensity Values.*

(A) *For CARBOB and Diesel Fuel.*

Deficit calculations to be used for a regulated party's CARBOB or diesel fuel are specified in section 95486(b)(2)(A)1. Requirements for adding incremental emission increases associated with an increase in the carbon intensity of crude oil to a regulated party's compliance obligation are specified in section 95486(b)(2)(A)2. The credit calculation for CARBOB or diesel derived from petroleum feedstock which is produced using innovative methods such as carbon capture and sequestration (CCS) is specified in section 95486(b)(2)(A)3.

1. *Deficit Calculation for CARBOB or Diesel Fuel.*

A regulated party for CARBOB or diesel fuel must calculate separately the base deficit and incremental deficit for each fuel or blendstock derived from petroleum feedstock as specified in this provision.

Base Deficit Calculation

$$Deficits^{XD}_{Base}\ (MT) = (CI^{XD}_{Standard} - CI^{XD}_{BaselineAvg}) \times E^{XD} \times C$$

Incremental Deficit Calculation to Mitigate Increases in the Carbon-Intensity of Crude Oil

$$If\ CI^{XD}_{20XXCrudeAvg} > CI^{XD}_{BaselineCrudeAvg}\ then:$$

$$Deficits^{XD}_{Incremental\ 20XX} =$$

$$(CI^{XD}_{BaselineCrudeAvg} - CI^{XD}_{20XXCrudeAvg}) \times E^{XD} \times C$$

$$If\ CI^{XD}_{20XXCrudeAvg} \leq CI^{XD}_{BaselineCrudeAvg}\ then:$$

$$Deficits^{XD}_{Incremental\ 20XX} = 0$$

where,

$Deficits^{XD}_{Base}\ (MT)$ and $Deficits^{XD}_{Incremental20XX}$ mean the amount of LCFS deficits incurred (a negative value), in metric tons, by the volume of CARBOB and diesel that is derived from petroleum feedstock and is either produced in or imported into California during a specific calendar year;

$CI^{XD}_{Standard}$ has the same meaning as specified in section 95485(a)(3)(A);

$CI^{XD}_{BaselineAvg}$ is the average carbon-intensity value of CARBOB or diesel, in gCO2E/MJ, that is derived from petroleum feedstock and is either produced in or imported into California during the baseline calendar year, 2009. For purposes of this provision, $CI^{XD}_{BaselineAvg}$ for CARBOB (XD = "CARBOB") and diesel fuel (XD = "diesel") are the Baseline Average carbon intensity values for CARBOB and diesel (ULSD) set forth in the Carbon Intensity Lookup Table. The Baseline Average carbon intensity values for CARBOB and diesel (ULSD) are calculated using data for crude oil supplied to California refineries during the baseline calendar year, 2009.

$CI^{XD}_{BaselineCrudeAvg}$ is the California average crude oil carbon-intensity value, in gCO2E/MJ, attributed to the production and transport of the crude oil used as petroleum feedstock for California refineries during the baseline calendar year, 2009. For purposes of this provision, $CI^{XD}_{BaselineCrudeAvg}$ for CARBOB (XD = "CARBOB") and diesel fuel (XD = "diesel") is the Baseline Crude Average carbon intensity value set forth in the Lookup Table. The Baseline Crude Average carbon intensity value is calculated using data for crude oil supplied to California refineries during the baseline calendar year, 2009.

$CI^{XD}_{20XXCrudeAvg}$ is the California average crude oil carbon-intensity value, in gCO2E/MJ, attributed to the production and transport of the crude oil used as petroleum feedstock for California refineries in a specific calendar year. For purposes of this provision, $CI^{XD}_{20XXCrudeAvg}$ for CARBOB (XD = "CARBOB") and diesel fuel (XD = "diesel") is the Annual Crude Average carbon intensity value set forth in the Lookup Table. The Annual Crude Average carbon-intensity value will be first calculated for calendar year 2012 and subsequently will be updated annually using data for crude oil supplied to California refineries during the specified calendar year. Crude oil used to produce CARBOB or diesel for which a credit is claimed in a calendar year pursuant to section 95486(b)(2)(A)3 will be included in the Annual Crude Average carbon-intensity calculations for that year based on the carbon intensity of the crude oil prior to calculation of any innovative credits allowed pursuant to section 95486(b)(2)(A)3.

E^{XD} is the amount of fuel energy, in MJ, from CARBOB (XD = "CARBOB") or diesel (XD = "diesel"), determined from the energy density conversion factors in Table 4, either produced in California or imported into California during a specific calendar year.

C has the same meaning as specified in section 95485(a)(3)(A).

2. *Addition of Incremental Deficits that Result from Increases in the Carbon-Intensity of Crude Oil to a Regulated Party's Compliance Obligation.*

   a. Incremental deficits for CARBOB or diesel fuel that result from increases in the carbon-intensity of crude oil will be calculated and added to each affected regulated party's compliance obligation for the compliance period in which the $Deficits^{XD}_{Incremental20XX}$ become effective, which will be the year following the year in which the incremental deficit was established and added to the Lookup Table.

   b. Incremental deficits for CARBOB or diesel fuel for each regulated party will be based upon the amount of CARBOB and Diesel fuel supplied by the regulated party in each compliance period for which the $Deficits^{XD}_{Incremental20XX}$ are effective.

3. A regulated party may receive credit for fuel or blendstock derived from petroleum feedstock which has been produced using innovative methods such as carbon capture and sequestration or other methods approved by the Executive Officer. Implementation of the innovative method must have occurred during or after the year 2010 and must result in a reduction in carbon intensity for crude oil recovery (well to refinery entrance gate) of 5.00 gCO2E/MJ or greater. Using the Method 2A process as set forth in section 95486(c), the regulated party must submit to ARB carbon intensity values for petroleum feedstock recovered both with and without implementation of the innovative method. Credits for CARBOB, gasoline, or diesel derived from this petroleum feedstock must be calculated as specified below:

$$Credits^{XD}_{Innov}(MT) = (CI^{XD}_{Without} - CI^{XD}_{With})_{Innov} \times E^{XD}_{Innov} \times C$$

where,

$Credits^{XD}_{Innov}(MT)$ mean the amount of LCFS credits generated (a positive value), in metric tons, by the volume of a fuel or blendstock produced in California and derived wholly from petroleum feedstock which uses the innovative production method;

CI^{XD}_{With} means the carbon intensity value, in gCO2E/MJ, of the petroleum feedstock produced with the innovative method;

$CI^{XD}_{Without}$ means the carbon intensity value, in gCO2E/MJ, of the petroleum feedstock produced using a similar process but without the innovative method;

E^{XD}_{Innov} is the amount of fuel energy, in MJ, from CARBOB (XD = "CARBOB") or diesel (XD = "diesel"), determined from the energy density conversion factors in Table 4, produced in California and derived wholly from petroleum feedstock produced with the innovative method;

C has the same meaning as specified in section 95485(a)(3)(A).

~~For purposes of this section 95486(b)(2)(A), "2006 California baseline crude mix" means the total pool of crude oil supplied to California refiners in 2006; "included in the 2006 California baseline crude mix" means the crude oil constituted at least 2.0% of the 2006 California baseline crude mix, by volume, as shown by California Energy Commission records for 2006; and "high carbon-intensity crude oil" means any crude oil that has a total production and transport carbon-intensity value greater than 15.00 grams CO2e/MJ.~~

~~The carbon intensity for a regulated party's CARBOB, gasoline or a diesel fuel is determined as specified in section 95486(b)(2)(A)1. or 2. below, whichever applies:~~

~~1. *For CARBOB, Gasoline or Diesel Fuel Derived from Crude Oil That Is Either Included in the 2006 California Baseline Crude Mix or Is Not a High Carbon Intensity Crude Oil.*~~

~~If all of a regulated party's CARBOB, gasoline or diesel fuel is derived from crude oil that is either:~~

~~a. included in the 2006 California baseline crude mix, or~~

~~b. not a high carbon-intensity crude oil,~~

~~the regulated party must use the average carbon intensity value shown in the Carbon Intensity Lookup Table for CARBOB, gasoline or diesel fuel.~~

~~2. *For All Other CARBOB, Gasoline or Diesel Fuel, Including Those Derived from High Carbon-Intensity Crude Oil (HCICO).*~~

~~Except as set forth in this provision, if any portion of a regulated party's CARBOB, gasoline, or diesel fuel does not fall within section 95486(b)(2)(A)1. above (including those derived from high carbon-~~

~~intensity crude oil), the regulated party must calculate the deficits for CARBOB, gasoline, or diesel fuel, derived wholly or in part from crude oil subject to this provision, using the deficit calculation methodology and the process for determining the carbon intensity value described in paragraphs a. and b., respectively, below:~~

~~a. *Deficit Calculation When HCICO Is Used.*~~

~~i. *Calculation Methodology*. For purposes of this section, a regulated party for CARBOB, gasoline or diesel fuel, derived wholly or in part from HCICO feedstock, must calculate separately the base deficit and incremental deficit for each fuel or blendstock, as specified in this provision. The base deficit must be calculated for the entire volume of fuel or blendstock derived from the mix of HCICO and all other crude, and the incremental deficit must be calculated only for the volume of fuel or blendstock derived from the HCICO, as follows:~~

$$Deficits^{XD}_{Base_i}(MT) = (CI^{XD}_{Standard_i} - CI^{XD}_{Avg_i}) \times E^{XD}_{Total_i} \times C$$

~~and~~

$$Deficits^{XD}_{Incremental_i}(MT) = (CI^{XD}_{Avg_i} - CI^{XD}_{HCICO_i}) \times E^{XD}_{HCICO_i} \times C$$

~~where,~~

~~*i* is the finished fuel or blendstock index;~~

~~$Deficits^{XD}_{Base}$ *(MT)* means the amount of LCFS deficits incurred (a negative value), in metric tons, by the volume of gasoline, CARBOB, or diesel fuel that is derived from all petroleum feedstock, including HCICO, produced in or imported into California during a specific calendar year;~~

~~$Deficits^{XD}_{Incremental}$ *(MT)* means the amount of LCFS deficits incurred (a negative value), in metric tons, by the volume of a fuel or blendstock that is derived wholly from HCICO feedstock produced in or imported into California during a specific calendar year;~~

~~$CI^{XD}_{S\,tan\,dard}$ has the same meaning as specified in section 95485(a)(3)(A);~~

~~CI^{XD}_{Avg} is the adjusted average carbon-intensity value of a fuel or blendstock, in gCO2E/MJ, derived from all petroleum feedstock, including HCICO, produced in or imported into California during a specific calendar year, where the carbon intensity of the fuel or blendstock is adjusted by dividing it with the EER as described in section 95485(a)(3)(B). For purposes of this provision, CI^{XD}_{Avg} for CARBOB (*XD* = "gasoline") and diesel fuel (*XD* = "diesel") is the total carbon intensity value for CARBOB and diesel (ULSD) set forth in the Carbon Intensity Lookup Table, respectively;~~

~~CI^{XD}_{HCICO} is the adjusted actual carbon-intensity value of a fuel or blendstock, in gCO2E/MJ, derived from HCICO feedstock produced in or imported into California during a specific calendar year, where the carbon intensity of the fuel or blendstock, as determined pursuant to paragraph ii. below, is adjusted by dividing it with the EER as described in section 95485(a)(3)(B);~~

~~E^{XD}_{Total} is the adjusted total amount of fuel energy, in MJ, from gasoline (*XD*="gasoline") or diesel (*XD*="diesel"), derived from all petroleum feedstock produced in or imported into California during a specific calendar year, where the total amount of fuel energy of the fuel is adjusted by multiplying it with the EER as described in section 95485(a)(3)(C). Where the petroleum feedstock is comprised entirely of HCICO, E^{XD}_{Total} equals E^{XD}_{HCICO};~~

~~E^{XD}_{HCICO} is the adjusted total amount of fuel energy, in MJ, from gasoline (*XD*="gasoline") or diesel (*XD*="diesel"), derived from HCICO feedstock produced in or imported into California during a specific calendar year, where the total amount of fuel energy of the fuel is adjusted by multiplying it with the EER as described in section 95485(a)(3)(C); and~~

~~*C* has the same meaning as specified in section 95485(a)(3)(A).~~

ii. *Determination of Carbon Intensity Value for HCICO-derived Products, CI_{HCICO}^{XD}.*

A regulated party subject to section 95486(b)(2)(A) must determine the carbon intensity value for its CARBOB, gasoline or diesel fuel using any of the following that applies, subject to Executive Officer approval as specified in section 95485(a)(2) or as otherwise specified.

I. The carbon intensity value shown in the Carbon Intensity Lookup Table corresponding to the HCICO's pathway; or

II. Except as provided in paragraph III. below, if there is no carbon intensity value shown in the Carbon Intensity Lookup Table corresponding to the HCICO's pathway, the regulated party must propose a new pathway for its HCICO and obtain approval from the Executive Officer for the resulting pathway's carbon intensity pursuant to Method 2B as set forth in section 95486(d) and (f); or

III. The regulated party may, upon written Executive Officer approval pursuant to section 95486(f), use the average carbon intensity value in the Carbon Intensity Lookup Table for CARBOB, gasoline or diesel fuel, provided the GHG emissions from the fuel's crude production and transport steps are subject to control measures, such as carbon capture and sequestration (CCS) or other methods, which reduce the crude oil's production and transport carbon intensity value to 15.00 grams CO2e/MJ or less, as determined by the Executive Officer.

(B) *For All Other Fuels and Blendstocks.*

Except as provided in section 95486(c) and (d), for each of a regulated party's fuels, the regulated party must determine whether the Carbon Intensity Lookup Table contains one or more pathways that closely correspond to the regulated party's fuel pathways. This determination shall be made as set forth in 95486 (a)(2). If the regulated party determines that the Carbon Intensity Lookup Table contains one or more pathways that closely correspond to the regulated party's pathways, the regulated party shall use the carbon intensity value in the Lookup Table that most closely corresponds to the production process used to produce the regulated party's fuel. The determination that the Carbon Intensity Lookup Table contains one or more pathways that closely correspond to the regulated party's pathways, and the ultimate selection of a Lookup Table carbon intensity value selected by the regulated party is subject to approval by the Executive Officer as set forth in Section 95486 (a)(3).

[Note: For example, if one of the regulated party's fuels is compressed natural gas (CNG) used in a light-duty vehicle, and the CNG is derived from dairy digester biogas, the regulated party would use the total carbon intensity value in Carbon Intensity Lookup Table 6 (i.e., the last column in Lookup Table 6) corresponding to the applicable Fuel (compressed natural gas) and Pathway Description (Dairy Digester Biogas to CNG). The result in this example would be a total carbon intensity value of 13.45 gC02e/MJ.]

(c) *Method 2A – Customized Lookup Table Values (Modified Method 1).*

Under Method 2A, the regulated party may propose, for the Executive Officer's written approval pursuant to section 95486(f), modifications to one or more inputs to the CA-GREET model used to generate the carbon intensity values in the Method 1 Lookup Table.

For any of its transportation fuels subject to the LCFS regulation, a regulated party may propose the use of Method 2A to determine the fuel's carbon intensity, as provided in this section 95486(c). For each fuel subject to a proposed Method 2A, the regulated party must obtain written approval from the Executive Officer for its proposed Method 2A before the regulated party may use Method 2A for determining the carbon intensity of the fuel. The Executive Officer's written approval may include more than one of a regulated party's fuels under Method 2A.

The Executive Officer may not approve a proposed Method 2A unless the regulated party and its proposed Method 2A meet the scientific defensibility, "5-10" substantiality, and data submittal requirements specified in section 95486(e)(1) through (3) and the following requirements:

(1) The proposed modified CA-GREET inputs must accurately reflect the conditions specific to the regulated party's production and distribution process;

(2) The proposed Method 2A uses only the inputs that are already incorporated in CA-GREET and does not add any new inputs (e.g., refinery efficiency); and

(3) The regulated party must request the Executive Officer to conduct an analysis or modeling to determine the new pathway's impact on total carbon intensity due to indirect effects, including land-use changes, as the Executive Officer deems appropriate. The Executive Officer will use the GTAP Model (February 2009), which is incorporated by reference, or other model determined by the Executive Officer to be at least equivalent to the GTAP Model (February 2009).

(d) *Method 2B – New Pathway Generated by California-Modified GREET (v.1.8b).*

Under Method 2B, the regulated party proposes for the Executive Officer's written approval the generation of a new pathway using the CA-GREET as provided for in this provision. The Executive Officer's approval is subject to the requirements as specified in section 95486(f) and the following requirements:

(1) For purposes of this provision, "new pathway" means the proposed full fuel-cycle (well-to-wheel) pathway is not already in the ARB Lookup Table specified in section 95486(b)(1), as determined by the Executive Officer;

(2) The regulated party must demonstrate to the Executive Officer's satisfaction that the CA-GREET can be modified successfully to generate the proposed new pathway. If the Executive Officer determines that the CA-GREET model cannot successfully generate the proposed new pathway, the proponent-regulated party must use either Method 1 or Method 2A to determine its fuel's carbon intensity;

(3) The regulated party must identify all modified parameters for use in the CA-GREET for generating the new pathway;

(4) The CA-GREET inputs used to generate the new pathway must accurately reflect the conditions specific to the regulated party's production and marketing process; and

(5) The regulated party must request the Executive Officer to conduct an analysis or modeling to determine the new pathway's impact on total carbon intensity due to indirect effects, including land-use changes, as the Executive Officer deems appropriate. The Executive Officer will use the GTAP Model (February 2009), which is incorporated by reference, or other

model determined by the Executive Officer to be at least equivalent to the GTAP Model (February 2009).

(e) *Scientific Defensibility, Burden of Proof, Substantiality, and Data Submittal Requirements and Procedure for Approval of Method 2A or 2B.* For a proposed Method 2A or 2B to be approved by the Executive Officer, the regulated party must demonstrate that the method is both scientifically defensible and, for Method 2A, meets the substantiality requirement, as specified below:

(1) *Scientific Defensibility and Burden of Proof.* This requirement applies to both Method 2A and 2B. A regulated party that proposes to use Method 2A or 2B bears the sole burden of demonstrating to the Executive Officer's satisfaction, that the proposed method is scientifically defensible.

(A) For purposes of this regulation, "scientifically defensible" means the method has been demonstrated to the Executive Officer as being at least as valid and robust as Method 1 for calculating the fuel's carbon intensity.

(B) Proof that a proposed method is scientifically defensible may rely on, but is not limited to, publication of the proposed Method 2A or 2B in a major, well-established and peer-reviewed scientific journal (e.g., Science, Nature, Journal of the Air and Waste Management Association, Proceedings of the National Academies of Science).

(2) *"5-10" Substantiality Requirement.* This requirement applies only to a proposed use of Method 2A, as provided in section 95486(c). For each of its transportation fuels for which a regulated party is proposing to use Method 2A, the regulated party must demonstrate, to the Executive Officer's satisfaction, that the proposed Method 2A meets both of the following substantiality requirements:

(A) The source-to-tank carbon intensity for the fuel under the proposed Method 2A is at least 5.00 grams CO2-eq/MJ less than the source-to-tank carbon intensity for the fuel as calculated under Method 1. "Source-to-tank" means all the steps involved in the growing/extraction, production and transport of the fuel to California, but it does not include the carbon intensity due to the vehicle's use of the fuel; "source-to-tank" may also be referred to as "well-to-tank" or "field-to-tank."

(B) The regulated party can and expects to provide in California more than 10 million gasoline gallon equivalents per year (1,156 MJ) of the regulated fuel. This requirement applies to a transportation fuel only if the total amount of the fuel sold in California from all

providers of that fuel exceeds 10 million gasoline gallon equivalents per year.

(3) *Data Submittal.* This requirement applies to both Method 2A and 2B. A regulated party proposing Method 2A or 2B for a fuel's carbon intensity value must meet all the following requirements:

(A) Submit to the Executive Officer all supporting data, calculations, and other documentation, including but not limited to, flow diagrams, flow rates, CA-GREET calculations, equipment description, maps, and other information that the Executive Officer determines is necessary to verify the proposed fuel pathway and how the carbon intensity value proposed for that pathway was derived;

(B) All relevant data, calculations, and other documentation in (A) above must be submitted electronically, such as via email or an online web-based interface, whenever possible;

(C) The regulated party must specifically identify all information submitted pursuant to this provision that is a trade secret; "trade secret" has the same meaning as defined in Government Code section 6254.7; and

(D) The regulated party must not convert spreadsheets in CA-GREET containing formulas into other file formats.

(f) *Approval Process.* To obtain Executive Officer approval of a proposed Method 2A or 2B, the regulated party must submit an application as follows:

(1) *General Information Requirements.*

(A) For a proposed use of Method 2A, the regulated party's application must contain all the information specified in section 95486(c), (e), and (f)(2);

(B) For a proposed use of Method 2B, the regulated party's application must contain all the information specified in section 95486(d), (e)(1), (e)(3), and (f)(2).

(2) *Use of Method 2A or 2B Prohibited Without Executive Officer Approval.* The regulated party must obtain the Executive Officer's written approval pursuant to section 95486(f)(5) of its application submitted pursuant to section 95486(f)(1) above before using a proposed Method 2A or 2B for any purpose under the LCFS regulation. A regulated party that submits any information or documentation in support of a proposed Method 2A or

2B must include a written statement clearly showing that the regulated party understands and agrees to the following:

(A) All information not identified in 95486(e)(3)(C) as trade secrets are subject to public disclosure pursuant to title 17, CCR, sections 91000-91022 and the California Public Records Act (Government Code § 6250 et seq.); and

(B) If the application is approved by the Executive Officer, the carbon intensity values, associated parameters, and other fuel pathway-related information obtained or derived from the application will be incorporated into the LCFS Reporting Tool for use by the applicant. ~~If the application is approved by the Executive Officer, the carbon intensity values, associated parameters, and other fuel pathway-related information obtained or derived from the application will be incorporated into the Method 1 Lookup Table for use on a free, unlimited license, and otherwise unrestricted basis by any person~~;

~~(3) *Completeness/Incompleteness Determination.* After receiving an application submitted under this section, the Executive Officer shall determine whether the application is complete within 15 work days. If the Executive Officer determines the application is incomplete, the Executive Officer shall notify the regulated party accordingly and identify the deficiencies in the application. The deadline set forth in this provision shall also apply to supplemental information submitted in response to an incompleteness determination by the Executive Officer.~~

~~(4) *Public Review.* After determining an application is complete, the Executive Officer shall publish the application and its details on ARB's website at http://www.arb.ca.gov/fuels/lcfs/lcfs.htm and make it available for public review. The Executive Officer shall treat all trade secrets specifically identified by the regulated party under section 95486(e)(3)(C) above in accordance with 17 CCR §§ 91000-91022 and the California Public Records Act (Government Code section 6250 et seq.).~~

~~(5) *Final Action.* The Executive Officer shall take final action to approve an application for approval of a new carbon intensity value and associated fuel pathway submitted pursuant to this subsection (f) by amending the Lookup Table(s) in accordance with the rulemaking provisions of the Administrative Procedure Act (Government Code section 11340 et seq.). The Executive Officer shall notify the regulated party accordingly and publish the final action on ARB's website at http://www.arb.ca.gov/fuels/lcfs/lcfs.htm. If the Executive Officer disapproves an application, the disapproval shall identify the basis for the disapproval.~~

(3) *Fuel Pathway Application Requirements.*

(A) No fuel pathway may be approved under subsection (C) or (D) unless the applicant demonstrates each of the following to the Executive Officer's satisfaction:

1. The fuel that is produced from the proposed pathway would comply with all applicable ASTM standards.

2. The proposed fuel pathway would be covered by an approved Multimedia Analysis, as required under section 95487.

4. If applied for under the Method 2A provisions in Section 95486(c), the proposed fuel pathway must:

a. Result in a fuel carbon intensity reduction of at least 5 gCO_2e/MJ over the applicable reference fuel pathway. The reference fuel pathway is the pathway from the Carbon Intensity Lookup Table that most closely corresponds to the proposed Method 2A pathway.

b. Be for a fuel that the applicant can and expects to provide in California in quantities of not less than 10 million gallons per year.

5. The fuel that would be produced under the proposed pathway would not be exempt from the LCFS under Section 95480.1 (c)

(B) Any person may apply to the Executive Officer for use of a transportation fuel pathway under the LCFS. Unless otherwise noted, all applicants for a certified Method 2A or 2B fuel pathway shall submit the items in the list below.

1. All documents (including spreadsheets and other items not in a standard document format) that contain confidential business information (CBI) must prominently display the phrase "Contains Confidential Business Information" above the main document title and in a running header. Additionally, a separate, redacted version of most such documents must also be submitted. The redacted versions must be approved by the applicant for posting to a public LCFS web site. Within redacted documents, specific redactions must be replaced with the phrase "Confidential

business information has been deleted." This phrase must be displayed clearly and prominently wherever CBI has been redacted.

2. All applications and supporting documents except for the transmittal letter described in (C)(12) below shall be in electronic form unless the Executive Officer has approved or requested in writing another submission format. Documents such as receipts, which are available in paper form only, shall be scanned into an electronic file for submittal. The transmittal letter described in (C)(12) below shall be submitted as an original copy on paper and signed in blue ink.

(C) All applications for LCFS fuel pathway approval shall, unless otherwise noted, include the following:

1. A completed Method 2A/2B application form, which is available at http://www.arb.ca.gov/fuels/2a2b-app.doc.

2. A technical life cycle analysis report, which includes the following information:

a. A detailed description of the full fuel production process. The description should include:

i. A description of the full well-to-wheels fuel life cycle, including the geographic locations where each primary step in the fuel life cycle occurs. This description shall identify where the system boundary was established for the purposes of performing the life cycle analysis on the proposed pathway, and shall be accompanied by a schematic flow chart illustrating the generalized fuel life cycle. The system boundary shall be shown in the schematic.

ii. A description of all feedstocks used, including their points of origination, all feedstock transportation distances and modes, and all pre-processing to which feedstocks are subject. For fuels utilizing agricultural crops for feedstocks, the description shall include the agricultural practices used to produce those crops. This discussion shall cover energy and chemical use, typical crop yields, feedstock

harvesting, transport modes and distances, storage, and pre-processing (such as drying or oil extraction). If feedstock transportation modes and distances and/or agricultural practices are unknown, the application shall so state, and shall use CA-GREET defaults for these parameters in the analysis.

iii. A description of all non-feedstock inputs used in the fuel production process. These include, but are not limited to enzymes, fertilizers, chemicals (including agricultural chemicals), and microorganisms.

iv. A description of the transportation modes used throughout the fuel life cycle. This discussion must identify origins and destinations (at least on a regional basis), cargo carrying capacities, fuel shares, and the distances traveled in each case.

v. A description of all facilities involved in the production of fuel under the proposed pathway.

vi. A list of all combustion-powered equipment, along with their respective capacities, sizes, or rated power, fuel utilization type, and proposed use throughout the fuel lifecycle.

vii. A discussion of the thermal and electrical energy consumption that occurs throughout the fuel life cycle. All fuels used (natural gas, biogas, coal, biomass, etc.) must be identified. The electrical energy generation fuel mix used in the CA-GREET analysis must be identified. Internally generated power such as cogeneration and combined heat and power must also be described.

viii. A description of all co-products, byproducts, and waste products associated with production of the proposed fuel.

b. A description of the formal life cycle analysis performed on the proposed pathway. This description must provide clear, detailed information on the energy

consumed, the greenhouse gas emissions generated, and the final pathway carbon intensity, as calculated using the approved version of CA-GREET. Important intermediate values in each of the primary life cycle analytical categories shall be shown. Those categories are upstream processes, feedstock and fuel production, feedstock and finished fuel transport, and the use of the fuel in a vehicle. It shall include, at a minimum:

i. A table showing all CA-GREET input values used in the analysis. The worksheet, row, and column locations of the cells into which these inputs were entered shall be identified. The locations of unchanged default values should not be identified. In combination with the inputs identified in item (b)(ii) below, this table shall enable a party unfamiliar with the proposed pathway to enter easily the reported inputs and to replicate the carbon intensity results reported in the application.

ii. A detailed discussion of all modifications other than those covered by item (b)(i) above, made to the CA-GREET spreadsheet. This discussion shall include enough specific detail to enable a party unfamiliar with the proposed pathway to duplicate easily all such modification and, in combination with the inputs identified in item (b)(i) above, replicate the carbon intensity results reported in the application.

iii. Documentation of all non-default CA-GREET values used in the carbon intensity calculation process.

iv. A detailed description of all supporting calculations that were performed outside of the CA-GREET spreadsheet.

c. A list of references covering all information sources used in the preparation of the life cycle analysis. References and citations shall at a minimum, identify the author(s), author's affiliation, title of the referenced document, publisher, publication date, and pages cited. For internet citations, the reference shall

include the universal resource locator (URL) address of the citation, as well as the date the website was last visited.

3. Invoices covering a period of no less than two years for all forms of energy consumed in the fuel production process. The period covered shall be the most recent two-year period of relatively typical operations. Each set of invoices (natural gas, electricity, coal, etc.) shall be accompanied by an Excel spreadsheet summarizing the invoices. Every invoice submitted shall appear as a record in the summary. Each record shall, at a minimum, specify in a separate column the period covered by the purchase, the quantity of energy purchased during that period, the invoice amount, and any special information that applies to that record.

4. If transportation distances other than the ARB-specified defaults are used in the life cycle analysis of the proposed fuel, receipts covering a period of no less than two years for all affected hauling trips shall be provided. Each set of invoices (heavy-duty truck, tanker truck, rail, etc.) shall be accompanied by an Excel spreadsheet summarizing the invoices. Every invoice submitted shall appear as a record in the summary. Each record shall, at a minimum, specify in a separate column the period covered by the purchase, the number of trips purchased, the distance covered by each trip, the invoice amount, and any special information that applies to that record (the notes column need not be populated for every record.)

5. A copy of the CA-GREET spreadsheet prepared for the life cycle analysis of the proposed fuel pathway. All Method 2A and 2B pathway carbon intensities must be calculated using CA-GREET, version 1.8b unless the Executive Officer has approved the use of a method that is both compatible and consistent with the calculation methodology used by GREET version 1.8b.

6. One or more process flow diagrams that, singly or collectively, depict the complete fuel production process. Each piece of equipment or stream appearing on the process flow diagram shall include data on its energy and materials balance, along with any other critical information such as operating temperature, pH, rated capacity, etc.

7. All applicable air pollution control permits issued by the local air pollution control jurisdiction. If air pollution control permits are not required, the life cycle analysis report shall fully explain why this requirement does not exist.

8. Descriptions of all co-located facilities, which in any way utilize outputs from, or provide inputs to the fuel production facility. Such co-located facilities include but are not limited to cogeneration facilities, facilities that process or utilize co-products such as distillers grains with solubles, facilities that provide waste heat to the fuel production process, and facilities which provide or pre-process feedstocks or thermal energy fuels.

9. A copy of the federal Renewable Fuel Standard 2 (RFS2) Third Party Engineering Review Report, if available. If the RFS2 engineering report is not available, the Life Cycle Analysis Report should explain why it is not available.

10. Copies of the federal Renewable Fuel Standard 2 (RFS2) Fuel Producer Co-products Report as required pursuant to 40 CFR 80.14151(b)(1)(ii)(M)-(N). The period covered by the Co-products Report submittal to the Executive Office shall coincide with the period covered by the energy receipts submitted under Paragraph 3, above.

11. Audited statements or reports showing annual finished fuel sales. The period covered by the finished fuel sales reports submittal to the Executive Office shall coincide with the period covered by the energy receipts submitted under Paragraph 3, above

12. A signed transmittal letter from the applicant attesting to the veracity of the information in the application packet and declaring that the information submitted accurately represents the long-term, steady state operation of the fuel production process described in the application packet. The transmittal letter shall

    a. Be the original copy. Photocopies, scanned electronic copies, facsimiles, etc. will not be accepted.

    b. Be on company letterhead.

    c. Be signed in blue ink by a high-ranking responsible official such as a company chief operating officer.

d. Be from the applicant and not from an entity representing the applicant (such as a consultant or legal counsel).

(D) Within 30 calendar days of receipt of an application designated by the applicant as ready for formal evaluation, The Executive Officer shall advise the applicant in writing either that it is complete or that specified additional information is required to make it complete. Within 30 calendar days of submittal of the requested information, the Executive Officer shall advise the applicant in writing either that the application is complete, or that specified additional information is still required before it can be deemed complete. This process can be repeated until one of two outcomes occurs:

1. The Executive Officer deems the packet to be complete and informs the applicant in writing of that outcome.

2. The Executive Officer determines that the applicant is unable to complete the packet and denies the application on that basis. The applicant will be informed in writing of this outcome.

(G) The applicant will be informed in writing of the Executive Officer's findings by no later than 90 calendar days from the date that the application is deemed to be complete.

(H) At any point, and from time to time, during the formal evaluation process, the Executive Officer may request in writing additional information or clarification from the applicant. Between the time that request is issued, and the time the requested information is submitted, no evaluation time, as described in (G), above, will be deemed to have elapsed.

(I) If the Executive Officer is unable to reach a determination within the time period specified in (G) above, the application will be denied without prejudice. This will provide the applicant with time to work with the Executive Officer to overcome the problems the Executive Officer encountered. Once the Executive Officer finds, and informs the applicant in writing, that it is able to proceed with its analysis, it will have another 90 days to reach a finding, as specified in (G) above.

(J) The Executive Officer will evaluate all applications against the following criteria.

1. The Executive Officer will first attempt to replicate the applicant's carbon intensity calculations. If the applicant's calculations can be duplicate, the Executive Officer will continue with the evaluation process. Duplication will proceed as follows:

   i. Starting with a copy of CA-GREET that had not previously been used for calculations associated with the proposed pathway, the Executive Officer will enter all the inputs reported by the applicant under provision (3)(C)(2)b.(i).

   ii. The Executive Officer will then apply all CA-GREET modifications reported by the applicant under provision (3)(C)(2)b.(ii).

   iii. If the Executive Officer is able to duplicate the applicant's CA-GREET results, the application will receive a pass in this area. If the Executive Officer is not able to duplicate the applicant's CA-GREET results, the application shall be denied.

2. Using the energy purchase data obtained from receipts submitted by the applicant and the fuel production accounting data submitted by the applicant, the Executive Officer will attempt to verify the energy consumption inputs to the CA-GREET carbon intensity calculations that were submitted by the applicant pursuant to (C)(2)(b)(i).). If the Executive Officer is unable to verify the applicant's CA-GREET energy consumption inputs by calculating them from energy receipt data and fuel production volumes, the application shall be denied.

(K) If the Executive Officer finds that an application meets the requirements of subsection 95486(f)(3)(J) and determines that the applicant has satisfactorily made the demonstrations identified in subsection 95486(c)), then the Executive Officer will approve in writing the fuel pathway for use by the applicant and shall describe all limitations and operational conditions to which the new pathway will be subject. The Executive Officer shall act on a complete application within the time periods specified in paragraph (G), above.

(L) If the Executive Officer at any time determines that an approved fuel pathway does not meet the operational conditions specified in the written approval issued by the Executive Officer as specified in

paragraph (J), above, the Executive Officer shall revoke or modify the approval as is necessary to assure that no fuel that does not meet all applicable operational conditions, including the specified fuel life cycle carbon intensity, is produced for sale in California under that pathway. The Executive Officer shall not revoke or modify a prior certification order without first affording the applicant an opportunity for a hearing in accordance with title 17, California Code of Regulations, part III, chapter 1, subchapter 1, article 4 (commencing with section 60040).

(M) *Recordkeeping.*

1. Each fuel provider that has been approved to use a fuel pathway pursuant to subsection (c) must maintain records identifying each facility at which it produces a transportation fuel for sale in California under the approved fuel pathway. For each such facility, the entity must compile records showing:

   a. the volume of fuel produced and subsequently sold in California under the certified fuel pathway.

   b. the quantity of all forms of energy consumed to produce the fuel covered by paragraph [i]. Thermal energy shall be reported in units of BTUs per gallon and electrical energy in units of kilowatt-hours per gallon of fuel produced. All receipts for the purchase of this fuel shall be maintained and shall be available for presentation to the Executive Officer upon demand.

   c. The quantities of all products co-produced with the fuel covered by certified LCFS pathway. Records shall be kept on only those co-products which are included in the calculation of the pathway carbon intensity. Copies of the federal Renewable Fuel Standard 2 Fuel Producer Co-products Report described in 95486(f)(3)(C)10 will meet this requirement. For co-products for which copies of the federal Renewable Fuel Standard 2 Fuel Producer Co-products Report are not available, Sales receipts and bills of lading for the sale of all such co-products must be available for presentation to the Executive Officer upon demand. If the amount of co-product produced exceeds the amount sold by five percent or more, full documentation of the fate of the unsold fractions shall be maintained

shall be available to the Executive Officer upon demand.

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference ~~cited~~: Sections 38501, 38510, 38560, 38560.5, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

Section 95487. Requirements for Multimedia Evaluation

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NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference ~~cited~~: Sections 38501, 38510, 38560, 38560.5, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

Section 95488. ~~[Reserved]~~ Banking, Trading and Purchase of Credits.

(a) *Calculation of Credit Balance and Annual Compliance Obligation.*

(1) *Compliance Period.* Beginning in 2011 and every year thereafter, the annual compliance period is January 1 through December 31 of each year.

(2) *Calculation of Compliance Obligation and Credit Balance at the End of a Compliance Period.* A regulated party must calculate the credit balance at the end of a compliance period as follows:

$$\text{Compliance Obligation} = \text{Deficits}^{\text{Gen}} + \text{Deficits}^{\text{Carried Over}}$$

$$\text{Credit Balance} = \text{Credits}^{\text{Gen}} + \text{Credits}^{\text{Acquired}} - \text{Sum of } (\text{Credits}^{\text{retired}} + \text{Credits}^{\text{Sold}} + \text{Credits}^{\text{Exported}})$$

where:

$\text{Deficits}^{\text{Gen}}$ are the total deficits generated pursuant to section 95485(a) for the current compliance period;

$\text{Deficits}^{\text{Carried Over}}$ are the deficits carried over from the previous compliance period;

Credits ^{Gen} are the total credits generated pursuant to section 95488;

Credits ^{Acquired} are the total credits purchased or otherwise acquired, including carry back credits acquired pursuant to section 95488(b)(3);

Credits ^{Sold} are the total credits sold or otherwise transferred;

Credits ^{Exported} are the total credits exported to programs outside the LCFS; and

Credits ^{Retired} are the total credits retired within the LCFS.

(3) *Compliance Demonstration.* A regulated party's annual compliance obligation is met when the regulated party demonstrates via its annual report that it possessed and has retired a number of credits from its credit account (established pursuant to section 95488) that is equal to its compliance obligation.

(4) *Deficit Carryover.* A regulated party that does not retire sufficient credits to fully offset its compliance obligation creates a negative credit balance in a compliance period. The regulated party may carry over the deficit to the next compliance period, without penalty, if both the following conditions are met:

(A) the regulated party fully met its annual compliance obligation for the previous compliance period; and

(B) the number of *Credits* ^{retired} for the current annual compliance period is at least equal to 90 percent of the current annual compliance obligation.

(5) *Deficit Reconciliation.*

(A) A regulated party that meets the conditions of deficit carryover, as specified in section 95481(b)(~~3~~4), must eliminate any deficit generated in a given compliance period by the end of the next compliance period. A deficit may be eliminated only by retirement of an equal amount of generated credits (*Credits* ^{Gen}), by acquisition of an equal amount of credits from another regulated party (*Credits* ^{Acquired}), or by any combination of these two methods.

(B) If the conditions of deficit carryover as specified in section 95481(b)(~~3~~4) are not met, a regulated party is subject to penalties to the extent permitted under State law. In addition, the regulated party must eliminate any deficit generated in a given compliance

period by the end of the next compliance period. A deficit may be eliminated only by retirement of an equal amount of generated credits (*Credits* ^{Gen}), by acquisition of an equal amount of credits from another regulated party (*Credits* ^{Acquired}), or by any combination of these two methods.

(C) A regulated party that is reconciling in the current compliance period a deficit from the previous compliance period under (A) or (B) above remains responsible for meeting the LCFS regulation requirements during the current compliance period.

(b) *Generation and Acquisition of Transferrable Credits.*

(1) Upon submission and acceptance of a quarterly report, the total number of credits generated through the supply of fuels or blendstocks with carbon intensity values below that of the applicable standard will be deposited in a credit account of the applicable regulated party. Once banked, credits maybe retained indefinitely, retired to meet a compliance obligation or transferred to other regulated parties.

(2) The Executive Officer may, at the time of credit creation or credit transfer, assign a unique identification number to each credit. Credits are subject to review and audit by the Executive Officer, and credits may be reversed or adjusted as necessary by the Executive Officer upon a finding that the credits were improperly generated. A proposed credit transfer between regulated parties is also subject to review and verification by the Executive Officer and may be disallowed or adjusted as specified in sections 95488(c)(1)(C)(3) and 95488(c)(4) by the Executive Officer or a third party designated by the Executive Officer.

(3) *Acquisition of "Carry Back" Credits to Meet Obligation.*

(A) *Extended Credit Acquisition Period.* A regulated party may acquire, via purchase or transfer, additional credits between January 1 and March 31 ("extended period") to be used for meeting the compliance obligation of the year immediately prior to the extended period. Credits acquired for this purpose are defined as "carry back" credits.

(B) A carry back credit may be used for the purpose of meeting the compliance of an immediate prior year if all of the conditions below are met:

1. The additional credit was acquired during the extended period, and

2. The additional credit was generated in a compliance year prior to the extended period.

(C) *Use of Carry Back Credits.* Beginning 2012 and each year thereafter, a regulated party may elect to use additional credits purchased during the extended period for the purpose of meeting the obligation of the year immediately prior to the extended period.

1. A regulated party electing to use carry-back credits must identify the number and source of credits it desires to use as carry-back credits in its annual compliance report submitted to the Executive Officer no later than April 30 of the year in which the additional credits were obtained.

2. A regulated party electing to use carry-back credits:

a. Must carry back and retire a sufficient amount of carry back and other credits to meet 100 percent of its compliance obligation in the prior compliance year, or

b. Must minimize its compliance shortfall by retiring all credits purchased during the extended period that are eligible to be used as carry back credits.

(c) *Credit Transfers.*

(1) A regulated party who wishes to sell or transfer credits ("the Seller") and a regulated party who wishes to purchase or acquire a credit ("the Buyer") may enter into an agreement to transfer credits.

(A) *Requirements for the Transfer of Credits.* The Seller may transfer credits provided the number of credits to be transferred by the Seller does not exceed the number of total credits in the Seller's credit account defined as follows:

$$\text{Total Credits} = \frac{Credits^{Gen} + Credits^{Acquired}}{Sum\ of\ (Credits^{Retired} + Credits^{Sold} + Credits^{Exported})}$$

where:

$Credits^{Gen}$, $Credits^{Acquired}$, $Credits^{Retired}$, $Credits^{Sold}$ and $Credits^{Exported}$

have the same meaning as those in section 95488(a).

(B) *Requirements for Documenting a Proposed Credit Transfer.* When a transfer agreement is desired, the Seller shall provide the Buyer a Credit Transfer Form, which is available at

http://www.arb.ca.gov/fuels/lcfs/regamend/20111014_LCFS_Credit_Transfer_Form(2).pdf, containing the Seller's signature, date when the signature was entered, and the following information:

1. Date of the proposed Credit transfer agreement.
2. Names of the Seller and Buyer's Company as registered in the LCFS Reporting Tool.
3. The Federal Employer Identification Numbers (FEIN) of the Seller and Buyer's Company as registered in the LCFS Reporting Tool.
4. The first name and last name of the person who performed the transaction on behalf of the Seller's Company.
5. The phone number and email of the person who performed the transaction on behalf of the Seller's Company.
6. The first name and last name of the person who performed the transaction on behalf of the Buyer's Company.
7. The phone number and email of the person who performed the transaction on behalf of the Buyer's Company.
8. The number of credits proposed to be transferred and the credit identification numbers, if any, assigned to the credits by the board.
9. The price or equivalent value of the consideration (in U.S. dollars) to be paid per metric ton of credit proposed for transfer, excluding any fees.

(C) *Requirements for the Purchase of a Credit.*

1. *Confirmation of Agreement for Credit Transfer.* After receiving the Credit Transfer Form from the Seller, it is the Buyer must confirm the accuracy of the information contained in the Credit Transfer Form by signing and dating the Credit Transfer Form.

2. *Reporting to the Executive Officer.* The Buyer shall submit the Credit Transfer Form with all of the required information to the Executive Officer by electronic mail or another submission method as instructed by the Executive Officer.

3. *Recording of a Credit Transfer.* The Executive Officer will record the transfer request, and will update the account balance of the Seller and Buyer to reflect the proposed. Within 5 business days of receiving a Credit Transfer Form, the Executive Officer shall, either:

   a. Process and approve the transfer request and update the account balances of the Seller and Buyer to

reflect the proposed, provided the Executive Officer determines all required information was submitted and it accurately reflects the parties' positions at the time of the proposed transfer; or

b. Notify the parties that the proposed is infeasible and identify the reasons for rejecting the transfer.

(2) *Frequency of Credit Transfer.* Credits may be transferred between a Seller and Buyer on a frequency that is agreed upon between the two parties.

(3) *Facilitation of Credit Transfer.* A Seller or Buyer may elect to use a third party (a "credit facilitator") to facilitate the transfer of credits for the Seller, the Buyer or both. The credit facilitator may include, but is not limited to, a credit transfer service agency or broker who assists in arranging the transfer of credits. However, a credit facilitator cannot own or otherwise exercise control over the credit. If the credit facilitator acts on the behalf of the buyer, seller or both to document the proposed transfer pursuant to the requirements of subsections (c) (1) B and C. the credit facilitator must concurrently submit to the Executive Officer documentation showing that the credit facilitator has be authorized to act on behalf of the buyer, seller or both.

(4) *Correcting Credit Transfer Errors.* A regulated party is responsible for the accuracy of information submitted to the Executive Officer. If a regulated party discovers an error in the information reported to the Executive Officer or recorded by the Executive Officer, the regulated party must inform the Executive Officer in writing within five (5) business days of the discovery. If the Executive Officer determines that the regulated party was responsible for the error, the regulated party must submit a corrected Credit Transfer Form. If the Executive Officer determines that the error occurred during the recording of the credit by board staff, the Executive Officer will make the correction and no additional re-submissions are required.

(d) *Mandatory Retirement of Credits for the Purpose of Compliance.*

(1) At the end of a compliance period, a regulated party that possesses credits and has also has incurred deficits must retire a sufficient number of credits so that:

(A) enough credits are retired to completely meet the regulated party's compliance obligation for that compliance period, or

(B) If the total number of credits is less than the total number of deficits, the regulated party must retire all credits within its possession, and

(C) A regulated party that has not retired sufficient credits to meet 100 percent of its compliance obligation at the end of a compliance year must calculate the ratio of all remaining credits to outstanding deficits as specified in section 95488(a)(3).

(2) *Credit Retirement Hierarchy.* A regulated party may specify which credits are to be retired to meet its annual compliance obligation.

(A) Once a credit retirement specification has been submitted by a regulated party in its annual report, it is final and may not be altered.

(B) A regulated party not electing a credit retirement hierarchy will be assigned the default hierarchy provided by the Executive Officer.

(e) *Public Disclosure of Credit and Deficit Balances and Credit Transfer Information.*

(1) The Executive Officer shall, as frequently as he/she deems is feasible and appropriate but no less frequently than quarterly, provide to the public a report containing a summary of credit generation and transfer information including, but not limited to:

(A) Total deficits and credits generated or incurred in the most recent quarter for which data are available, including information on the types and quantities of fuels used to generate credits.

(B) Total deficits and credits generated or incurred in all previous quarters of the most recent year for which data are available, including information on the types and quantities of fuels used to generate credits.

(C) Total credits in possession of regulated parties and the total number of outstanding deficits carried over by regulated parties from a previous compliance year.

(D) Information on the credits transferred during the most recent quarter for which data is available including, but not limited to, the total number of credits transferred, the number transfers, the number of parties making transfers and the monthly average credit price for transfers that reported a price.

(E) Total credits transferred and used as carry-back credits during the first quarter of the current compliance period.

(2) The Executive Officer shall provide reports, as frequently as he/she deems is feasible and appropriate but no less frequently than monthly, to regulated parties and the public containing information necessary or helpful to the functioning of a credit market. Such reports may include recent information on credit transfer volumes, credit prices and price trends and other information determined by the Executive Officer to be of value to market participants and the public. The Executive Officer shall establish, and may periodically modify, a schedule for the routine release of these reports.

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference: Sections 38501, 38510, 38560, 38560.5, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

Section 95489. Regulation Review.

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NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference ~~cited~~: Sections 38501, 38510, 38560, 38560.5, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

Section 95490. Enforcement Protocols.

Notwithstanding section 95484(b~~c~~) and (c~~d~~), the Executive Officer may enter into an enforceable written protocol with any person to identify conditions under which the person may lawfully meet the recordkeeping, reporting, or demonstration of physical pathway requirements in section 95484(b~~c~~) and (c~~d~~). The Executive Officer may only enter into such a protocol if he or she reasonably determines that the provisions in the protocol are necessary under the circumstances and at least as effective as the applicable provisions specified in section 95484(b~~c~~) and (c~~d~~). Any such protocol shall include the person's agreement to be bound by the terms of the protocol.

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). Reference ~~cited~~: Sections 38501, 38510, 38560, 38560.5, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

APPENDIX B

SUMMARY OF LOW CARBON FUEL STANDARD
2011 FIRST QUARTER DATA

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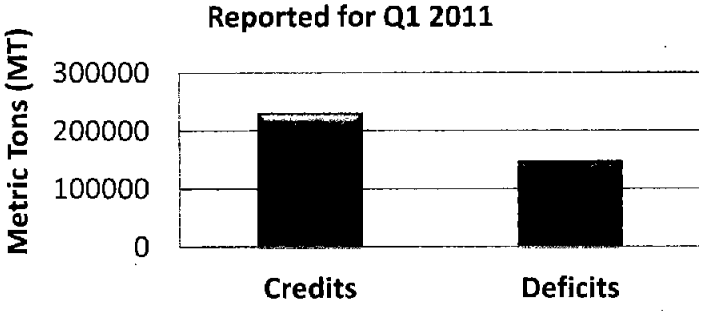
Summary of Low Carbon Fuel Standard
2011 First Quarter (Q1) Data

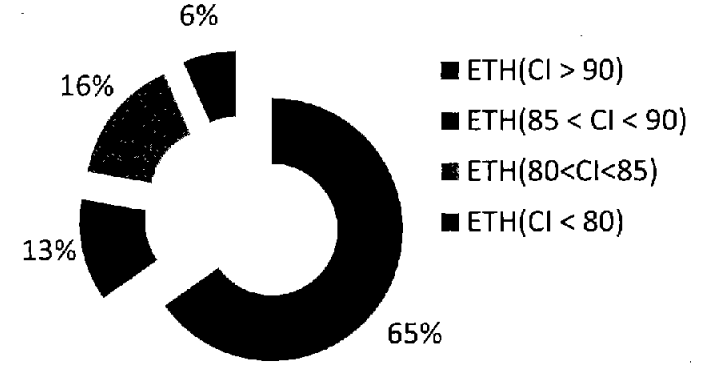
ARB staff has reviewed all first quarter data and can provide the following results. Figure 1 shows the total Q1 credits and deficits reported by regulated parties. As shown, credits exceed deficits by about 75,000 MT; however, this may change as some regulated parties have revised their data.

Fig. 1. Total Credits and Deficits (All Fuels) Reported for Q1 2011



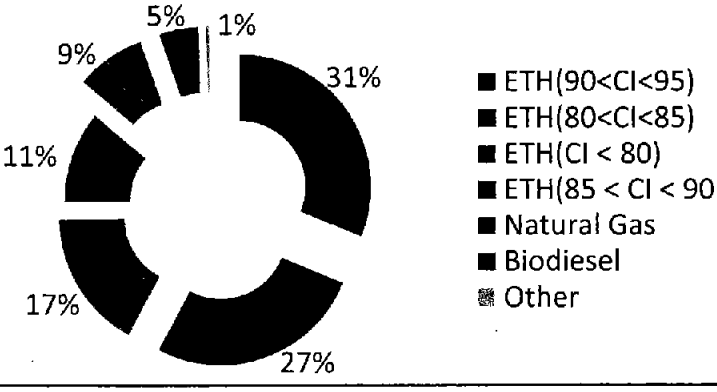
Currently, a majority of the credits are generated through the production and import of ethanol from various production facilities. As shown in Figure 2, almost two-thirds of the facilities supplying the State are producing ethanol with a CI greater than 90. Of these, about a third are producing ethanol with a 95 CI or more. As the LCFS standards become more stringent, this percentage is expected to decline, while the relative contributions of the lower-CI ethanol will increase.

Fig. 2. Percentage By Volume of Different Ethanol Pathways: Q1 2011



As shown in Figure 3, non-ethanol alternative fuels make up 14 percent of the Q1 credits. However, we expect this to increase significantly as the regulation continues to be implemented. Also, proposed amendments to the regulation may facilitate an increase in alternative fuels. Specifically, staff is proposing rule changes to clarify the opt-in and opt-out procedures based on comments received.

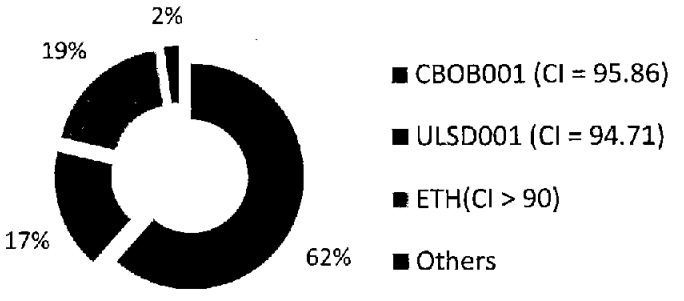
Fig. 3. Total Credits by Fuel Type: Q1 2011



Summary of Low Carbon Fuel Standard
2011 First Quarter (Q1) Data

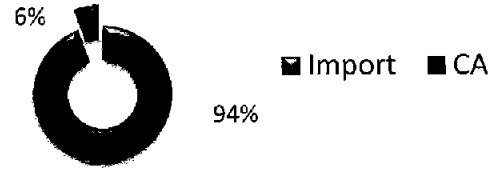
As expected, most deficits result from the sale of CARBOB and ULSD (Fig. 4); however, about 20 percent of the deficits are from ethanol imports with CIs that are higher than the LCFS gasoline standard. ARB staff expects this relative contribution of deficits will decrease as market penetration in California of existing lower-CI ethanol increases over time.

Fig. 4. Total Deficits by Fuel Type: Q1 2011



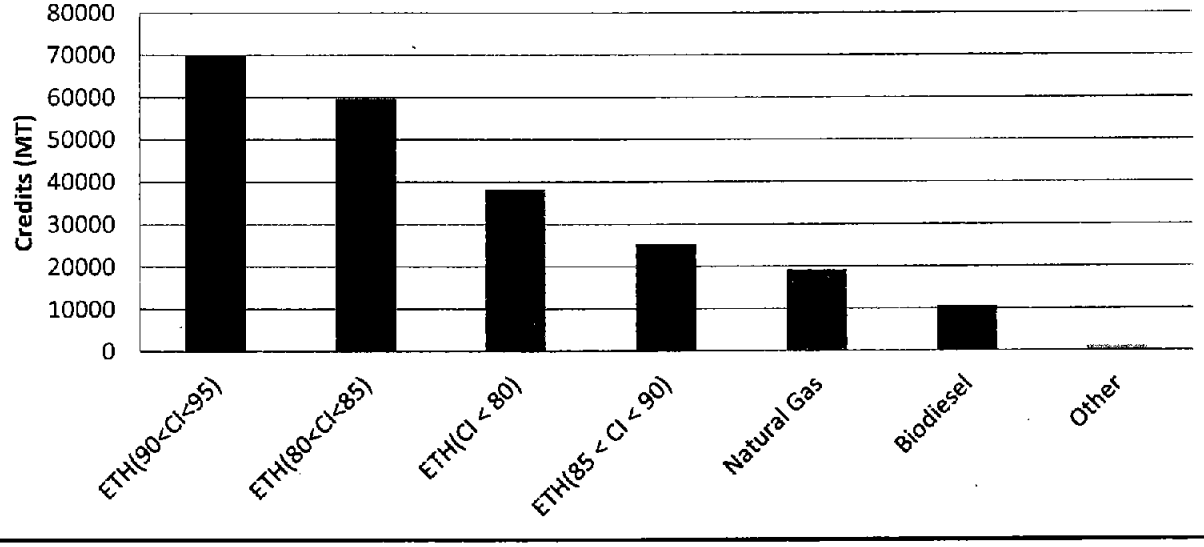
Staff also reviewed the amount of California-produced corn ethanol versus imported product. As Figure 5 shows, the vast majority of corn ethanol used in the State continues to be ethanol that is imported from outside California.

Fig. 5. Ethanol from Corn: Percentage of Total Volume Reported, Q1 2011



Finally, Figure 6 breaks down the total amount of credits generated in Q1 by fuel type. As noted earlier, credits from lower-CI ethanol, natural gas, biodiesel and other transportation fuels (e.g. hydrogen, electricity) are expected to rise with the lower CI standards required under the regulation.

Fig. 6. Tons of Credits Generated By Fuel: Q1 2011



APPENDIX C

CALCULATION OF BASELINE CRUDE AVERAGE CARBON INTENSITY VALUE

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Appendix C

Calculation of Baseline Crude Average Carbon Intensity Value

Composition of Average Crude Oil Refined in California

Table 1 shows the sources of crude oil refined in California for the calendar year 2009. Total volumes of crude oil for California, Alaska, and foreign sources and percentages of crude for each foreign country were obtained from the California Energy Commission.[1] The volume of crude oil produced using thermally enhanced oil recovery (TEOR) in California was obtained from the California Department of Conservation.[2] We assumed that all oil produced using TEOR in California was refined in California.

Table 1: Sources of Crude Oil Refined in California in 2009

Crude Oil Source	Volume (1000 bbl)	Percent of Total CA
California	239,058	
• TEOR	• 117,900	19.48%
• Non-thermal	• 121,158	20.02%
Alaska	91,147	15.06%
Foreign	274,884	
• Saudi Arabia	• 24.92%	11.32%
• Iraq	• 18.68%	8.49%
• Ecuador	• 17.18%	7.80%
• Brazil	• 9.25%	4.20%
• Columbia	• 5.75%	2.61%
• Canada	• 5.08%	2.31%
• Angola	• 5.01%	2.28%
• Oman	• 3.48%	1.58%
• Peru	• 2.10%	0.95%
• Venezuela	• 1.99%	0.90%
• Others	• 6.55%	2.98%

Of the crude oil imported from Canada, we assumed 89 percent was produced using TEOR, bitumen mining and/or upgrading and the remaining crude was produced using conventional recovery methods. Of the crude oil imported from Venezuela, we

[1] California Energy Commission, Energy Almanac Webpage, Oil Supply Sources to California Refineries, viewed on October 6, 2011 at http://energyalmanac.ca.gov/petroleum/statistics/crude_oil_receipts.html.
[2] California Department of Conservation, 2010, Division of Oil, Gas, and Geothermal Resources, 2009 annual Report of the State Oil and Gas Supervisor, page 3.

assumed 51 percent was upgraded prior to transport to California.[3] Of the crude imported from Oman, we assumed 18 percent was recovered using TEOR.[4]

Estimated Carbon Intensity Values for Crude Oil Sources

All crude oil produced using primary or secondary recovery was assigned a "base" carbon intensity value, 4.0 gCO_2/MJ.[5] This value was determined using the GREET model and accounts for crude extraction, venting, and fugitive emissions. Jacobs Consultancy reports similar crude recovery emissions for nine crude sources using primary and secondary recovery methods.[6] Crude recovery estimates obtained using the GHGenius model are also similar and range from 2.2 to 6.3 g/MJ, not including venting or fugitive emissions.[7] Additional emissions from flaring and transport were calculated using state or country-specific data as described below.

Table 2 presents state or country-specific data and calculations for flaring. Data presented for California are continental U.S. values while Alaska data is state specific. Annual flaring volumes are from satellite data published by the National Oceanic and Atmospheric Administration.[8] Crude production values for Alaska, the continental U.S., and foreign countries were obtained from the Energy Information Administration.[9,10] The normalized flaring values are obtained by dividing the annual flaring volumes by the annual crude production volumes. The normalized flaring value is converted to a carbon intensity using a conversion factor of 1.0 scm/bbl being equivalent to 0.49 gCO_2/MJ. The following assumptions were made in deriving the conversion factor:

- The LHV of average crude is 129, 670 BTU/gal.[11] This converts to 5740 MJ/bbl.
- The composition of flared gas is approximately 75 percent methane, 15 percent ethane, 5 percent propane, and 5 percent carbon dioxide.[12]

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[3] California Energy Commission, October 10, 2011, Email Correspondence: Data on Canadian and Venezuelan crude oil production.

[4] Schremp, G., California Energy Commission, 2011, Presentation for Crude Screening Workgroup: Results of Initial Screening Process to Identify Potential HCICOs, revised March 3, 2011.

[5] Wang, M., J. Han, Z. Haq, W. Tyner, M. Wu, and A. Elgowainy, 2011, Energy and greenhouse gas emission effects of corn and cellulosic ethanol with technology improvements and land use changes, Biomass and Bioenergy, 35, 1885-1896.

[6] Jacobs Consultancy, 2011, Presentation: EU Pathway Study – Lifecycle Assessment of Crude Oils in a European Context, September 13, 2011.

[7] O'Connor, Don, October 7, 2011, Email Correspondence: Conventional crude carbon intensity values from GHGenius.

[8] National Oceanic and Atmospheric Administration, 2011, National Geophysical Data Center, Global Gas Flaring Estimates, downloaded from http://www.ngdc.noaa.gov/dmsp/interest/gas_flares.html

[9] U.S. Energy Information Administration, 2011, International Energy Statistics, downloaded from http://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=5&pid=57&aid=1&cid=regions,&syid=2006&eyid=2010&unit=TBPD

[10] U.S. Energy Information Administration, 2011, U.S. Crude Oil Production, downloaded from http://www.eia.gov/dnav/pet/pet_crd_crpdn_adc_mbblpd_a.htm

[11] California Air Resources Board, February 27, 2009, Detailed CA-GREET Pathway for California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB) from Average Crude Refined in California, Version 2.1

[12] Jacobs Consultancy and Life Cycle Associates, 2009, Life Cycle Assessment Comparison of North American and Imported Crudes, prepared for Alberta Energy Research Institute.

- The flared gas is undergoes complete combustion to carbon dioxide producing 2455 gCO_2/scm.
- 1.15 MJ crude feed will result in 1.0 MJ of fuel products.[13]

Table 2: Flaring Data and Calculations for 2009

Crude Source	Flaring (billion scm/yr)	Crude Production (billion bbl/yr)	Normalized Flaring (scm/bbl)	Carbon Intensity (gCO_2/MJ)
California	0.64	1.7	0.38	0.18
Alaska	1.39	0.259	5.37	2.63
Saudi Arabia	3.39	3.01	1.13	0.55
Iraq	8.08	0.873	9.26	4.54
Ecuador	1.28	0.177	7.23	3.54
Brazil	1.59	0.712	2.23	1.09
Columbia	0.48	0.245	1.96	0.96
Canada	1.85	0.942	1.96	0.96
Angola	3.4	0.696	4.89	2.39
Oman	1.89	0.297	6.36	3.12
Peru	0.04	0.026	1.54	0.75
Venezuela	2.79	0.817	3.41	1.67
Others	147.13	26.41	5.57	2.73

Table 3 presents carbon intensity values for transport of crude oil to California. These estimates were determined using the GREET model.

Table 3: Crude Oil Transport

Crude Source	Transport Carbon Intensity (gCO_2/MJ)
California	0.2
Alaska	0.65
Saudi Arabia	1.82
Iraq	1.85
Ecuador	0.75
Brazil	1.31
Columbia	0.78
Canada	0.79
Angola	1.47
Oman	1.75
Peru	0.77
Venezuela	0.87
Others	1.0

[13] Brandt, A. and S. Unnasch, 2010, Energy Intensity and Greenhouse Gas emissions from Thermal Enhanced Oil Recovery, Energy and Fuels, 24, 4581-4589.

All crude oil produced using TEOR, bitumen mining, and/or upgrading was assigned a carbon intensity value for production and transport of 20 gCO_2/MJ. This estimate is based on the following analysis.

- Table 4 shows some literature and model default values for in situ TEOR with upgrading, in situ TEOR without upgrading, and bitumen mining with upgrading.[14,15,16] These values are for Canadian oil sands production. The in situ thermal recovery values assume a steam-to-oil ratio of 3 to 3.4. In 2009, slightly more than half of oil sands production was mined and upgraded with the remainder being in situ production. Approximately 10 percent of in situ production was upgraded. Applying these rough percentages to the default values shown in Table 4 results in an average CI value of 19 g/MJ for Canadian oil sands production and transport. NETL reports similar average carbon intensity for Canadian oil sands of 21 g/MJ.[17]
- Venezuelan extra-heavy crude oil is primarily produced using in situ recovery (thermal and non-thermal) with upgrading. The steam-to-oil ratio for thermal recovery in Venezuela is lower than that for Canada because of higher reservoir temperatures and lower viscosity oil. NETL has estimated an average carbon intensity of 19 g/MJ for production and transport of upgraded Venezuelan extra-heavy crude oil.
- For California TEOR without upgrading, Jacobs provides an estimate of approximately 21 g/MJ which includes an estimated allocation of 2 g/MJ for upstream natural gas emissions. TIAX reports a value of 12.2 g/MJ while Brandt and Unnasch report a value of 27.5 g/MJ.[18]

Table 4: Some Literature CI Values for Crude Produced using TEOR and Mining

Source	In situ TEOR[1] with upgrading to SCO (gCO2e/MJ)	In situ TEOR[1] w/o upgrading to SCO (gCO2e/MJ)	Bitumen mining[2] with upgrading to SCO (gCO2e/MJ)
GHGenius	28.6	13.3	19.7
GREET[3]	18.7	13.6	15.4
Jacobs report[4]	~26	~16	~17
TIAX report	26.7	16.6	12.8
Average value[5]	**25 + 1 = 26**	**15 + 1 = 16**	**16 + 4 + 1 = 21**

Notes for Table 4:

1. In situ TEOR
   a. GHGenius: SAGD with steam-to-oil ratio (SOR) of 3.2
   b. Jacobs: SAGD with SOR of 3.0

[14] O'Connor, Don, September 27, 2010, Email Correspondence (2 messages): GHGenius carbon intensity values for oil sands crude.

[15] Jacobs Consultancy and Life Cycle Associates, 2009, Life Cycle Assessment Comparison of North American and Imported Crudes, prepared for Alberta Energy Research Institute.

[16] TIAX, 2009, Comparison of North American and Imported Crude Oil Lifecycle GHG Emissions, prepared for Alberta Energy Research Institute.

[17] NETL, 2009, An Evaluation of the Extraction, Transport and Refining of Imported Crude Oils and the Impact on Life Cycle Greenhouse Gas Emissions (Appendix A), DOE/NETL-2009/1362.

[18] Brandt, A. and S. Unnasch, 2010, Energy Intensity and Greenhouse Gas Emissions from Thermal Enhanced Oil Recovery, Energy and Fuels, 24, 4581-4589.

c. TIAX:
    i. With upgrading: SAGD with SOR of 3,
    ii. w/o upgrading: CSS with SOR of 3.4
d. GREET: Process method and SOR unknown.

2. Mining carbon intensity values obtained from the literature do not include land use change/tailings pond emissions.
3. GREET values were taken from Table 6-3 in the TIAX report.
4. Jacobs values from Table 8-7 in Jacobs report. These values do not appear to include venting and flaring emissions. Also, there is some uncertainty about allocation of upstream natural gas emissions between recovery and refining in the Jacobs values. Values in Table 4 (above) include upstream natural gas emissions estimates of 2 g/MJ for in situ recovery with upgrading, 1.5 g/MJ for in situ recovery without upgrading, and 1 g/MJ for mining recovery.
5. Average values include emissions associated with transport of crude oil to the refinery. These are dependent on location but typically are about 1 g/MJ. Bitumen mining value also includes 4 g/MJ to account for land use change/tailings pond emissions. Yeh et al. have estimated these emissions at approximately 4 g/MJ (range 0.8 to 10.2 g/MJ).[19]

Calculation of Baseline Crude Average Carbon Intensity Value

Table 5 shows carbon intensity estimates for conventional crude production by state or country as well as the percentage of crude from that state or country produced using TEOR, bitumen mining, and/or upgrading. The "Total CI" for each state or country is a weighted average of the carbon intensity value for conventional production and the assumed value of 20 gCO_2/MJ for crude produced using TEOR, mining, and upgrading. The Baseline Crude Average carbon intensity of 9.72 gCO_2/MJ is obtained by calculating a weighted average of the state and country "Total CI" values.

Table 5: Baseline Crude Average Carbon Intensity

Crude Source	Percentage of Total CA Crude	Conventional Crude CI (g/MJ)	Percentage TEOR, Mining, Upgraded	Total CI (g/MJ)
California	39.5	4.38	49.3	12.08
Alaska	15.06	7.28	0	7.28
Saudi Arabia	11.32	6.37	0	6.37
Iraq	8.49	10.39	0	10.39
Ecuador	7.81	8.29	0	8.29
Brazil	4.2	6.40	0	6.40
Columbia	2.61	5.74	0	5.74
Canada	2.31	5.75	89	18.43
Angola	2.28	7.86	0	7.86
Oman	1.58	8.87	18	10.87
Peru	0.95	5.52	0	5.52
Venezuela	0.9	6.54	51	13.41
Others	2.98	7.73	0	7.73
Weighted Average				**9.72**

[19] Yeh, S., S. Jordaan, A. Brandt, M. Turetsky, S. Spatari, D. Keith, Land Use Greenhouse Gas Emissions from Conventional Oil Production and Oil Sands, *Environ. Sci. Technol.*, 2010, *44* (22), pp 8766–8772.

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1. California Energy Commission, Energy Almanac Webpage, Oil Supply Sources to California Refineries, viewed on October 6, 2011 at http://energyalmanac.ca.gov/petroleum/statistics/crude_oil_receipts.html.

2. California Department of Conservation, 2010, Division of Oil, Gas, and Geothermal Resources, 2009 annual Report of the State Oil and Gas Supervisor, page 3.

3. California Energy Commission, October 10, 2011, Email Correspondence: Data on Canadian and Venezuelan crude oil production.

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5. Wang, M., J. Han, Z. Haq, W. Tyner, M. Wu, and A. Elgowainy, 2011, Energy and greenhouse gas emission effects of corn and cellulosic ethanol with technology improvements and land use changes, Biomass and Bioenergy, 35, 1885-1896.

6. Jacobs Consultancy, 2011, Presentation: EU Pathway Study – Lifecycle Assessment of Crude Oils in a European Context, September 13, 2011.

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9. U.S. Energy Information Administration, 2011, International Energy Statistics, downloaded from http://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=5&pid=57&aid=1&cid=regions,&syid=2006&eyid=2010&unit=TBPD.

10. U.S. Energy Information Administration, 2011, U.S. Crude Oil Production, downloaded from http://www.eia.gov/dnav/pet/pet_crd_crpdn_adc_mbblpd_a.htm

11. California Air Resources Board, February 27, 2009, Detailed CA-GREET Pathway for California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB) from Average Crude Refined in California, Version 2.1.

12. Jacobs Consultancy and Life Cycle Associates, 2009, Life Cycle Assessment Comparison of North American and Imported Crudes, prepared for Alberta Energy Research Institute.

13. Brandt, A. and S. Unnasch, 2010, Energy Intensity and Greenhouse Gas emissions from Thermal Enhanced Oil Recovery, Energy and Fuels, 24, 4581-4589.

14. O'Connor, Don, September 27, 2010, Email Correspondence (2 messages): GHGenius carbon intensity values for oil sands crude.

15. Jacobs Consultancy and Life Cycle Associates, 2009, Life Cycle Assessment Comparison of North American and Imported Crudes, prepared for Alberta Energy Research Institute.

16. TIAX, 2009, Comparison of North American and Imported Crude Oil Lifecycle GHG Emissions, prepared for Alberta Energy Research Institute.

17. NETL, 2009, An Evaluation of the Extraction, Transport and Refining of Imported Crude Oils and the Impact on Life Cycle Greenhouse Gas Emissions (Appendix A), DOE/NETL-2009/1362.

18. Brandt, A. and S. Unnasch, 2010, Energy Intensity and Greenhouse Gas Emissions from Thermal Enhanced Oil Recovery, Energy and Fuels, 24, 4581-4589.

19. Yeh, S., S. Jordaan, A. Brandt, M. Turetsky, S. Spatari, D. Keith, Land Use Greenhouse Gas Emissions from Conventional Oil Production and Oil Sands, *Environ. Sci. Technol.*, 2010, *44* (22), pp 8766–8772.

APPENDIX D

California Environmental Protection Agency
Air Resources Board
Stationary Source Division

Supplement to:

Stationary Source Division, Air Resources Board (February 27, 2009, v.2.1)

"Detailed California-Modified GREET Pathway for
California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB)
from Average Crude Refined in California"

Release Date: October 28, 2011

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Need for a Supplement to the CARBOB Pathway Document

The LCFS regulation considers 2010 as the baseline year against which a ten percent reduction in GHG emissions is mandated by 2020.[1] Because data for crude oil supplied to CA refineries in 2010 was not available during development of the original regulation, Lookup Table carbon intensity values for CARBOB and diesel were based on available crude supply data for the year 2006. At the time, an assumption was made that the carbon intensity for recovery of crude oil supplied to CA refineries would not change substantially between 2006 and the 2010 baseline year. This assumption turned out to be incorrect as the percentages of crude recovered using thermal methods, mining and upgrading have increased.[2,3] Therefore as part of 2011 Regulatory Amendments to the LCFS, ARB staff is proposing updates to the baseline carbon intensity values for CARBOB and diesel using the most recently available comprehensive set of crude oil supply data from the year 2009. Furthermore, it is ARB staff's intention to revise these values again in 2012 as part of a 15-day change to these Regulatory Amendments. In 2012, comprehensive crude oil supply data will be available for the year 2010. ARB staff will be recalculating the "California average" annually to reflect the most current crude slate. To assist in this effort, staff is working with Professor Adam Brandt at Stanford University to develop a lifecycle assessment tool for calculating carbon intensity values for crude oil recovery.[4,5]

Calculation Methodology for the Baseline Crude Average Carbon Intensity Value

We used a simple approach to calculate the Baseline Crude Average carbon intensity value (see Attachment 1 for details). For crude sources produced using thermally enhanced oil recovery (TEOR), bitumen mining and/or upgrading, a single carbon intensity value of 20 gCO2/MJ was assigned. All other crudes were assumed to be produced using conventional primary or secondary recovery methods. For these crude sources we assumed a common "base" carbon intensity value which accounts for extraction, venting, and fugitive emissions and added to this country specific values for flaring and transportation emissions. Crude oil produced in Californa, Canada, Venezuela, and Oman was recovered using a mixture of production methods. In California, approximately half of the crude was produced using TEOR.[6] For Canada we assumed that 89 percent was produced using TEOR, mining and/or upgrading while for Venezuela we assumed 51 percent was produced with upgrading and for Oman we

[1] Proposed Regulation to Implement the Low Carbon Fuels Standard, ISOR Volume 1, 2009, page V-7
[2] California Department of Conservation, 2010, Division of Oil, Gas, and Geothermal Resources, 2009 annual Report of the State Oil and Gas Supervisor, page 3.
[3] California Energy Commission, October 10, 2011, Email Correspondence: Data on Canadian and Venezuelan crude oil production.
[4] Brandt, A. and H. El-Houjeiri, September 15, 2011, Presentation to ARB Staff: Greenhouse Gas Emissions from Conventional and Unconventional Hydrocarbon Production.
[5] El-Houjeiri, H. and A. Brandt, October 3, 2011, Draft Model: Greenhouse Gas (GHG) Emissions from Upstream Petroleum Operations, Version 11.
[6] California Department of Conservation, 2010, Division of Oil, Gas, and Geothermal Resources, 2009 annual Report of the State Oil and Gas Supervisor, page 3.

assumed 18 percent was produced using TEOR.[7,8] The resulting carbon intensity values are shown in Table 1 based on state or country of origin. The Baseline Crude Average carbon intensity, 9.72 gCO_2/MJ, was calculated by weighting these values by the percentage contribution to total crude oil supplied to California refineries.

This value is greater than the value presented in the CARBOB pathway document, 8.07 gCO_2/MJ, for two reasons. First, the calculation methodology is different and results in a slightly greater carbon intensity estimate. Applying the methodology described here to the 2006 crude data results in a carbon intensity for crude recovery and transport of 8.57 gCO_2/MJ. This increase is primarily the result of explicitly accounting for flaring emissions by state or country using satellite data. Crude produced in Alaska, Ecuador, Iraq, Angola, and Oman has flaring emissions that are much greater than assumed in the pathway document. Second, the percentages of TEOR, mining, and/or upgrading have increased from 2006 to 2009. For example, California TEOR has increased from 14.43 percent of total California crude in 2006 to 19.48 percent in 2009. Canadian, Venezuelan, and Omani crude imports have also increased.

Table 1: Baseline Crude Average Carbon Intensity

Crude Source	Percentage of Total CA Crude	Conventional Crude CI (g/MJ)	Percentage TEOR, Mining, Upgraded	Total CI (g/MJ)
California	39.5	4.38	49.3	12.08
Alaska	15.06	7.28	0	7.28
Saudi Arabia	11.32	6.37	0	6.37
Iraq	8.49	10.39	0	10.39
Ecuador	7.81	8.29	0	8.29
Brazil	4.2	6.40	0	6.40
Columbia	2.61	5.74	0	5.74
Canada	2.31	5.75	89	18.43
Angola	2.28	7.86	0	7.86
Oman	1.58	8.87	18	10.87
Peru	0.95	5.52	0	5.52
Venezuela	0.9	6.54	51	13.41
Others	2.98	7.73	0	7.73
Weighted Average				**9.72**

[7] California Energy Commission, October 10, 2011, Email Correspondence: Data on Canadian and Venezuelan crude oil production.
[8] Schremp, G., California Energy Commission, 2011, Presentation for Crude Screening Workgroup: Results of Initial Screening Process to Identify Potential HCICOs, revised March 3, 2011.

Baseline Average Carbon Intensity Value for CARBOB

The Baseline Average carbon intensity value for CARBOB, 97.51 gCO_2/MJ, was determined by substituting the Baseline Crude Average carbon intensity value discussed above for the crude recovery (6.93 gCO_2/MJ) and crude transport (1.14 gCO_2/MJ) values reported in the CARBOB pathway document.[9]

[9] California Air Resources Board, February 27, 2009, Detailed CA-GREET Pathway for California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB) from Average Crude Refined in California, Version 2.1

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ATTACHMENT 1

Calculation of Baseline Crude Average Carbon Intensity Value

Composition of Average Crude Oil Refined in California

Table 1 shows the sources of crude oil refined in California for the calendar year 2009. Total volumes of crude oil for California, Alaska, and foreign sources and percentages of crude for each foreign country were obtained from the California Energy Commission.[10] The volume of crude oil produced using thermally enhanced oil recovery (TEOR) in California was obtained from the California Department of Conservation.[11] We assumed that all oil produced using TEOR in California was refined in California.

Table 1: Sources of Crude Oil Refined in California in 2009

Crude Oil Source	Volume (1000 bbl)	Percent of Total CA
California	239,058	
• TEOR	• 117,900	19.48%
• Non-thermal	• 121,158	20.02%
Alaska	91,147	15.06%
Foreign	274,884	
• Saudi Arabia	• 24.92%	11.32%
• Iraq	• 18.68%	8.49%
• Ecuador	• 17.18%	7.80%
• Brazil	• 9.25%	4.20%
• Columbia	• 5.75%	2.61%
• Canada	• 5.08%	2.31%
• Angola	• 5.01%	2.28%
• Oman	• 3.48%	1.58%
• Peru	• 2.10%	0.95%
• Venezuela	• 1.99%	0.90%
• Others	• 6.55%	2.98%

Of the crude oil imported from Canada, we assumed 89 percent was produced using TEOR, bitumen mining and/or upgrading and the remaining crude was produced using conventional recovery methods. Of the crude oil imported from Venezuela, we

[10] California Energy Commission, Energy Almanac Webpage, Oil Supply Sources to California Refineries, viewed on October 6, 2011 at http://energyalmanac.ca.gov/petroleum/statistics/crude_oil_receipts.html.
[11] California Department of Conservation, 2010, Division of Oil, Gas, and Geothermal Resources, 2009 annual Report of the State Oil and Gas Supervisor, page 3.

assumed 51 percent was upgraded prior to transport to California.[12] Of the crude imported from Oman, we assumed 18 percent was recovered using TEOR.[13]

Estimated Carbon Intensity Values for Crude Oil Sources

All crude oil produced using primary or secondary recovery was assigned a "base" carbon intensity value, 4.0 gCO_2/MJ.[14] This value was determined using the GREET model and accounts for crude extraction, venting, and fugitive emissions. Jacobs Consultancy reports similar crude recovery emissions for nine crude sources using primary and secondary recovery methods.[15] Crude recovery estimates obtained using the GHGenius model are also similar and range from 2.2 to 6.3 g/MJ, not including venting or fugitive emissions.[16] Additional emissions from flaring and transport were calculated using state or country-specific data as described below.

Table 2 presents state or country-specific data and calculations for flaring. Data presented for California are continental U.S. values while Alaska data is state specific. Annual flaring volumes are from satellite data published by the National Oceanic and Atmospheric Administration.[17] Crude production values for Alaska, the continental U.S., and foreign countries were obtained from the Energy Information Administration.[18,19] The normalized flaring values are obtained by dividing the annual flaring volumes by the annual crude production volumes. The normalized flaring value is converted to a carbon intensity using a conversion factor of 1.0 scm/bbl being equivalent to 0.49 gCO_2/MJ. The following assumptions were made in deriving the conversion factor:

- The LHV of average crude is 129, 670 BTU/gal.[20] This converts to 5740 MJ/bbl.
- The composition of flared gas is approximately 75 percent methane, 15 percent ethane, 5 percent propane, and 5 percent carbon dioxide.[21]

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[12] California Energy Commission, October 10, 2011, Email Correspondence: Data on Canadian and Venezuelan crude oil production.
[13] Schremp, G., California Energy Commission, 2011, Presentation for Crude Screening Workgroup: Results of Initial Screening Process to Identify Potential HCICOs, revised March 3, 2011.
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[15] Jacobs Consultancy, 2011, Presentation: EU Pathway Study – Lifecycle Assessment of Crude Oils in a European Context, September 13, 2011.
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[19] U.S. Energy Information Administration, 2011, U.S. Crude Oil Production, downloaded from http://www.eia.gov/dnav/pet/pet_crd_crpdn_adc_mbblpd_a.htm
[20] California Air Resources Board, February 27, 2009, Detailed CA-GREET Pathway for California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB) from Average Crude Refined in California, Version 2.1
[21] Jacobs Consultancy and Life Cycle Associates, 2009, Life Cycle Assessment Comparison of North American and Imported Crudes, prepared for Alberta Energy Research Institute.

- The flared gas is undergoes complete combustion to carbon dioxide producing 2455 gCO_2/scm.
- 1.15 MJ crude feed will result in 1.0 MJ of fuel products.[22]

Table 2: Flaring Data and Calculations for 2009

Crude Source	Flaring (billion scm/yr)	Crude Production (billion bbl/yr)	Normalized Flaring (scm/bbl)	Carbon Intensity (gCO_2/MJ)
California	0.64	1.7	0.38	0.18
Alaska	1.39	0.259	5.37	2.63
Saudi Arabia	3.39	3.01	1.13	0.55
Iraq	8.08	0.873	9.26	4.54
Ecuador	1.28	0.177	7.23	3.54
Brazil	1.59	0.712	2.23	1.09
Columbia	0.48	0.245	1.96	0.96
Canada	1.85	0.942	1.96	0.96
Angola	3.4	0.696	4.89	2.39
Oman	1.89	0.297	6.36	3.12
Peru	0.04	0.026	1.54	0.75
Venezuela	2.79	0.817	3.41	1.67
Others	147.13	26.41	5.57	2.73

Table 3 presents carbon intensity values for transport of crude oil to California. These estimates were determined using the GREET model.

Table 3: Crude Oil Transport

Crude Source	Transport Carbon Intensity (gCO_2/MJ)
California	0.2
Alaska	0.65
Saudi Arabia	1.82
Iraq	1.85
Ecuador	0.75
Brazil	1.31
Columbia	0.78
Canada	0.79
Angola	1.47
Oman	1.75
Peru	0.77
Venezuela	0.87
Others	1.0

[22] Brandt, A. and S. Unnasch, 2010, Energy Intensity and Greenhouse Gas emissions from Thermal Enhanced Oil Recovery, Energy and Fuels, 24, 4581-4589.

All crude oil produced using TEOR, bitumen mining, and/or upgrading was assigned a carbon intensity value for production and transport of 20 gCO_2/MJ. This estimate is based on the following analysis.

- Table 4 shows some literature and model default values for in situ TEOR with upgrading, in situ TEOR without upgrading, and bitumen mining with upgrading.[23,24,25] These values are for Canadian oil sands production. The in situ thermal recovery values assume a steam-to-oil ratio of 3 to 3.4. In 2009, slightly more than half of oil sands production was mined and upgraded with the remainder being in situ production. Approximately 10 percent of in situ production was upgraded. Applying these rough percentages to the default values shown in Table 4 results in an average CI value of 19 g/MJ for Canadian oil sands production and transport. NETL reports similar average carbon intensity for Canadian oil sands of 21 g/MJ.[26]
- Venezuelan extra-heavy crude oil is primarily produced using in situ recovery (thermal and non-thermal) with upgrading. The steam-to-oil ratio for thermal recovery in Venezuela is lower than that for Canada because of higher reservoir temperatures and lower viscosity oil. NETL has estimated an average carbon intensity of 19 g/MJ for production and transport of upgraded Venezuelan extra-heavy crude oil.
- For California TEOR without upgrading, Jacobs provides an estimate of approximately 21 g/MJ which includes an estimated allocation of 2 g/MJ for upstream natural gas emissions. TIAX reports a value of 12.2 g/MJ while Brandt and Unnasch report a value of 27.5 g/MJ.[27]

Table 4: Some Literature CI Values for Crude Produced using TEOR and Mining

Source	In situ TEOR[1] with upgrading to SCO (gCO2e/MJ)	In situ TEOR[1] w/o upgrading to SCO (gCO2e/MJ)	Bitumen mining[2] with upgrading to SCO (gCO2e/MJ)
GHGenius	28.6	13.3	19.7
GREET[3]	18.7	13.6	15.4
Jacobs report[4]	~26	~16	~17
TIAX report	26.7	16.6	12.8
Average value[5]	**25 + 1 = 26**	**15 + 1 = 16**	**16 + 4 + 1 = 21**

Notes for Table 4:

1. In situ TEOR
   a. GHGenius: SAGD with steam-to-oil ratio (SOR) of 3.2
   b. Jacobs: SAGD with SOR of 3.0

[23] O'Connor, Don, September 27, 2010, Email Correspondence (2 messages): GHGenius carbon intensity values for oil sands crude.

[24] Jacobs Consultancy and Life Cycle Associates, 2009, Life Cycle Assessment Comparison of North American and Imported Crudes, prepared for Alberta Energy Research Institute.

[25] TIAX, 2009, Comparison of North American and Imported Crude Oil Lifecycle GHG Emissions, prepared for Alberta Energy Research Institute.

[26] NETL, 2009, An Evaluation of the Extraction, Transport and Refining of Imported Crude Oils and the Impact on Life Cycle Greenhouse Gas Emissions (Appendix A), DOE/NETL-2009/1362.

[27] Brandt, A. and S. Unnasch, 2010, Energy Intensity and Greenhouse Gas Emissions from Thermal Enhanced Oil Recovery, Energy and Fuels, 24, 4581-4589.

c. TIAX:
   i. With upgrading: SAGD with SOR of 3,
   ii. w/o upgrading: CSS with SOR of 3.4
d. GREET: Process method and SOR unknown.

2. Mining carbon intensity values obtained from the literature do not include land use change/tailings pond emissions.
3. GREET values were taken from Table 6-3 in the TIAX report.
4. Jacobs values from Table 8-7 in Jacobs report. These values do not appear to include venting and flaring emissions. Also, there is some uncertainty about allocation of upstream natural gas emissions between recovery and refining in the Jacobs values. Values in Table 4 (above) include upstream natural gas emissions estimates of 2 g/MJ for in situ recovery with upgrading, 1.5 g/MJ for in situ recovery without upgrading, and 1 g/MJ for mining recovery.
5. Average values include emissions associated with transport of crude oil to the refinery. These are dependent on location but typically are about 1 g/MJ. Bitumen mining value also includes 4 g/MJ to account for land use change/tailings pond emissions. Yeh et al. have estimated these emissions at approximately 4 g/MJ (range 0.8 to 10.2 g/MJ).[28]

Calculation of Baseline Crude Average Carbon Intensity Value

Table 5 shows carbon intensity estimates for conventional crude production by state or country as well as the percentage of crude from that state or country produced using TEOR, bitumen mining, and/or upgrading. The "Total CI" for each state or country is a weighted average of the carbon intensity value for conventional production and the assumed value of 20 gCO_2/MJ for crude produced using TEOR, mining, and upgrading. The Baseline Crude Average carbon intensity of 9.72 gCO_2/MJ is obtained by calculating a weighted average of the state and country "Total CI" values.

Table 5: Baseline Crude Average Carbon Intensity

Crude Source	Percentage of Total CA Crude	Conventional Crude CI (g/MJ)	Percentage TEOR, Mining, Upgraded	Total CI (g/MJ)
California	39.5	4.38	49.3	12.08
Alaska	15.06	7.28	0	7.28
Saudi Arabia	11.32	6.37	0	6.37
Iraq	8.49	10.39	0	10.39
Ecuador	7.81	8.29	0	8.29
Brazil	4.2	6.40	0	6.40
Columbia	2.61	5.74	0	5.74
Canada	2.31	5.75	89	18.43
Angola	2.28	7.86	0	7.86
Oman	1.58	8.87	18	10.87
Peru	0.95	5.52	0	5.52
Venezuela	0.9	6.54	51	13.41
Others	2.98	7.73	0	7.73
Weighted Average				**9.72**

[28] Yeh, S., S. Jordaan, A. Brandt, M. Turetsky, S. Spatari, D. Keith, Land Use Greenhouse Gas Emissions from Conventional Oil Production and Oil Sands, *Environ. Sci. Technol.*, 2010, *44* (22), pp 8766–8772.

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3. California Energy Commission, October 10, 2011, Email Correspondence: Data on Canadian and Venezuelan crude oil production.

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6. California Department of Conservation, 2010, Division of Oil, Gas, and Geothermal Resources, 2009 annual Report of the State Oil and Gas Supervisor, page 3

7. California Energy Commission, October 10, 2011, Email Correspondence: Data on Canadian and Venezuelan crude oil production.

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17. National Oceanic and Atmospheric Administration, 2011, National Geophysical Data Center, Global Gas Flaring Estimates, downloaded from http://www.ngdc.noaa.gov/dmsp/interest/gas_flares.html.

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23. O'Connor, Don, September 27, 2010, Email Correspondence (2 messages): GHGenius carbon intensity values for oil sands crude.

24. Jacobs Consultancy and Life Cycle Associates, 2009, Life Cycle Assessment Comparison of North American and Imported Crudes, prepared for Alberta Energy Research Institute.

25. TIAX, 2009, Comparison of North American and Imported Crude Oil Lifecycle GHG Emissions, prepared for Alberta Energy Research Institute.

26. NETL, 2009, An Evaluation of the Extraction, Transport and Refining of Imported Crude Oils and the Impact on Life Cycle Greenhouse Gas Emissions (Appendix A), DOE/NETL-2009/1362.

27. Brandt, A. and S. Unnasch, 2010, Energy Intensity and Greenhouse Gas Emissions from Thermal Enhanced Oil Recovery, Energy and Fuels, 24, 4581-4589.

28. Yeh, S., S. Jordaan, A. Brandt, M. Turetsky, S. Spatari, D. Keith, Land Use Greenhouse Gas Emissions from Conventional Oil Production and Oil Sands, *Environ. Sci. Technol.*, 2010, *44* (22), pp 8766–8772.

APPENDIX E

California Environmental Protection Agency
Air Resources Board
Stationary Source Division

Supplement to:

Stationary Source Division, Air Resources Board (February 27, 2009, v.2.1)

"Detailed California-Modified GREET Pathway for
California Reformulated Gasoline (CaRFG)"

Release Date: October 28, 2011

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Need for a Supplement to the CaRFG Pathway Document

The LCFS compliance schedule for gasoline and substitutes for gasoline is based on the carbon intensity value for CaRFG. As part of the 2011 Regulatory Amendments to the LCFS, ARB staff is proposing a revision to the Baseline Average carbon intensity value for CARBOB that increases the value from 95.86 to 97.51 gCO_2/MJ.[1] Because Baseline Average CaRFG is assumed to contain approximately 90 percent CARBOB and 10 percent California Average corn ethanol by volume, the carbon intensity value for CaRFG must be updated as well.

Baseline Average Carbon Intensity Value for CaRFG

On the basis of energy content, CaRFG is assumed to contain 93.48 percent CARBOB and 6.52 percent California Average corn ethanol.[2] Applying this weighting to carbon intensity values for CARBOB, 97.51 gCO_2/MJ, and ethanol, 95.66 gCO_2/MJ, results in a Baseline Average carbon intensity value for CaRFG of 97.39 gCO_2/MJ.

[1] California Air Resources Board: Supplement to Stationary Source Division (February 27, 2009, v.2.1) Detailed California-Modified GREET Pathway for California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB) from Average Crude Refined in California.
[2] California Air Resources Board: Stationary Source Division (February 27, 2009, v.2.1) Detailed California-Modified GREET Pathway for California Reformulated Gasoline (CaRFG).

APPENDIX F

California Environmental Protection Agency
Air Resources Board
Stationary Source Division

Supplement to:

Stationary Source Division, Air Resources Board (February 28, 2009, v.2.1)

"Detailed California-Modified GREET Pathway for Ultra Low Sulfur Diesel (ULSD) from Average Crude Refined in California"

Release Date: October 28, 2011

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Need for a Supplement to the ULSD Pathway Document

The LCFS regulation considers 2010 as the baseline year against which a ten percent reduction in GHG emissions is mandated by 2020.[1] Because data for crude oil supplied to CA refineries in 2010 was not available during development of the original regulation, Lookup Table carbon intensity values for CARBOB and diesel were based on available crude supply data for the year 2006. At the time, an assumption was made that the carbon intensity for recovery of crude oil supplied to CA refineries would not change substantially between 2006 and the 2010 baseline year. This assumption turned out to be incorrect as the percentages of crude recovered using thermal methods, mining and upgrading have increased.[2,3] Therefore as part of 2011 Regulatory Amendments to the LCFS, ARB staff is proposing updates to the baseline carbon intensity values for CARBOB and diesel using the most recently available comprehensive set of crude oil supply data from the year 2009. Furthermore, it is ARB staff's intention to revise these values again in 2012 as part of a 15-day change to these Regulatory Amendments. In 2012, comprehensive crude oil supply data will be available for the year 2010. ARB staff will be recalculating the "California average" annually to reflect the most current crude slate. To assist in this effort, staff is working with Professor Adam Brandt at Stanford University to develop a lifecycle assessment tool for calculating carbon intensity values for crude oil recovery.[4,5]

Calculation Methodology for the Baseline Crude Average Carbon Intensity Value

We used a simple approach to calculate the Baseline Crude Average carbon intensity value (see Attachment 1 for details). For crude sources produced using thermally enhanced oil recovery (TEOR), bitumen mining and/or upgrading, a single carbon intensity value of 20 gCO2/MJ was assigned. All other crudes were assumed to be produced using conventional primary or secondary recovery methods. For these crude sources we assumed a common "base" carbon intensity value which accounts for extraction, venting, and fugitive emissions and added to this country specific values for flaring and transportation emissions. Crude oil produced in California, Canada, Venezuela, and Oman was recovered using a mixture of production methods. In California, approximately half of the crude was produced using TEOR.[6] For Canada we assumed that 89 percent was produced using TEOR, mining and/or upgrading while for Venezuela we assumed 51 percent was produced with upgrading and for Oman we

[1] Proposed Regulation to Implement the Low Carbon Fuels Standard, ISOR Volume 1, 2009, page V-7
[2] California Department of Conservation, 2010, Division of Oil, Gas, and Geothermal Resources, 2009 annual Report of the State Oil and Gas Supervisor, page 3.
[3] California Energy Commission, October 10, 2011, Email Correspondence: Data on Canadian and Venezuelan crude oil production.
[4] Brandt, A. and H. El-Houjeiri, September 15, 2011, Presentation to ARB Staff: Greenhouse Gas Emissions from Conventional and Unconventional Hydrocarbon Production.
[5] El-Houjeiri, H. and A. Brandt, October 3, 2011, Draft Model: Greenhouse Gas (GHG) Emissions from Upstream Petroleum Operations, Version 11.
[6] California Department of Conservation, 2010, Division of Oil, Gas, and Geothermal Resources, 2009 annual Report of the State Oil and Gas Supervisor, page 3.

assumed 18 percent was produced using TEOR.[7,8] The resulting carbon intensity values are shown in Table 1 based on state or country of origin. The Baseline Crude Average carbon intensity, 9.72 gCO_2/MJ, was calculated by weighting these values by the percentage contribution to total crude oil supplied to California refineries.

This value is greater than the value presented in the ULSD pathway document, 8.07 gCO_2/MJ, for two reasons. First, the calculation methodology is different and results in a slightly greater carbon intensity estimate. Applying the methodology described here to the 2006 crude data results in a carbon intensity for crude recovery and transport of 8.57 gCO_2/MJ. This increase is primarily the result of explicitly accounting for flaring emissions by state or country using satellite data. Crude produced in Alaska, Ecuador, Iraq, Angola, and Oman has flaring emissions that are much greater than assumed in the pathway document. Second, the percentages of TEOR, mining, and/or upgrading have increased from 2006 to 2009. For example, California TEOR has increased from 14.43 percent of total California crude in 2006 to 19.48 percent in 2009. Canadian, Venezuelan, and Omani crude imports have also increased.

Table 1: Baseline Crude Average Carbon Intensity

Crude Source	Percentage of Total CA Crude	Conventional Crude CI (g/MJ)	Percentage TEOR, Mining, Upgraded	Total CI (g/MJ)
California	39.5	4.38	49.3	12.08
Alaska	15.06	7.28	0	7.28
Saudi Arabia	11.32	6.37	0	6.37
Iraq	8.49	10.39	0	10.39
Ecuador	7.81	8.29	0	8.29
Brazil	4.2	6.40	0	6.40
Columbia	2.61	5.74	0	5.74
Canada	2.31	5.75	89	18.43
Angola	2.28	7.86	0	7.86
Oman	1.58	8.87	18	10.87
Peru	0.95	5.52	0	5.52
Venezuela	0.9	6.54	51	13.41
Others	2.98	7.73	0	7.73
Weighted Average				**9.72**

[7] California Energy Commission, October 10, 2011, Email Correspondence: Data on Canadian and Venezuelan crude oil production.
[8] Schremp, G., California Energy Commission, 2011, Presentation for Crude Screening Workgroup: Results of Initial Screening Process to Identify Potential HCICOs, revised March 3, 2011.

Baseline Average Carbon Intensity Value for ULSD

The Baseline Average carbon intensity value for ULSD, 96.36 gCO_2/MJ, was determined by substituting the Baseline Crude Average carbon intensity value discussed above for the crude recovery (6.93 gCO_2/MJ) and crude transport (1.14 gCO_2/MJ) values reported in the ULSD pathway document.[9]

[9] California Air Resources Board, February 28, 2009, Detailed CA-GREET Pathway for Ultra Low Sulfur Diesel (ULSD) from Average Crude Refined in California, Version 2.1

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ATTACHMENT 1

Calculation of Baseline Crude Average Carbon Intensity Value

Composition of Average Crude Oil Refined in California

Table 1 shows the sources of crude oil refined in California for the calendar year 2009. Total volumes of crude oil for California, Alaska, and foreign sources and percentages of crude for each foreign country were obtained from the California Energy Commission.[10] The volume of crude oil produced using thermally enhanced oil recovery (TEOR) in California was obtained from the California Department of Conservation.[11] We assumed that all oil produced using TEOR in California was refined in California.

Table 1: Sources of Crude Oil Refined in California in 2009

Crude Oil Source	Volume (1000 bbl)	Percent of Total CA
California	239,058	
• TEOR	• 117,900	19.48%
• Non-thermal	• 121,158	20.02%
Alaska	91,147	15.06%
Foreign	274,884	
• Saudi Arabia	• 24.92%	11.32%
• Iraq	• 18.68%	8.49%
• Ecuador	• 17.18%	7.80%
• Brazil	• 9.25%	4.20%
• Columbia	• 5.75%	2.61%
• Canada	• 5.08%	2.31%
• Angola	• 5.01%	2.28%
• Oman	• 3.48%	1.58%
• Peru	• 2.10%	0.95%
• Venezuela	• 1.99%	0.90%
• Others	• 6.55%	2.98%

Of the crude oil imported from Canada, we assumed 89 percent was produced using TEOR, bitumen mining and/or upgrading and the remaining crude was produced using conventional recovery methods. Of the crude oil imported from Venezuela, we

[10] California Energy Commission, Energy Almanac Webpage, Oil Sources to California Refineries, viewed on October 6, 2011 at http://energyalmanac.ca.gov/petroleum/statistics/crude_oil_receipts.html.
[11] California Department of Conservation, 2010, Division of Oil, Gas, and Geothermal Resources, 2009 annual Report of the State Oil and Gas Supervisor, page 3.

assumed 51 percent was upgraded prior to transport to California.[12] Of the crude imported from Oman, we assumed 18 percent was recovered using TEOR.[13]

Estimated Carbon Intensity Values for Crude Oil Sources

All crude oil produced using primary or secondary recovery was assigned a "base" carbon intensity value, 4.0 gCO_2/MJ.[14] This value was determined using the GREET model and accounts for crude extraction, venting, and fugitive emissions. Jacobs Consultancy reports similar crude recovery emissions for nine crude sources using primary and secondary recovery methods.[15] Crude recovery estimates obtained using the GHGenius model are also similar and range from 2.2 to 6.3 g/MJ, not including venting or fugitive emissions.[16] Additional emissions from flaring and transport were calculated using state or country-specific data as described below.

Table 2 presents state or country-specific data and calculations for flaring. Data presented for California are continental U.S. values while Alaska data is state specific. Annual flaring volumes are from satellite data published by the National Oceanic and Atmospheric Administration.[17] Crude production values for Alaska, the continental U.S., and foreign countries were obtained from the Energy Information Administration.[18,19] The normalized flaring values are obtained by dividing the annual flaring volumes by the annual crude production volumes. The normalized flaring value is converted to a carbon intensity using a conversion factor of 1.0 scm/bbl being equivalent to 0.49 gCO_2/MJ. The following assumptions were made in deriving the conversion factor:

- The LHV of average crude is 129, 670 BTU/gal.[20] This converts to 5740 MJ/bbl.
- The composition of flared gas is approximately 75 percent methane, 15 percent ethane, 5 percent propane, and 5 percent carbon dioxide.[21]

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[12] California Energy Commission, October 10, 2011, Email Correspondence: Data on Canadian and Venezuelan crude oil production.

[13] Schremp, G., California Energy Commission, 2011, Presentation for Crude Screening Workgroup: Results of Initial Screening Process to Identify Potential HCICOs, revised March 3, 2011.

[14] Wang, M., J. Han, Z. Haq, W. Tyner, M. Wu, and A. Elgowainy, 2011, Energy and greenhouse gas emission effects of corn and cellulosic ethanol with technology improvements and land use changes, Biomass and Bioenergy, 35, 1885-1896.

[15] Jacobs Consultancy, 2011, Presentation: EU Pathway Study – Lifecycle Assessment of Crude Oils in a European Context, September 13, 2011.

[16] O'Connor, Don, October 7, 2011, Email Correspondence: Conventional crude carbon intensity values from GHGenius.

[17] National Oceanic and Atmospheric Administration, 2011, National Geophysical Data Center, Global Gas Flaring Estimates, downloaded from http://www.ngdc.noaa.gov/dmsp/interest/gas_flares.html

[18] U.S. Energy Information Administration, 2011, International Energy Statistics, downloaded from http://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=5&pid=57&aid=1&cid=regions,&syid=2006&eyid=2010&unit=TBPD

[19] U.S. Energy Information Administration, 2011, U.S. Crude Oil Production, downloaded from http://www.eia.gov/dnav/pet/pet_crd_crpdn_adc_mbblpd_a.htm

[20] California Air Resources Board, February 27, 2009, Detailed CA-GREET Pathway for California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB) from Average Crude Refined in California, Version 2.1

[21] Jacobs Consultancy and Life Cycle Associates, 2009, Life Cycle Assessment Comparison of North American and Imported Crudes, prepared for Alberta Energy Research Institute.

- The flared gas is undergoes complete combustion to carbon dioxide producing 2455 gCO_2/scm.
- 1.15 MJ crude feed will result in 1.0 MJ of fuel products.[22]

Table 2: Flaring Data and Calculations for 2009

Crude Source	Flaring (billion scm/yr)	Crude Production (billion bbl/yr)	Normalized Flaring (scm/bbl)	Carbon Intensity (gCO_2/MJ)
California	0.64	1.7	0.38	0.18
Alaska	1.39	0.259	5.37	2.63
Saudi Arabia	3.39	3.01	1.13	0.55
Iraq	8.08	0.873	9.26	4.54
Ecuador	1.28	0.177	7.23	3.54
Brazil	1.59	0.712	2.23	1.09
Columbia	0.48	0.245	1.96	0.96
Canada	1.85	0.942	1.96	0.96
Angola	3.4	0.696	4.89	2.39
Oman	1.89	0.297	6.36	3.12
Peru	0.04	0.026	1.54	0.75
Venezuela	2.79	0.817	3.41	1.67
Others	147.13	26.41	5.57	2.73

Table 3 presents carbon intensity values for transport of crude oil to California. These estimates were determined using the GREET model.

Table 3: Crude Oil Transport

Crude Source	Transport Carbon Intensity (gCO_2/MJ)
California	0.2
Alaska	0.65
Saudi Arabia	1.82
Iraq	1.85
Ecuador	0.75
Brazil	1.31
Columbia	0.78
Canada	0.79
Angola	1.47
Oman	1.75
Peru	0.77
Venezuela	0.87
Others	1.0

[22] Brandt, A. and S. Unnasch, 2010, Energy Intensity and Greenhouse Gas emissions from Thermal Enhanced Oil Recovery, Energy and Fuels, 24, 4581-4589.

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- Venezuelan extra-heavy crude oil is primarily produced using in situ recovery (thermal and non-thermal) with upgrading. The steam-to-oil ratio for thermal recovery in Venezuela is lower than that for Canada because of higher reservoir temperatures and lower viscosity oil. NETL has estimated an average carbon intensity of 19 g/MJ for production and transport of upgraded Venezuelan extra-heavy crude oil.
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   c. TIAX:
      i. With upgrading: SAGD with SOR of 3,
      ii. w/o upgrading: CSS with SOR of 3.4
   d. GREET: Process method and SOR unknown.
2. Mining carbon intensity values obtained from the literature do not include land use change/tailings pond emissions.
3. GREET values were taken from Table 6-3 in the TIAX report.
4. Jacobs values from Table 8-7 in Jacobs report. These values do not appear to include venting and flaring emissions. Also, there is some uncertainty about allocation of upstream natural gas emissions between recovery and refining in the Jacobs values. Values in Table 4 (above) include upstream natural gas emissions estimates of 2 g/MJ for in situ recovery with upgrading, 1.5 g/MJ for in situ recovery without upgrading, and 1 g/MJ for mining recovery.
5. Average values include emissions associated with transport of crude oil to the refinery. These are dependent on location but typically are about 1 g/MJ. Bitumen mining value also includes 4 g/MJ to account for land use change/tailings pond emissions. Yeh et al. have estimated these emissions at approximately 4 g/MJ (range 0.8 to 10.2 g/MJ).[28]

Calculation of Baseline Crude Average Carbon Intensity Value

Table 5 shows carbon intensity estimates for conventional crude production by state or country as well as the percentage of crude from that state or country produced using TEOR, bitumen mining, and/or upgrading. The "Total CI" for each state or country is a weighted average of the carbon intensity value for conventional production and the assumed value of 20 gCO_2/MJ for crude produced using TEOR, mining, and upgrading. The Baseline Crude Average carbon intensity of 9.72 gCO_2/MJ is obtained by calculating a weighted average of the state and country "Total CI" values.

Table 5: Baseline Crude Average Carbon Intensity

Crude Source	Percentage of Total CA Crude	Conventional Crude CI (g/MJ)	Percentage TEOR, Mining, Upgraded	Total CI (g/MJ)
California	39.5	4.38	49.3	12.08
Alaska	15.06	7.28	0	7.28
Saudi Arabia	11.32	6.37	0	6.37
Iraq	8.49	10.39	0	10.39
Ecuador	7.81	8.29	0	8.29
Brazil	4.2	6.40	0	6.40
Columbia	2.61	5.74	0	5.74
Canada	2.31	5.75	89	18.43
Angola	2.28	7.86	0	7.86
Oman	1.58	8.87	18	10.87
Peru	0.95	5.52	0	5.52
Venezuela	0.9	6.54	51	13.41
Others	2.98	7.73	0	7.73
Weighted Average				**9.72**

[28] Yeh, S., S. Jordaan, A. Brandt, M. Turetsky, S. Spatari, D. Keith, Land Use Greenhouse Gas Emissions from Conventional Oil Production and Oil Sands, *Environ. Sci. Technol.*, 2010, *44* (22), pp 8766–8772.

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APPENDIX G

CREDIT TRANSFER FORM
CREDIT ALLOCATION FORM

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LCFS Credit Transfer Form_10282011-v1

The Low Carbon Fuel Standard (LCFS) Credit Transfer Form is used by the Air Resources Board (ARB) to document and initiate transfers of LCFS credits between a Transferor (Seller) and a Transferee (Buyer). ARB will record the information herein and adjust the credit balances of both the Seller and Buyer after the form is received by ARB, as required under section 95488 of the LCFS Regulation.

Important: This form must be used and submitted each time a credit transfer agreement has been made, regardless of the number of credits transferred and the price per unit credit. Submit a Credit Transfer Form within 30 days of the actual trade. Only credits that have been "banked" in the LRT can be traded.

Instructions:

This LCFS Credit Transfer Form must be completed by the Seller and provided to the Buyer upon the transfer of a LCFS credit. The Buyer is responsible for submitting the form to ARB for timely account processing and recording.

The following information should be available prior to completing the form:

1. Seller and Buyer's organization names as they appear in the LCFS Reporting Tool.
2. Seller and Buyer's organization FEINs as they appear in the LCFS Reporting Tool.
3. Authorized representatives of both the Seller's and Buyer's organization (including name and contact information).
4. The number of credits transferred during a reporting period.

The information submitted is subject to ARB verification. The Seller and Buyer may be contacted by ARB to confirm the transactions reported.

Technical Requirements:

This form may be downloaded in Microsoft InfoPath format or in Microsoft Word format.

If InfoPath format is used, this form may be digitally signed below and submitted to ARB by clicking the button below. (You must have InfoPath to complete the form).

If Word format is used, this form should be completed, signed, and email as an attachment to Greg O'Brien at gobrien@arb.ca.gov with the subject heading LCFS Credit Transfer Form.

Submission instructions appear at the end of the form.

Section 1. Reporting Period

Enter the period in which the credit transfer is to be recorded.

- ○ 2011 - Q1
- ○ 2011 - Q2

○ 2011 - Q3
○ 2011 - Q4
○ 2012 - Q1
○ 2012 - Q2

Section 2. Transferor (Seller) Details
Enter the Seller's company name and FEIN as registered in the LCFS Reporting Tool.

Seller Company Name: Seller Company FEIN:

Enter all company representative(s) who participated in the credit transfer. If the credit transfer was mediated by a broker, please indicate "broker" and enter the broker's information below. At least one company representative is required.

(For InfoPath users, click "Add More Sellers" below to enter more names. Word users may attach additional names on a separate page).

Seller Representative: (First Name and Last Name)

Seller Phone Number: (123-456-7890)

Seller Email:

☐ Broker (Check here if the Seller is being represented by a broker or other credit transfer facilitator)

Note: Brokers/facilitators must include submittal of a copy of authorization to act on behalf of the Buyer/Seller or both.

Section 3. Transferee (Buyer) Details
Enter the Buyer's organization name and FEIN as registered in the LCFS Reporting Tool.

Buyer Company Name: Buyer Company FEIN:

Enter all company representative(s) who participated in the credit transfer. If the credit transfer was mediated by a broker, please indicate "broker" and enter the broker's information below. At least one company representative is required.

(For InfoPath users, click "Add More Buyers" below to enter more names. Word users may attach additional names on a separate page).

Buyer Representative: (First Name and Last Name)

Buyer Phone Number: (123-456-7890)

Buyer Email:

☐ Broker (Check here if the Seller is being represented by a broker or other credit transfer facilitator)

Note: Brokers/facilitators must include submittal of a copy of authorization to act on behalf of the Buyer/Seller or both.

Section 4. Credit Transfer Details

Enter the credit transfer information below. For multiple transfers between the Seller and Buyer, complete a separate form for each transfer.

Proposed Credit Transfer Date:

(mm/dd/yyyy)

Number of Credits Transferred: (in units of 1MT)

Average Price Per Unit Credit: (excluding any fees)

ID numbers of credits (if available through ARB) _____

Quarter in which credits were generated _____

Section 5. Review and Confirm

Review the information entered. Enter a signature for each Seller and Buyer listed in sections 2 and 3. By signing, each person below declares that all information provided herein are true and correct, and to the best of his/her knowledge and belief.

Note: The buyer and seller representatives need to have an account in the LRT and have "Signatory Authority" in the LRT in order to use the LCFS Credit Transfer Form. The regulated party LRT administrators can set up any representative of the company with this authority.

Seller Confirmation

Seller Representative Signature(s) ***Signed Date***

Buyer Confirmation

Buyer Representative Signature(s) ***Signed Date***

How to Submit This Form:

Sellers:
Upon agreement to transfer a credit, complete the form and provide a signed copy to the Buyer.

If you are using Microsoft InfoPath to fill out this form, you may digitally sign and date the form. ***You should save the form and email it to the Buyer as an attachment (do not change the file format of .xml).***

Alternatively, if you are using a Word version of the form, you will need to print the form, sign it, and provide the original copy to the Buyer.

Buyers:
Upon receiving the form, confirm the information provided by the Seller. If you received a Microsoft InfoPath version of the form, you may digitally sign the form and click the button below to email the form to ARB (you must also have InfoPath on your computer).

Alternatively, if you received a hard copy or Word version of the form from the Seller, you will need to sign it and email the form containing both the Seller and Buyer signatures.

Email the completed form attachment to Greg O'Brien gobrien@arb.ca.gov with the subject heading LCFS Credit Transfer Form.

For ARB Internal Use Only

Form ID:

Date Received: _____

Date Recorded: _____

Staff Name:

LCFS Credit Allocation Form_10282011-v1

The LCFS Credit Allocation Form is used by the Air Resources Board (ARB) to determine the allocation and retirement sequence of credits held by a regulated party for the purpose of meeting a compliance obligation under section 95488 of the LCFS Regulation. **Note:** This form is only necessary if the California Air Resources Board has developed a method to identify unique credits.

A Credit Allocation Form should be submitted by regulated parties as part of the LCFS Annual Report when there is an existing Annual Compliance Obligation. If it is not submitted the "Default Order" defined in Section 2 below will be used to retire credits toward meeting any existing compliance obligation.

Instructions:

An authorized representative of the company should complete, sign, and submit the form. This form should be submitted as part of the LCFS Annual Report.

Technical Requirements:

This form may be downloaded in Microsoft InfoPath format or in Microsoft Word format.

If InfoPath format is used, this form may be digitally signed below and submitted to ARB by clicking the button below. (You must have InfoPath to complete the form).

If Word format is used, this form may be completed, printed, signed, and email as an attachment to Greg O'Brien at gobrien@arb.ca.gov with subject heading LCFS Credit Allocation Form.

Submission instructions appear at the end of the form.

Section 1. Company Information

Company Name:

Company FEIN:

Company Representative Name:

Company Representative Phone:

Company Representative Email:

Section 2. Credit Retirement

I elect to retire LCFS credits for my company in the following manner (If a box is not checked the "Default Order" below will be applied):

☐ 1. I have attached a Credit Retirement Specification Form which identifies all credits to be retired, Or

☐ 2. Enter the credit retirement preference (1,2,3 or leave blank as applicable) below:

. Retire those acquired carry-back credits my company acquired during the Extended Credit Purchase Period of January 1 to March 31 following the prior compliance period (in order of earlist transfer "recording date" first).

"Carry-back" credits can be acquired during the Extended Credit Purchase Period of January 1 through March 31 and are designated as carry-back to meet the Annual Compliance Obligation. (For further details refer to section 95488 of the LCFS Regulation)

. Retire those acquired credits my company acquired during any compliance year (in order of earliest transfer "recording date" first).
"**Recording date**" is the date that ARB completes the recording of a credit transfer in the LRT.

. Retire those credits my company generated in any compliance year (in order of the earliest quarter first in which the credits were generated).

"Default Order" for credit retirement (in order of execution below if box in Section3 is not checked and/or order preference not indicated)

1. Retire those acquired credits my company acquired during the Extended Credit Purchase Period of January 1 to March 31 following the prior compliance period and designated for carry-back.
2. Retire those acquired credits my company acquired during a previous compliance period (in order of earlist transfer "recording date" first).
3. Retire those credits my company generated in a previous compliance year (in order of the earliest quarter first in which the credits were generated).

Note: All available credits will be applied in the quantity necessary to meet an existing Annual Compliance Obligation.

A "**previous compliance year**" includes all annual compliance periods prior to the year in which the annual report is filed.

Confirmation

Enter signature and date. By signing, I declare that all information provided herein are true and correct, and to the best of my knowledge and belief.

Date:

Signature of the person in Section 1

How to Submit This Form:

If you are using Microsoft InfoPath to fill out this form, you may digitally sign and date the form and email the form to ARB by click the button below.

Alternatively, if you are using a Word version of the form, you will need to print the form, sign it, and email the form to Greg O'Brien at gobrien@arb.ca.gov with subject heading LCFS Credit Allocation Form.

ARB Internal Use

Date Received:

Staff Name:

Change Date:

CALIFORNIA AIR RESOURCES BOARD

NOTICE OF PUBLIC MEETING TO CONSIDER ADOPTION OF PROPOSITION 1B GRANTS TO REDUCE EMISSIONS FROM GOODS MOVEMENT

The Air Resources Board (ARB or Board) will conduct a public meeting at the time and place noted below to consider adoption of Proposition 1B funding allocations based on monies received from the October 2011 bond sale, and any additional funds received in Spring 2012, to reduce emissions from goods movement.

DATE: December 16, 2011

TIME: 9:00 a.m.

PLACE: California Environmental Protection Agency
Air Resources Board
Byron Sher Auditorium
1001 I Street
Sacramento, California 95814

This item will be considered at a one-day meeting on December 16, 2011, commencing at 9:00 a.m. Please consult the agenda for the meeting, which will be available at least 10 days before December 16, 2011, to determine the order of agenda items.

BACKGROUND

The movement of freight (goods movement) throughout California results in emissions of diesel particulate matter (diesel PM), oxides of nitrogen (NOx), and other pollutants. Goods movement involves a variety of mobile emission sources, such as heavy duty trucks, diesel locomotives, ocean-going cargo ships, harbor craft, and cargo handling equipment. ARB has identified diesel PM as a toxic air contaminant, and NOx contributes to regional ozone and PM levels that exceed State and federal air quality standards. The emissions from these mobile sources result in significant human health risks and adverse environmental effects, particularly when such sources release emissions near already heavily-impacted communities located in California's trade corridors where these sources operate.

The Proposition 1B: Goods Movement Emission Reduction Program (Program), approved by voters in 2006, authorizes $1 billion in bond funding to the ARB to cut freight emissions and resulting health risks in four priority trade corridors. The Program is a partnership between ARB and local agencies (like air districts and ports). Based on funding authorization provided by the State budget and availability of cash from bond sales or other State financing mechanisms, ARB awards Program funding to the agencies and they in turn use a competitive process to provide incentives to equipment owners to upgrade to cleaner technology.

In June 2010, the Board allocated $475 million in Program funds to local and State agencies in two phases. Phase 1 included final awards for the $200 million in available cash. These projects are underway. Phase 2 included tentative allocations to local and State agencies for $275 million, with specifics to be finalized based on cash from future bond sales. Of this Phase 2 total, $216 million was earmarked for truck grants to be administered by local air districts and a truck financing assistance program to be administered through ARB staff. The remainder of the Phase 2 funding was recommended for locomotive and ships at berth/cargo handling equipment projects.

STAFF PROPOSAL

Summary of Proposal. Phase 2 awards need to be updated based on the assessment of the available funding - $100 million from the Fall 2011 bond sale and additional funding possible in a Spring 2012 bond sale or other mechanism. Staff's proposal utilizes the Board's priorities to recommend that all the Fall 2011 and Spring 2012 monies be used to fund additional Phase 2 truck projects, including implementation of the priority reserve funding for drayage trucks established by the Board in the *Final 2010 Staff Report and Guidelines for Implementation* (March 25, 2010). This approach reflects the Board's priority for achieving diesel emission reductions in highly impacted communities around ports, rail yards, distribution centers, and freeways.

Drayage Truck Priority Reserve Funding. Under the 2010 Program Guidelines, drayage trucks that were both equipped with retrofits and registered in ARB's drayage truck registry as of June 2010 are eligible for the priority funding in the form of grants. To deliver the early or extra emission reductions required under the program, drayage trucks must be upgraded by the end of 2012 -- at least one year ahead of the December 31, 2013 deadline in the Drayage Truck Regulation. In addition, staff proposes that the Board allocate $5 million to ARB to provide improved access to financing for eligible drayage truck owners via the California Pollution Control Financing Authority's California Capital Access Program.

Additional Funding for Truck Projects Currently on District Ranked Lists. Staff further proposes that any remaining funds from the $100 million currently available, plus any new funds received in Spring 2012, be allocated to upgrade other trucks already on the ARB-approved, competitively ranked lists developed by the air districts from the Spring 2011 truck solicitation.

Regional Allocation of Funding. Unlike prior staff recommendations for Program funding allocations, this proposal focuses on the process for distributing funding to air districts (and to ARB for the truck financing assistance program), with the absolute dollar amounts of the grants to air districts in each trade corridor to be determined by ARB's Executive Officer based on the priorities adopted by the Board. If the Board supports drayage truck funding as the first priority for the $100 million in current cash, staff would quickly notify eligible drayage truck owners in December 2011. Those owners would have about 6 weeks to submit applications and proof of financing for the remainder of the cost of a compliant truck. After screening the responses, ARB staff would determine the level of funding needed to implement the drayage reserve and

execute grant agreements with the Bay Area Air Quality Management District and the South Coast Air Quality Management District to administer the drayage truck funding.

Consistent with the Board's direction, remaining funds, and any new funds received in Spring 2012, would be allocated by ARB staff to grants for other truck projects and (potentially) truck loan assistance. The allocations to air districts for other truck grants would consider: the trade corridor funding targets; the total Program funding allocated to each trade corridor to date; the demonstrated demand for additional truck funding based on existing, approved ranked lists; and the district resources available to quickly implement additional funds.

The Program Guidelines note that the allocations made in each individual funding cycle are responsive to the priorities established by the Board and may not be directly proportional to the trade corridor funding targets. The Board directed staff to recommend funding levels for local (and State) agency projects that are designed to reach the trade corridor funding targets over the course of the entire $1 billion Program.

In the next cycle of funding awards (Fall 2012 or later), ARB staff would issue a new Notice of Funding Availability to solicit agency proposals and seek to recommend funding allocations that restore the balance in each corridor, subject to the other criteria in the Program.

Reuse of Drayage Trucks Equipped with Particulate Matter (PM) Filters. Typically, trucks that are replaced in this Program are scrapped to ensure the emissions benefits are achieved. However, the Program Guidelines allow re-use of certain trucks being replaced if the reuse meets defined criteria and is approved by ARB's Executive Officer. Using Program funds to aid replacement of drayage trucks that are already equipped with PM filters presents a unique opportunity. Staff believes that some of these drayage trucks with filters should be reused to replace the oldest trucks used in agriculture or other applications that are not required to upgrade until 2020 or later under ARB's Truck and Bus Regulation. Scrapping the very oldest trucks and replacing them with filter-equipped trucks could provide substantial health benefits in communities impacted by diesel emissions.

The current and proposed commitment of Program funding to upgrade drayage trucks is providing the greatest benefits in the Los Angeles/Inland Empire and Bay Area trade corridors where the major ports are located. Recognizing the environmental justice concerns in low-income and minority communities in the Central Valley as well, ARB staff is recommending that this truck reuse program be focused on the Valley. Given that there would be no Program funds available to support the administrative costs for truck reuse, staff believes that a single program run by the San Joaquin Valley Air Pollution Control District would be the most efficient way to achieve the objective. This District has expressed a strong interest in developing the concept with ARB staff that meets the Guideline requirements.

AVAILABILITY OF DOCUMENTS

The Final 2010 Staff Report and Guidelines (March 25, 2010) discuss the drayage priority reserve funding concept. The Staff Report on 2010 Funding Awards (June 24, 2010) details the public process to develop recommendations for Phase 1 and Phase 2 funding, as well as staff's evaluation of the original agency proposals. A Staff Draft Concept Paper on 2011 Funding Awards (November 10, 2011) and associated workshop slides describe staff's preliminary thoughts on how to update the Phase 2 funding recommendations in response to the lower dollar amounts likely to be available. All of the materials listed above are currently available on the Program website at http://www.arb.ca.gov/gmbond.

ARB staff expects to release its formal recommendations in a Staff Report on 2011 Funding Awards on or before December 5, 2011. Copies of the new Staff Report may be obtained from ARB's Public Information Office, 1001 I Street, First Floor, Environmental Services Center, Sacramento, California, 95814, (916) 322-2990, starting December 5, 2011. The report may also be obtained from the Program website listed above.

SUBMITTAL OF PUBLIC COMMENTS AND AGENCY CONTACTS

Interested members of the public may present comments orally or in writing at the meeting and may be submitted by postal mail or by electronic submittal before the meeting. To be considered by the Board, written comments not physically submitted at the meeting must be received **no later than 12:00 noon, Thursday, December 15, 2011**, and addressed to the following:

Postal mail: Clerk of the Board, Air Resources Board
1001 I Street, Sacramento, California 95814

Electronic submittal: http://www.arb.ca.gov/lispub/comm/bclist.php

You can sign up online in advance to speak at the Board meeting when you submit an electronic board item comment. For more information go to: http://www.arb.ca.gov/board/online-signup.htm.

Please note that under the California Public Records Act (Government Code section 6250 et seq.), your written and oral comments, attachments, and associated contact information (e.g., your address, phone, email, etc.) become part of the public record and can be released to the public upon request.

ARB requests that written and email statements on this item be filed prior to the meeting so that ARB staff and Board members have time to consider each comment. Further inquiries regarding this matter should be directed to Ms. Monique Davis, Staff Air Pollution Specialist, at (916) 322-7304 or Ms. Barbara Van Gee, Manager, Goods Movement Program Section at (916) 324-9949.

SPECIAL ACCOMMODATION REQUEST

Special accommodation or language needs can be provided for any of the following:

- An interpreter to be available at the hearing.
- Documents made available in an alternate format or another language.
- A disability-related reasonable accommodation.

To request these special accommodations or language needs, please contact the Clerk of the Board at (916) 322-5594 or by facsimile at (916) 322-3928 as soon as possible, but no later than ten (10) business days before the scheduled Board hearing. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

Comodidad especial o necesidad de otro idioma puede ser proveído para alguna de las siguientes:

- Un intérprete que esté disponible en la audiencia.
- Documentos disponibles en un formato alterno u otro idioma.
- Una acomodación razonable relacionados con una incapacidad.

Para solicitar estas comodidades especiales o necesidades de otro idioma, por favor llame a la oficina del Consejo al (916) 322-5594 o envíe un fax a (916) 322-3928 lo más pronto posible, pero no menos de diez (10) días de trabajo antes del día programado para la audiencia del Consejo. TTY/TDD/Personas que necesiten este servicio pueden marcar el 711 para el Servicio de Retransmisión de Mensajes de California.

CALIFORNIA AIR RESOURCES BOARD

James N. Goldstene
Executive Officer

Date: 11-24-11

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.arb.ca.gov.

TITLE 13. CALIFORNIA AIR RESOURCES BOARD

NOTICE OF PUBLIC HEARING TO CONSIDER AMENDMENTS TO CALIFORNIA'S SMALL OFF-ROAD ENGINE AND TIER 4 OFF-ROAD COMPRESSION-IGNITION ENGINE REGULATIONS AND TEST PROCEDURES; AND, AMENDMENTS TO THE EXHAUST EMISSION CERTIFICATION TEST FUEL FOR OFF-ROAD SPARK-IGNITION ENGINES, EQUIPMENT, AND VEHICLES.

The Air Resources Board (ARB or Board) will conduct a public hearing at the time and place noted below to consider adoption of amendments to California's small off-road engines (SORE) and tier 4 off-road compression-ignition (CI) engine regulations and test procedures. If adopted, these amendments will primarily serve to further harmonize California's regulations with those of the United States Environmental Protection Agency (U.S. EPA). Also considered for adoption will be amendments to the exhaust certification test fuel requirements for California's off-road, spark-ignition engine categories. This notice summarizes the specific amendments being proposed. The Initial Statement of Reasons (ISOR), or "Staff Report", presents the proposed amendments and information supporting the amendments of the regulations and test procedures in greater detail.

DATE: December 15, 2011

TIME: 9:00 a.m.

PLACE: California Environmental Protection Agency
Air Resources Board
Byron Sher Auditorium
1001 I Street
Sacramento, California 95814

This item may be considered at a two-day meeting of the Board, which will commence at 9:00 a.m., December 15, 2011, and may continue at 8:30 a.m., on December 16, 2011. This item may not be considered until December 16, 2011. Please consult the agenda for the hearing, which will be available at least 10 days before December 15, 2011, to determine the day on which this item will be considered.

INFORMATIVE DIGEST OF PROPOSED ACTION AND POLICY STATEMENT OVERVIEW

Sections Affected: Proposed amendments to California Code of Regulations, title 13 (13 CCR), sections 2403 and 2407; and, to the following document as incorporated by reference therein: *"California Exhaust Emission Standards and Test Procedures for 2005 and Later Small Off-Road Engines,"* as adopted July 26, 2004, and as last amended February 24, 2010; and, the proposed adoption of the following documents incorporated by reference therein: *"California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines; Engine-Testing*

Procedures (Part 1054)"; and, *"California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines; Engine-Testing Procedures (Part 1065)."*

Proposed adoption of amendments to 13 CCR, sections 2421, 2423, 2424, 2425, 2425.1, 2426, and 2427, and, to the following document as incorporated by reference therein: *"California Exhaust Emission Standards and Test Procedures for New 2008 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-C,"* adopted October 20, 2005; and, to the following documents incorporated by reference therein: *"California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-D,"* adopted October 20, 2005; and, *"California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression Ignition Engines, Part I-F,"* adopted October 20, 2005; and, proposed adoption of the following document incorporated by reference therein: *"California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression Ignition Engines, Part I-E."*

Proposed adoption of amendments to 13 CCR, sections 2433, 2783, and 2784; and, to the following documents incorporated by reference therein: *"California Exhaust and Evaporative Emission Standards and Test Procedures For New 2010 and Later Off-Road Large Spark-Ignition Engines (2010 and Later Test Procedure 1048),"* as adopted March 2, 2007, and as last amended November 21, 2008; and, *"California Exhaust and Evaporative Emission Standards and Test Procedures For New 2007 and Later Off-Road Large Spark-Ignition Engines (Test Procedures 1065 and 1068),"* as adopted March 2, 2007.

Proposed adoption of amendments to 13 CCR, section 2412; and, to the following document incorporated by reference therein: *"California Exhaust Emission Standards and Test Procedures for 1997 and Later Off-Highway Recreational Vehicles and Engines,"* as adopted May 26, 1995, and as last amended June 1, 2007.

Proposed adoption of amendments to 13 CCR, section 2447; and, to the following document incorporated by reference therein: *"California Exhaust Emission Standards and Test Procedures for 2001 Model Year and Later Spark-Ignition Marine Engines,"* as adopted October 21, 1999, and as last amended June 5, 2009.

BACKGROUND

California's Off-Road Categories

California's off-road categories include Small Off-road Engines (SORE, e.g., lawnmowers, chainsaws), large spark-ignition engines (e.g., forklifts), recreational marine engines (e.g., sterndrives, outboards), and off-road recreational vehicles (e.g., motorcycles, all-terrain vehicles). All of these categories use spark-ignition engines that mostly operate on gasoline; however, some SORE and large spark-ignition engines can

operate on alternative fuels, such as liquefied petroleum gas or compressed natural gas. The remaining off-road category is the off-road compression-ignition engine category, which uses compression-ignition diesel-cycle engines.

ARB's Current SORE Regulations and Test Procedures

In 1990, ARB adopted the initial exhaust emission control regulations for new SORE. Manufacturers were able to comply with the adopted emission standards with engine calibration changes and minor engine modifications. In 2003, ARB adopted more stringent exhaust emission standards based on aftertreatment technology (e.g., catalytic converters). These emission standards were fully implemented in 2008.

ARB's Current Off-Road CI Engine Regulations and Test Procedures

The off-road CI engine emission standards are unique in that they vary according to an engine's power rating, and have been implemented in stages rather than all at once in a single year. There are currently four tiers of increasingly stringent emission standards required for off-road CI engines in California. Tiers 1 and 2 were adopted by the Board in 1992. Similarly to the SORE category, CI engine manufacturers were able to comply with these early emission standards with engine calibration changes and minor engine modifications. More stringent tier 3 and tier 4 emission standards were later adopted in 2000 and 2004, respectively. The tier 4 emission standards, in particular, were based on aftertreatment technology (e.g., diesel particulate filters and selective catalytic reduction). The tier 4 emission standards are due to be fully implemented in 2015.

U.S. EPA's Current Regulations and Test Procedures

In 2001, U.S. EPA adopted title 40, Code of Federal Regulations (40 CFR), Part 1065, as a "united" test procedure for both "nonroad" engines and equipment and on-highway heavy-duty CI engines. Part 1065 is currently the technical part of U.S. EPA's regulations that promulgates emissions measurement methodologies, criteria for selecting analytical instrumentation, calibration procedures, and specifications for all on-road CI engine and all nonroad engine categories. Since its initial adoption, Part 1065 has been amended repeatedly to both improve and expand its applicability for the nonroad engine categories.

Since 2005, U.S. EPA has adopted several amendments to its nonroad CI engine regulations contained in Part 1065, as well as to other related parts in 40 CFR. For example, Part 1039 has also been amended. Part 1039 contains standard-setting provisions for nonroad CI engines, and also contains provisions regarding certification procedures, labeling, credit generation, emissions averaging, equipment flexibility options, and hardship relief.

In 2008, U.S. EPA adopted exhaust and evaporative emission standards for small nonroad engines, which coincided with some of ARB's SORE emission standards that were adopted in 2003. At the same time, U.S. EPA further amended several parts of the CFR related to nonroad engines.

Manufacturers' Request for Alignment

In response to these changes to the federal provisions, and since ARB's regulations reference the test procedures contained in the CFR, both SORE and off-road CI engine manufacturers have requested that ARB align with the current versions of U.S. EPA's applicable regulations and test procedures. To this end, ARB staff has worked with manufacturers to enhance the alignment of ARB's SORE and tier 4 Off-Road CI engine standards and test procedures with the current federal provisions without affecting the stringency of California's current emissions standards.

Off-Road, Spark-Ignition Exhaust Certification Test Fuel Requirements

Most of the off-road categories' gasoline-fueled spark-ignition engines are currently required to conduct exhaust emission certification tests using Phase 2 California Reformulated Gasoline, which is oxygenated with methyl-tertiary-butyl-ether or "MTBE". Other test fuels are allowed, such as federal tier II or Indolene, in order to provide manufacturers with some flexibility when testing as long as the stringency of the emission standards and test procedures is maintained.

In a separate rulemaking, scheduled for January 2012, staff will propose for adoption a ten-percent ethanol-blend (E10) gasoline certification test fuel specification for on-road motor vehicles, as part of California's Low-Emission Vehicle (LEV III) program. This provision would re-establish the consistency between the certification test fuel and commercially available gasoline in California. Staff believes that now is also an appropriate time to propose using the same E10 fuel for exhaust emission certification testing of off-road, gasoline-fueled engines. This is discussed in further detail below.

PROPOSED SORE AND TIER 4 OFF-ROAD CI ENGINE AMENDMENTS

Staff proposes to amend ARB's SORE test procedures in order to more completely harmonize with the applicable federal test procedures. Staff proposes to also amend the tier 4 Off-Road Engine test procedures in order to establish a more complete harmonization with the applicable federal test procedures, as existed initially in 2005. In addition, staff proposes to amend the current tier 4 Off-Road Engine regulations in order to better harmonize with federal amendments adopted since 2005, including a recently adopted alternative oxides of nitrogen plus non-methane hydrocarbon (NOx+NMHC) emission standard. These amendments will reduce manufacturers' certification-related testing and compliance burdens without affecting the effectiveness of the applicable test procedures, and in the case of the tier 4 Off-Road Engines, without affecting the associated emission standards.

Proposed SORE Amendments

Staff proposes that 40 CFR, Part 1054 (emission standard-setting provisions) and Part 1065, be adopted by reference and incorporation, with applicable modifications, into the SORE test procedures, effective for the 2013 and later model years. The current test procedures would be retired after the 2012 model year. Staff also proposes adopting the entire Part 1054, but with modifications that reference and include certain California-specific sections from 13 CCR in place of the similar federal provisions because California already has its own regulatory versions of these federal provisions (i.e., emission standards and other provisions). Further, because most of the general compliance provisions in Part 1068 are either already contained in 13 CCR or are not applicable to California's situation, staff does not find it necessary to include Part 1068 in the alignment proposal. Lastly, staff proposes adopting Part 1065, with the following modifications/additions.

- *Allowance for Supplemental Engine Cooling*

The federal Part 1065 includes section1065.122, which allows supplemental cooling (i.e., auxiliary cooling fans) of an engine for simulating in-use conditions when conducting exhaust emission testing. However, staff believes that the current California allowance, as stated in sections 90.118(f) and 90.307 of the current test procedures, assures testing is more representative of in-use conditions and prevents use of excess cooling to artificially lower test emissions.

- *Measurement of Particulate Matter Emissions from Two-Stroke Engines*

California's regulations currently have a PM emission standard in place for two-stroke engines. The regulations allow manufacturers the option of demonstrating compliance with this standard using the measured hydrocarbon (HC) emissions as a surrogate for determining PM emission levels. Staff believes that continuing this option is reasonable, and doing so does not affect the stringency of the current PM emission standards. Note that the corresponding federal regulations do not contain a PM emission standard for this source category.

- *Exhaust Emission Certification Test Fuel Requirements*

The federal Part 1065 provides engine test fuel and lubricant information in subpart H. While staff will propose the adoption of this subpart, certain changes are necessary in order to address specific California requirements. In particular, Part 1065 needs to be modified to include the test fuels currently allowed to be used by California for SORE exhaust emission certifications. Further, because staff will also propose new E10 certification test fuel requirements, Part 1065 needs to be modified to allow the use of an E10 test fuel as an option for conducting exhaust emission certification for the 2013 through 2018 model years, with mandatory use beginning with the 2019 model year.

Proposed Tier 4 Off-Road CI Engine Amendments

Staff proposes that the current California tier 4 off-road CI engine test procedures be renamed and retired after the 2012 model year and replaced by new ones that are based on the current test procedures with modifications that incorporate the California-appropriate revisions for those revisions made by U.S. EPA to Parts 1039, 1065, and 1068 since 2005. The most notable revisions would include the following:

- *Tier 4 Alternative Oxides of Nitrogen plus Non-Methane Hydrocarbon (NOx+NMHC) Standards and FEL Caps*

Staff proposes to align with federal alternate NOx+NMHC standards and the corresponding Family Emission Limits (FEL caps) for tier 4 engines ranging from 56 kW through 560 kW that are included in Part 1039. This would restore the original intent of the tier 4 regulations of allowing manufacturers to continue certifying a small number of tier 3 engines using emission credits as the tier 4 standards are phased in, but which is inadvertently hindered because the tier 4 averaging programs do not allow manufacturers to show compliance with the existing 0.19 g/kW-hr NMHC standard using credits.

- *Alternative NOx FEL Cap Applicability*

Staff proposes to align with a federal clarification on the start dates for the Alternative 20-percent NOx FEL caps in order to correct an inconsistency found within the regulations. The Alternative NOx FEL caps should extend over a four-year period, upon commencement of the tier 4 emission standards. A table within the regulations erroneously indicates that these caps would be in place over only a two-year period.

- *Stockpiling and Definitions*

Staff proposes to align with the federal provisions that would prohibit over-production (stockpiling) of engines prior to a year in which a change in emission standards occurs. Staff also proposes revising of numerous test procedure and administrative related definitions to align with the corresponding federal definitions.

While most of the amendments to the tier 4 test procedures would harmonize ARB's and U.S. EPA's requirements, staff proposes some amendments that would be unique to California. Most notable of these are the following:

- *Emission Control Warranty Statement*

Staff proposes to amend the emission control warranty statement regulations to clarify the requirement for manufacturers to include a copy of the California Emission Control Warranty Statement with all off-road CI engines.

- *Enhanced New and Replacement Engine Labeling Requirements*

Staff proposes to include a requirement that additional information, beyond that required by U.S. EPA, be included on off-road CI engine emissions control labels to aid in the implementation, compliance, and enforcement of ARB's various off-road diesel in-use regulations, such as transport refrigeration units, off-road fleets, and ports. These California-specific programs require in-use fleets to comply with an averaged target emissions level based on the model year, the certification tier, and/or the power of the engines/equipment in the fleet. Fleet owners are responsible for calculating their fleet averages and target emission levels per the provisions of the applicable in-use regulation. However, current labeling provisions for replacement engines do not require this particular information. This makes in-use registration by fleet owners more complicated and error prone, and hinders ARB's effective enforcement efforts in the field. Accordingly, staff proposes that, in addition to current labeling requirements, all labels for new and replacement off-road CI engines include information about the engine power, reference family name, and date of manufacture, beginning January 1, 2013.

- *Other Differences Between California and Federal Requirements*

Various other miscellaneous differences would remain. These are discussed further under "COMPARABLE FEDERAL REGULATIONS," below, and in much greater detail in the ISOR.

Proposed Exhaust Emission Certification Test Fuel Amendment

Staff proposes to revise the current exhaust emission certification test fuel provisions for off-road, gasoline-fueled engines to require the use of E10 gasoline. Specifications and the use of E10 gasoline is scheduled to be proposed in January 2012 in a separate rulemaking for on-road motor vehicle certification emission testing under California's LEV III program. For off-road, the new E10 test fuel would be required for exhaust emission certification testing of new gasoline-fueled, large spark-ignition engines, SORE, off-road recreational vehicles, and recreational marine engine categories. Staff will propose that the use of E10 be made an option for exhaust emission testing for the 2013 through 2018 model years. Use of the E10 test fuel would become mandatory for exhaust emission testing beginning with the 2019 model year, at which point only the E10 test fuel would be allowed for certification testing purposes.

COMPARABLE FEDERAL REGULATIONS

In 2008, U.S. EPA adopted changes to several equipment categories including regulations for small nonroad engines which aligned the national emission standards with the current California exhaust emission standards. The new federal exhaust emission standards are to be phased-in with the 2011 or 2012 model years, depending on engine displacement. Along with the adoption of these emission standards, U.S. EPA required emission tests to be performed based on 40 CFR, Parts 1054 and CFR 1065. As previously noted, the proposed amendments would align California's SORE exhaust emission test procedures with current federal procedures with certain

modifications to ensure expected future emission benefits in California. The proposed amendments would not affect any of California's existing SORE exhaust emission standards.

On June 29, 2004, U.S. EPA promulgated the nonroad tier 4 regulations in 40 CFR, Parts 1039, 1065, and 1068 for new off-road CI engines. Since 2005, U.S. EPA has adopted several amendments to its regulations contained in these parts[1]. The staff's proposal generally harmonizes ARB's regulation with the federal rule, while preserving specific features needed by California.

Specific features of staff's proposal differ from the current U.S. EPA regulation in the following areas: replacement engine labeling requirements, preliminary approvals, untracked replacement engine provisions, partially completed engine requirements, and the definition of an engine. Existing differences from the federal tier 4 2004 rulemaking that have been retained include: flexibility engine labeling provisions, flexibility engine Executive Orders, rebuild labeling prohibition and supplemental label requirements, extension of replacement engine reporting requirements, and in-use compliance/recall program provisions.

The differences that remain between the two programs are justified by the benefit to human health, public welfare, and the environment. In addition, the differences from the federal program are authorized by Health and Safety Code sections 43013 and 43018.

AVAILABILITY OF DOCUMENTS AND AGENCY CONTACT PERSONS

ARB staff has prepared a Staff Report, for the proposed regulatory actions, which describes the basis of the proposed actions, and includes a summary of the economic and environmental impacts of the proposed amendments. The Staff Report is entitled: "Proposed Amendments to California's Small Off-Road Engine and Tier 4 Off-Road Compression-Ignition Engine Regulations and Test Procedures; and, Amendments to the Exhaust Emission Certification Test Fuel for Off-Road Spark-Ignition Engines, Equipment, and Vehicles."

Copies of the ISOR and the full text of the proposed regulatory language, in underline and strikeout format to allow for comparison with the existing regulations, may be accessed on ARB's website listed below, or may be obtained from the Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, First Floor, Sacramento, California, 95814, (916) 322-2990, on October 26, 2011.

Upon its completion, the Final Statement of Reasons (FSOR) will be available and copies may be requested from the agency contact person in this notice, or may be accessed on the ARB's website listed below.

[1] Ref.: 72 FR 72955 (Dec. 26, 2007); 73 FR 59521 (Oct. 8, 2008); 74 FR 84270 (Feb. 24, 2009); 74 FR 56260 (October 31, 2009); and, 76 FR 37977 (June 28, 2011).

Inquiries concerning the substance of the proposed amendments to the SORE regulation may be directed to the designated agency contact persons, Mr. Ronald Haste, Manager of the Off-Road Control Section, at (626) 575-6676, or Ms. Yun Hui Park, Air Resources Engineer, at (626) 450-6263.

Inquiries concerning the substance of the proposed amendments to the tier 4 off-road CI engine regulations may be directed to the designated agency contact persons, Mr. Ronald Haste, Manager of the Off-Road Control Section, at (626) 575-6676, or Mr. Jeff Lowry, Staff Air Pollution Specialist, at (626) 575-6841.

Inquiries concerning the substance of the proposed amendments to the off-road engine categories' exhaust emission certification test fuel amendments may be directed to the designated agency contact persons, Mr. Ronald Haste, Manager of the Off-Road Control Section, at (626) 575-6676, or Mr. Andrew Spencer, Air Pollution Specialist, at (626) 575-6675.

Further, the agency representative and designated back-up contact persons, to whom nonsubstantive inquiries concerning the proposed administrative action may be directed are Ms. Lori Andreoni, Manager, Board Administration and Regulatory Coordination Unit, (916) 322-4011, or Ms. Trini Balcazar, Regulations Coordinator, (916) 445-9564. The Board has compiled a record for this rulemaking action, which includes all the information upon which the proposal is based. This material is available for inspection upon request to the contact persons.

This notice, the ISOR and all subsequent regulatory documents, including the FSOR, when completed, are available on ARB's website for this rulemaking at http://www.arb.ca.gov/regact/2011/sore-ci2011/sore-ci2011.htm

COSTS TO PUBLIC AGENCIES AND TO BUSINESSES AND PERSONS AFFECTED

The determinations of the Board's Executive Officer concerning the costs or savings necessarily incurred by public agencies and private persons and businesses in reasonable compliance with the proposed amendments to the regulations are presented below.

1. Costs to State Government and Local Agencies

Pursuant to Government Code section 11346.5(a)(5), the Executive Officer has determined that the proposed regulatory action would not create any costs to or mandates on any local agency or school district that are reimbursable by the State pursuant to Government Code, title 2, division 4, part 7 (commencing with section 17500).

Pursuant to Government Code section 11346.5(a)(6), the Executive Officer has determined, based on estimates prepared in accordance with instruction adopted by the Department of Finance, that the amendments to the SORE, tier 4 off-road CI engine, large spark-ignition, recreational marine, and off-road recreational regulations would not create additional costs to any State agency or to any local agency or school district, whether or not reimbursable by the State pursuant to Government Code, title 2, division 4, part 7 (commencing with section 17500), create other nondiscretionary costs on local agencies, and affect costs or savings in federal funding to the State.

2. Effect on Businesses and Private Persons

The determinations of the Board's Executive Officer, pursuant to Government Code section 11346.5(a)(9), concerning the costs or savings necessarily incurred by representative private persons and businesses in reasonable compliance with the proposed amendments to the regulations are presented below.

In developing this regulatory proposal, ARB staff evaluated the potential economic impacts on representative private persons or businesses. The ARB is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

The proposed amendments to the SORE and tier 4 off-road CI engine were developed in response to manufacturers' requests that ARB align the regulations and test procedures with the current federal versions. Alignment will primarily allow manufacturers to avoid extra compliance burdens associated with either performing duplicative test procedures or creating separate California and 49-state engines. Accordingly, ARB staff has worked with manufacturers to enhance the alignment of ARB's SORE and tier 4 Off-Road CI engine regulations and test procedures, as applicable, without affecting the stringency of California's current emissions standards and test procedures. The proposal would result in zero additional cost to certifying manufacturers and independent emission testing facilities. In fact, the majority of amendments being proposed for adoption into the California regulations are intended to remove obstacles to compliance.

The proposed amendments to the SORE, large spark-ignition, recreational marine, and off-road recreational vehicle regulations and test procedures will align the exhaust emission certification test fuel for these off-road categories with the same certification test fuel that ARB will propose, in January 2012, for use by on-road motor vehicles. Staff proposes that mandatory use of this new fuel is not required until the 2019 model year. The new certification test fuel is expected to cost the same as the current one; therefore, the proposed amendment does not impose any additional cost on the manufacturers and independent testing facilities.

This proposed action may affect small business within the meaning of Title 1, California Code of Regulations, Section 4.

3. Effect on State Economy

The Executive Officer has made an initial determination that the proposed amendments to the SORE, tier 4 off-road CI engine, large spark-ignition, recreational marine, and off-road recreational vehicle regulations would not have a significant statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states, or on representative private persons. In accordance with Government Code section 11346.3, the Executive Officer has determined that the proposed regulatory action would not affect the creation or elimination of jobs within the State of California, the creation of new businesses or elimination of existing businesses within the State of California, or the expansion of businesses currently doing business within the State of California.

4. Consideration of Alternatives

Before taking final action on the proposed regulatory actions, the Board must determine that no reasonable alternative considered by the Board, or that has otherwise been identified and brought to the attention of the Board, would be more effective in carrying out the purpose for which the action is proposed, or would be as effective and less burdensome to affected private persons than the proposed action. Alternatives that staff considered are discussed in the Staff Report.

ENVIRONMENTAL ANALYSIS

In accordance with ARB's certified regulatory program, California Code of Regulations, title 17, sections 60006 through 60007, and the California Environmental Quality Act, Public Resources Code section 21080.5, ARB has conducted an analysis of the potential for significant adverse and beneficial environmental impacts associated with the proposed regulatory action. The environmental analysis of the proposed regulatory action can be found in Chapter V of the ISOR.

SUBMITTAL OF COMMENTS

Interested members of the public may present comments relating to the proposed amendments orally or in writing at the meeting, and comments may be submitted by postal mail or by electronic submittal before the meeting. The public comment period for this regulatory action will begin on October 31, 2011. To be considered by the Board, written comments, not physically submitted at the meeting, must be submitted on or after October 31, 2011 and received no later than 12:00 noon on December 14, 2011, and must be addressed to the following:

Postal mail: Clerk of the Board, Air Resources Board
1001 I Street, Sacramento, California 95814

Electronic submittal: http://www.arb.ca.gov/lispub/comm/bclist.php

Please note that the webpage provided above for electronic submittal is for comments on the following off-road-related regulations:

- SORE
- Tier 4 off-road CI engines
- Off-road spark-ignition engine exhaust emission certification test fuel

To ensure that all comments are properly considered and responded to, please identify in the subject heading of each comment letter the regulation(s) for which comments are being submitted.

You can sign up online in advance to speak at the Board meeting when you submit an electronic board item comment. For more information go to: http://www.arb.ca.gov/board/online-signup.htm.

Please note that under the California Public Records Act (Government Code §6250 et seq.), your written and oral comments, attachments, and associated contact information (e.g., your address, phone, email, etc.) become part of the public record and can be released to the public upon request.

ARB requests that written and email statements on this item be filed at least 10 days prior to the hearing so that ARB staff and Board members have additional time to consider each comment. The Board encourages members of the public to bring to the attention of staff in advance of the hearing any suggestions for modification of the proposed regulatory action.

Additionally, the Board requests but does not require that persons who submit written comments to the Board reference the title of the proposal in their comments to facilitate review.

STATUTORY AUTHORITY AND REFERENCES

This regulatory action is proposed under the authority granted in Health and Safety Code sections 39600, 39601, 43013, 43018, 43101, 43102, 43104, 43105 and 43107; and, in Vehicle Code sections 38020 and 38390. This action is proposed to implement, interpret, and make specific Health and Safety Code sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43107, 43150-43154, 43205.5, and 43210-43212; and, Vehicle Code sections 38020 and 38390.

HEARING PROCEDURES

The public hearing will be conducted in accordance with the California Administrative Procedure Act, title 2, division 3, part 1, chapter 3.5 (commencing with section 11340) of the Government Code.

Following the public hearing, the Board may adopt the regulatory language as originally proposed, or with non-substantial or grammatical modifications. The Board may also adopt the proposed regulatory language with other modifications if the text as modified is sufficiently related to the originally proposed text that the public was adequately placed on notice and that the regulatory language as modified could result from the proposed regulatory action; in such event, the full regulatory text, with the modifications clearly indicated, will be made available to the public, for written comment, at least 15-days before it is adopted.

The public may request a copy of the modified regulatory text from ARB's Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, First Floor, Sacramento, California, 95814, (916) 322-2990.

At the Board meeting, the Board may direct staff to develop additional modifications to the regulation to be considered at a later Board hearing. If directed to do so, ARB will prepare a separate notice of proposed rulemaking that will be published not less than 45-days before the scheduled hearing date.

SPECIAL ACCOMMODATION REQUEST

Special accommodation or language needs can be provided for any of the following:

- An interpreter to be available at the hearing;
- Documents made available in an alternate format or another language; or
- A disability-related reasonable accommodation.

To request these special accommodations or language needs, please contact the Clerk of the Board at (916) 322-5594 or by facsimile at 916) 322-3928 as soon as possible, but no later than 10 business days before the scheduled Board hearing. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

Comodidad especial o necesidad de otro idioma puede ser proveído para alguna de las siguientes:

- Un intérprete que esté disponible en la audiencia.
- Documentos disponibles en un formato alterno u otro idioma.
- Una acomodación razonable relacionados con una incapacidad.

Para solicitar estas comodidades especiales o necesidades de otro idioma, por favor llame a la oficina del Consejo al (916) 322-5594 o envíe un fax a (916) 322-3928 lo más pronto posible, pero no menos de 10 días de trabajo antes del día programado para la audiencia del Consejo. TTY/TDD/Personas que necesiten este servicio pueden marcar el 711 para el Servicio de Retransmisión de Mensajes de California.

CALIFORNIA AIR RESOURCES BOARD

James N. Goldstene
Executive Officer

Date: October 18, 2011

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.arb.ca.gov

State of California
AIR RESOURCES BOARD

NOTICE OF PUBLIC HEARING DATE CHANGE

NOTICE OF PUBLIC HEARING TO CONSIDER AMENDMENTS TO CALIFORNIA'S SMALL OFF-ROAD ENGINE AND TIER 4 OFF-ROAD COMPRESSION-IGNITION ENGINE REGULATIONS AND TEST PROCEDURES; AND, AMENDMENTS TO THE EXHAUST EMISSION CERTIFICATION TEST FUEL FOR OFF-ROAD SPARK-IGNITION ENGINES, EQUIPMENT, AND VEHICLES.

BY NOTICE dated October 18, 2011, and published in the October 28, 2011, California Regulatory Notice Register, Register 2011, No. 43-Z, the Air Resources Board announced it would conduct a public hearing to consider amendments California's Small Off-Road Engine and Tier 4 Off-Road Compression-Ignition Engine Regulations and Test Procedures; and, amendments to the Exhaust Emission Certification Test Fuel for Off-Road Spark-Ignition Engines. The hearing was originally scheduled for December 15, 2011, at 9:00 a.m., at the California Environmental Protection Agency, Air Resources Board, 1001 I Street, Byron Sher Auditorium, Sacramento, California.

PLEASE BE ADVISED that the date of the meeting of the California Air Resources Board **has changed** as follows:

DATE: December 16, 2011

TIME: 9:00 a.m.

LOCATION: California Environmental Protection Agency
Air Resources Board
Byron Sher Auditorium
1001 I Street
Sacramento, California 95814

SUBMITTAL OF COMMENTS

To be considered by the Board, written comments, not physically submitted at the meeting, must be submitted on or after October 31, 2011 and received no later than 12:00 noon on December 15, 2011, and must be addressed to the following:

Postal mail: Clerk of the Board, Air Resources Board
1001 I Street, Sacramento, California 95814

Electronic submittal: http://www.arb.ca.gov/lispub/comm/bclist.php

Please note that the webpage provided above for electronic submittal is for comments on the following off-road-related regulations:

- SORE
- Tier 4 off-road CI engines
- Off-road spark-ignition engine exhaust emission certification test fuel

To ensure that all comments are properly considered and responded to, please identify in the subject heading of each comment letter the regulation(s) for which comments are being submitted.

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- Documentos disponibles en un formato alterno u otro idioma.
- Una acomodación razonable relacionados con una incapacidad.

Para solicitar estas comodidades especiales o necesidades de otro idioma, por favor llame a la oficina del Consejo al (916) 322-5594 o envíe un fax a (916) 322-3928 lo más pronto posible, pero no menos de 10 días de trabajo antes del día programado para la audiencia del Consejo. TTY/TDD/Personas que necesiten este servicio pueden marcar el 711 para el Servicio de Retransmisión de Mensajes de California.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.arb.ca.gov.

California Environmental Protection Agency
AIR RESOURCES BOARD

STAFF REPORT: INITIAL STATEMENT OF REASONS FOR PROPOSED RULEMAKING

ADOPTION OF THE PROPOSED AMENDMENTS TO CALIFORNIA'S SMALL OFF-ROAD ENGINE AND TIER 4 OFF-ROAD COMPRESSION-IGNITION ENGINE REGULATIONS AND TEST PROCEDURES; AND, AMENDMENTS TO THE EXHAUST EMISSION CERTIFICATION TEST FUEL FOR OFF-ROAD SPARK-IGNITION ENGINES, EQUIPMENT, AND VEHICLES

Mobile Source Control Division
Emission Research and Regulatory Development Branch

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State of California
AIR RESOURCES BOARD

STAFF REPORT: INITIAL STATEMENT OF REASONS FOR PROPOSED RULEMAKING

Public Hearing to Consider

ADOPTION OF THE PROPOSED AMENDMENTS TO CALIFORNIA'S SMALL OFF-ROAD ENGINE AND TIER 4 OFF-ROAD COMPRESSION-IGNITION ENGINE REGULATIONS AND TEST PROCEDURES; AND, AMENDMENTS TO THE EXHAUST EMISSION CERTIFICATION TEST FUEL FOR OFF-ROAD SPARK-IGNITION ENGINES, EQUIPMENT, AND VEHICLES

To be considered by the Air Resources Board at a two-day meeting of the Board that will commence December 15, 2011, and may continue to December 16, 2011, at

California Environmental Protection Agency
Air Resources Board
Byron Sher Auditorium
1001 I Street
Sacramento, California 95814

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LIST OF ACRONYMS

ABT	Averaging, Banking, and Trading
ALT	Alternate
ARB	Air Resources Board
BOARD	Air Resources Board
CAA	Clean Air Act
CaRFG2	Phase 2 California Reformulated Gasoline
CaRFG3	Phase 3 California Reformulated Gasoline
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CI	Compression-ignition
CO	Carbon monoxide
Districts	Air Pollution Control and Air Quality Management Districts
E6	Six-percent ethanol blend
E10	Ten-percent ethanol blend
EMA	Truck and Engine Manufacturers Association
FEL	Family emission limit
FR	Federal Register
HC	Hydrocarbons
HSC	Health and Safety Code
ISOR	Initial Statement of Reasons
kW	Kilowatt
LEV III	Low Emission Vehicle III
LSI	Large Spark-Ignition
MAC	Manufacturers' Advisory Correspondence
MTBE	Methyl-tertiary-butyl-ether
NMHC	Non-methane hydrocarbons
NMHC+NOx	Non-methane hydrocarbons plus oxides of nitrogen
NOx	Oxides of nitrogen
NOx+NMHC	Oxides of nitrogen plus non-methane hydrocarbons
OHRV	Off-Highway Recreational Vehicles
OPEI	Outdoor Power Equipment Institute
PM	Particulate matter
REC MARINE	Recreational Marine
SORE	Small Off-Road Engines
STAFF REPORT	Staff Report: Initial Statement of Reasons
SwRI	Southwest Research Institute
TRU	Transport Refrigeration Unit
U.S. EPA	United States Environmental Protection Agency

EXECUTIVE SUMMARY

The amendments proposed herein to the California emissions regulations and test procedures for new spark-ignition small off-road engines (SORE) and equipment, and new compression-ignition (CI) engines and equipment, are intended to address issues that have developed since the Air Resources Board (Board or ARB) last considered regulations for these source categories, and to enhance alignment with other ARB and United States Environmental Protection Agency (U.S. EPA) regulations.

Staff is proposing that the Board modify the SORE test procedures to adopt portions of U.S. EPA's title 40, Code of Federal Regulations, Parts 1054 and 1065 to increase alignment of the certification and exhaust emission testing requirements without any changes in the stringency of the emission standards and associated test procedures, and without any cost impacts. Staff proposes to generally align with the emission testing and certification requirements, while not aligning with the federal production-line testing requirements, and some special compliance and emission credit provisions. The proposed changes would result in a more efficient certification process for engine and equipment manufacturers because they would not need to perform duplicative test procedures for California and federal certifications. In addition, manufacturers of the test equipment and analyzers will eventually phase out support for maintaining older test equipment. Consequently, if ARB does not adopt the proposed emission test requirements, it may become increasingly impractical for manufacturers, private testing facilities, and ARB as well, to perform exhaust emission tests using the current test procedures.

Staff is also proposing that the Board update the off-road CI engine regulation and associated tier 4 test procedures to provide better harmonization with federal requirements for nonroad CI engines, but also to expand upon federal engine labeling requirements in order to facilitate implementation and enforcement of the various ARB in-use programs. Staff's recommendations for alignment do not adversely affect the stringency or the emission benefits of the existing regulation, but do correct clerical errors, standardize measurement specifications, calibrations, and instrumentation, and would remove unnecessarily burdensome reporting requirements currently placed on the engine manufacturers. For the most part, the proposed changes are relatively minor, but are necessary to avoid duplicate State vs. Federal certification testing and the production of 49-state engine families. Additionally, staff is proposing to align with U.S. EPA's anti-stockpiling provisions, which help ensure the realization of projected emission benefits, and a new interim tier 4 combined hydrocarbon plus oxides of nitrogen standard with the potential to provide emission benefits in addition to those of the December 2004 rulemaking.

Finally, staff is proposing modifications to the exhaust emission certification test fuel requirement used by California's off-road spark-ignition, gasoline-fueled categories including large spark-ignition engines, SORE, recreational marine engines, and off-highway recreational vehicles. Off-road engine, equipment, and vehicle exhaust

emission certification test fuel requirements have typically followed those of on-road motor vehicles. Since the requirements of the certification fuel for on-road motor vehicles are also scheduled to be modified to use a ten-percent ethanol-blend of gasoline, staff believes that it is fitting to update the off-road categories' exhaust emission certification test fuel requirements at this time.

Staff recommends that the Board adopt this proposal.

I. INTRODUCTION

This Staff Report: Initial Statement of Reasons (Staff Report) supports the proposed amendments to the following regulations, as well as the associated test procedures, as they are incorporated by reference:

- Regulations and Test Procedures for Small Off-Road Engines (SORE) and Equipment, title 13, California Code of Regulations (CCR), sections 2400-2409;
- Regulations and Test Procedures for Tier 4 Off-Road Compression-Ignition (CI) Engines and Equipment, title 13, CCR, sections 2420-2427;
- Regulations and Test Procedures for Off-Highway Recreational Vehicles (OHRV), title 13, CCR, sections 2410-2415;
- Regulations and Test Procedures for Recreational Marine (Rec Marine) Engines, title 13, CCR, sections 2440-2448;
- Regulations and Test Procedures for Large Spark-Ignition (LSI) Engines, title 13, CCR, sections 2430-2439; and
- Verification Procedure, Warranty, and In-Use Compliance Requirements for Retrofits to Control Emissions from Off-Road LSI Engines, title 13, CCR, sections 2780-2789.

The Staff Report describes the proposed amendments and the rationale for each amendment. It also presents staff's analysis of impacts associated with the implementation of the proposed amendments, including costs, and economic and environmental impacts. The proposed text of the regulations, which generally set forth numerical emission limits and related standards, is attached as Appendices A-F. The proposed test procedures, which generally set forth the manner in which engines are certified to meet the regulatory standards, are attached as Appendices G-Q.

A. Background

1. California's Off-Road Categories

California's off-road categories include SORE, LSI engines, Rec Marine engines, CI engines, and OHRV. Except for the CI category, which consists of engines that operate on diesel fuel, the other categories use spark-ignition engines that mostly operate on gasoline. Some SORE and LSI engines do operate on alternative fuels, such as liquefied petroleum gas or compressed natural gas.

The SORE category includes lawn, garden, and general utility engines that are less than or equal to 19 kilowatts (kW). The LSI engine category includes engines greater than 19 kW that are used in forklifts, portable generators, large turf care equipment, airport ground support equipment, and a wide array of other agricultural, construction, and general industrial equipment. The Rec Marine engine category includes personal watercraft engines, as well as outboard, inboard, and sterndrive recreational boat engines. The OHRV category includes off-road motorcycles and all-terrain vehicles. Off-road CI engines are used in a variety of off-road applications, including tractors, excavators, portable generators, transport refrigeration units (TRUs), irrigation pumps, welders, compressors, scrubber/sweepers, and a wide array of other agricultural, construction, and general industrial equipment.

2. Small Off-Road Engines

In 1990, ARB approved the initial exhaust emission control regulations for new SORE. These regulations included exhaust emission standards, emission test procedures, and provisions for warranty and production compliance programs, which are contained in title 13, CCR, sections 2400-2409, along with the applicable test procedures which are incorporated by reference. Later, the United States Environmental Protection Agency (U.S. EPA) adopted similar but less stringent regulations and test procedures for small "nonroad" spark-ignition engines, which were introduced in title 40, Code of Federal Regulations (CFR), Part 90 (40 CFR Part 90).

In 2003, ARB adopted more stringent SORE exhaust emission standards, and also aligned, with some modifications (ARB 2003), with U.S. EPA's small nonroad engine test procedures in 40 CFR Part 90.

In November 2008, ARB adopted modifications to the SORE emission credit program, including adding a zero-emission equipment credit program and an option to certify using a 10-percent ethanol-blend[1] (E10) of gasoline, as well as other minor modifications to the regulations (ARB 2008). Immediately before the Board hearing, manufacturers asked ARB to align with U.S. EPA's recently updated test procedures (i.e., Parts 1054 and 1065; see Section I.A.4 below). However, because the request was both beyond the scope of the noticed proposal for the hearing and staff was uncertain of the possible effects of such an alignment, the request could not be granted. Nevertheless, staff agreed to research the need to align with U.S. EPA's updated test procedures as the next course of action. Staff then reviewed the possibility of increasing the SORE category's alignment with U.S. EPA's current test procedures, and determined that it could be done without affecting the stringency of California's current emission standards. Accordingly, these proposed modifications for aligning are discussed in detail in Section II of this report.

[1] All percentages related to ethanol are by volume.

3. Tier 4 Off-Road Compression-Ignition Engines

a) Tiers 1, 2 and 3 Emission Standards

There are currently four tiers of increasingly stringent emission standards required for off-road CI engines in California. Particulate matter (PM), oxides of nitrogen (NOx), non-methane hydrocarbons (NMHC), and carbon monoxide (CO) are the pollutants regulated by these requirements, though not always collectively. In 1990, the Board adopted the very first emission standards for new off-road CI engines for engines less than 19 kW as part of the California requirements for 1995 and later small off-road engines. In 1992, the Board approved standards for off-road CI engines 130 kW and greater, which became known as the tier 1 standards. These standards were implemented beginning in 1996 and resulted in approximately a 50 percent drop in NOx emissions compared to previously uncontrolled engines.

At the same time in 1992 that the Board adopted tier 1 standards, the Board also adopted a second tier of more stringent emission standards, known as tier 2. These original tier 2 standards were to apply to engines with rated power $130 \leq kW \leq 560$ beginning in 2000. However, in response to U.S. EPA's 1998 adoption of even more stringent tier 2 emission standards to start in 2001, ARB fully aligned California's standards and implementation schedules with U.S. EPA's requirements in 2000 (ARB 1999). Tier 2 requirements were phased-in from 2001 through 2010, and encompassed the entire power spectrum of engine applications including those above 560 kW and those under 19 kW.

At the 2000 Board hearing, ARB also adopted U.S. EPA's tier 3 standards, which were phased-in from 2006 through 2011 and were applicable to engines with rated power $37 \leq kW \leq 560$. The new standards have reduced non-methane hydrocarbons plus oxides of nitrogen (NMHC+NOx) emissions by an additional 40 percent compared to the previous tier 2 standards. However, tier 3 PM standards are the same as tier 2 PM standards.

b) Tier 4 Emission Standards

Tier 4 emission standards are based on the use of advanced aftertreatment technologies (i.e., particulate filters and selective catalyst reduction) and can be up to 95 percent more stringent than the previous tier 3 standards. These standards are phased-in over two stages with the first stage known as tier 4 interim and the second as tier 4 final. Tier 4 interim standards began in 2008 for engines in the $19 \leq kW \leq 56$ power category and are scheduled to be phased-in through 2014 for engines greater than 560 kW. In general, the tier 4 interim standards require maximum control of PM and NMHC emissions, but only moderate control of NOx emissions, primarily to allow for the maturation of advanced aftertreatment NOx control technologies. Tier 4 final standards also began in 2008 for engines less than 19 kW and reduced the PM standard for these engines by 50 percent. Engines in the $56 \leq kW \leq 560$ power category will be subject to advanced aftertreatment-based standards for NOx and PM in

the 2014/2015 timeframe, with some generators greater than 560 kW also being required to meet aftertreatment-based standards. Advanced aftertreatment generally requires the use of ultra-low sulfur diesel fuel to function properly, which California mandated for both on-road and off-road use beginning in 2006.

4. Current U.S. Environmental Protection Agency Nonroad Regulations and Test Procedures

In 2001, U.S. EPA adopted title 40, CFR, Part 1065, as a "united" test procedure for both "nonroad" engines and equipment and on-highway heavy-duty CI engines. The test procedures in Part 1065 essentially replaced those previously used in Part 90 for nonroad spark-ignition engines and those in Part 89 for nonroad CI engines. Part 1065 is currently the technical part of U.S. EPA's regulations that promulgates emissions measurement methodologies, criteria for selecting analytical instrumentation, calibration procedures, and specifications for virtually all engine categories. Since its initial adoption, Part 1065 has been amended repeatedly to both improve and expand its applicability for the nonroad engine categories. In addition, U.S. EPA adopted specific "standard-setting" parts for each engine/equipment and vehicle category. Besides the actual emission standards, these standard-setting parts contain other provisions, such as certification protocols, production-line testing requirements, credit-generation allowances, etc. Also adopted was Part 1068, which is the general compliance, special provisions, and defect reporting part of U.S. EPA's regulations.

Since 2005, U.S. EPA has adopted several amendments to its nonroad CI engine regulations contained in Parts 1039, 1065, and 1068[2]. Federal nonroad CI engines certified to the more stringent "tier 4" emission standards must be tested using Part 1065. Use of Part 1065 is optional for less stringent "tier 3" and earlier model engines. Part 1039 is the standard-setting part of U.S. EPA's regulations for nonroad CI engines, and also contains provisions regarding certification procedures, labeling, credit generation, emissions averaging, equipment flexibility options, and hardship relief.

In 2008, U.S. EPA adopted exhaust and evaporative emission standards for small nonroad engines, which coincided with some of ARB's SORE emission standards that were adopted in 2003. At the same time, U.S. EPA divided up the small nonroad engine requirements that were contained in the then-current Part 90, and distributed these requirements into other parts. The applicable small nonroad engine test procedures are now contained in Part 1065; the standard-setting provisions for small nonroad engines are now contained in Part 1054; and, the small nonroad engine general compliance requirements are now contained in Part 1068. Also at that time, U.S. EPA set the requirement that nonroad small engines had to be tested using the Part 1065 test procedures starting with the 2013 model year, although carry-over of engines already certified using the older Part 90 test procedures would still be allowed.

[2] Ref.: 72 FR 72955 (Dec. 26, 2007); 73 FR 59521 (Oct. 8, 2008); 74 FR 84270 (Feb. 24, 2009); 74 FR 56260, (October 31, 2009); and 76 FR 37977 (June 28, 2011).

5. California's Off-Road Exhaust Emission Certification Test Fuel

In January, 2012, ARB is scheduled to propose adopting an E10 gasoline certification test fuel specification for on-road motor vehicles. Specifically, this proposal will be made in conjunction with the third phase of California's Low-Emission Vehicle (LEV III) rulemaking as part of the Advanced Clean Cars rulemaking package, and will essentially re-establish the consistency between the certification test fuel and the California commercially available gasoline. Staff believes that now is also an appropriate time to propose using the same E10 fuel for exhaust emission certification testing of off-road, gasoline-fueled, spark-ignition engines because this will re-establish the consistency that had existed originally between the off-road categories' certification and commercially available fuels.

Except for OHRVs, gasoline-fueled, spark-ignition engines certified for California's other off-road categories are currently allowed to conduct exhaust emission certification tests using Phase 2 California Reformulated Gasoline (CaRFG2), which is oxygenated with methyl tertiary-butyl ether (MTBE), as an option to the two specified federal test fuels[3]. For instance, both LSI engines and SORE can conduct testing using CaRFG2, federal Indolene, and federal tier II gasoline. In addition, ARB's 2008 SORE amendment rulemaking allowed these engines, and by an existing reference, LSI engines with displacements less than one liter as well, the option of using an E10 gasoline for certification testing if the associated engines were previously certified federally using an E10 gasoline (ARB 2008). Rec Marine engines can use CaRFG2, federal Indolene, and another type of federal fuel. Lastly, OHRVs are currently required to certify using either federal Indolene or federal tier II gasoline.

In 2007, ARB amended the Phase 3 reformulated gasoline (CaRFG3) regulations by essentially increasing the amount of fuel oxygenates (i.e., ethanol) in California's commercially available gasoline from 5.7 percent[4] (i.e., E6) to 10 percent (i.e., E10) by December 31, 2009. Staff recognized that there was limited ethanol-based emission test data available from off-road, spark-ignition engines during this rulemaking. Nevertheless, published test data that were available indicated that HC and CO emissions decreased when switching from E6 to E10, while NOx emissions tended to increase proportionally with increasing amounts of ethanol (ARB 2007, Appendix C). This change meant that for open-loop fuel-system-configured engines in particular, manufacturers needed to design fuel metering systems that would be emissions compliant when both certifying with either CaRFG2 or a federal test fuel and when operating in-use with CaRFG3 commercial fuel. Staff's proposal addresses this issue and is explained in further detail in Section IV.

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[3] One of these federal test fuels, known as "Indolene," is specified in title 40, CFR, Part 86, subpart B, section 86.113-94(a)(1); the other fuel, known as "tier II,: is specified in title 40, CFR, Part 86, subpart B, Section 86.113-04(a)(1).
[4] The 5.7 percent by volume ethanol-blend gasoline is commonly known as E6.

B. Regulatory Authority

ARB has been granted both general and specific authority under the Health and Safety Code (HSC) to adopt the proposed regulation. HSC sections 39600 (General Powers), 39601 (Standards, Definitions, Rules and Measures), and 39602.5 (Adoption of Rules and Regulations) confer on ARB, the general authority and obligation to adopt rules and measures necessary to execute the Board's powers and duties imposed by State law and to attain federal national ambient air quality standards in all areas by applicable attainment dates. HSC sections 43013 and 43018(a) provide broad authority to achieve the maximum feasible and cost-effective emission reductions from all mobile source categories, including both new and in-use on-road and off-road engines used in motor vehicles.

Additionally, California's Air Toxics Program, established under California law by AB 1807 (stats. 1983, ch. 1047, the Tanner Act) and set forth in the HSC sections 39650 through 39675, mandates that ARB identify and control air toxic emissions in California. Following the identification of a substance as a toxic air contaminant, HSC section 39665 requires ARB, with the participation of the local air pollution control and air quality management districts (Districts), and in consultation with affected sources and interested parties, to prepare a report on the need and appropriate degree of regulation for that substance. Based upon the findings of the report, ARB is vested with authority under sections 39666 and 39667 to adopt and enforce airborne toxic control measures that will respectively achieve emission reductions using best available control technology for nonvehicular and vehicular sources.

C. Rationale for the Proposed Amendments

The proposed amendments to both the SORE and tier 4 off-road CI engine regulations are mostly relatively minor and are intended to enhance alignment with the federal versions to make certification compliance less burdensome for the off-road engine and equipment manufacturers. Specifically, they are necessary to avoid imposing either duplicate California vs. federal certification testing or forcing manufacturers to produce separate California and 49-state engine families. Nevertheless, complete harmonization with the federal provisions is not possible because it would compromise the expected future emission reductions required for California. Descriptions and rationale for these more critical "non-alignment" amendments are presented in Section II for the SORE category and in Section III for the tier 4 off-road CI engine category. A description and rationale for the proposed amendment to completely align the off-road exhaust emission certification test fuel with the new E10 certification test fuel for on-road motor vehicles is provided in Section IV.

Requirements and rationale for each provision of the proposed amendments to the regulations and applicable test procedures are provided in Appendix S for the SORE category, in Appendix T for the tier 4 off-road CI engine category, and in Appendices S,

U, V, and W for the proposed off-road exhaust emission certification test fuel amendments.

D. Stakeholder Participation

1. Small Off-Road Engines

On July 11, 2011, staff posted Mail-out #MSC 11-24, which included drafts of the proposed test procedure changes. This posting was announced via email on ARB's *msprog* and *orspark* listserve to all stakeholders, including environmental organizations, engine manufacturers, equipment manufacturers, and trade associations, as well as other interested parties. In addition to the Mail-out, staff held a meeting with several manufacturers and representatives of the Truck and Engine Manufacturers Association (EMA) and the Outdoor Power Equipment Institute (OPEI) on July 12, 2011 to discuss how the test procedure changes would affect their companies' engine and equipment certifications. Subsequently, staff shared draft proposed regulatory language with all stakeholders. Finally, telephone conference calls were held on September 1, 2011, with EMA and OPEI, and on October 12, 2011 with OPEI. to discuss the significant changes that staff made to the proposal as a result of the oral and written comments received, which are reflected in this Staff Report. Public information concerning the development of this proposal was also made available on ARB's website at www.arb.ca.gov/msprog/sore/sore.htm.

2. Tier 4 Off-Road Compression-Ignition Engines

In May 2009, tier 4 off-road CI engine manufacturers formally asked ARB to maintain full alignment and harmonization with the federal regulations. On July 8, 2009, staff met (via a telephone conference call) with representatives of EMA and several manufacturers to initiate discussions for such an alignment. Since that time, staff has worked cooperatively with these manufacturers in developing harmonizing amendments to the California tier 4 off-road CI engine regulations and test procedures, without affecting the stringency of California's current emission standards. Specifically, staff held subsequent meetings in El Monte, California, with EMA and manufacturers on June 7, 2011, and July 26, 2011, and via telephone conference calls on June 30, 2011, and July 7, 2011. On August 26, 2011, staff posted Mail-out #MSC 11-28, which included drafts of the proposed regulatory and test procedure changes. This posting was announced via email on ARB's *ms-mailings, ag, arber, diesel-retrofit, ordiesel, cert, tru, portable*, and *misc* listserve to all stakeholders, including environmental organizations, engine manufacturers, equipment manufacturers, and trade associations, as well as other interested parties.

3. Exhaust Emission Certification Test Fuel

On August 12, 2011, staff posted Mail-out #MSC 11-26 which stated ARB's intent to propose, at the December 2011 Board hearing, adoption of a new E10 certification test fuel for the LSI engine, SORE, OHRV, and Rec Marine spark-ignition engine categories for demonstrating compliance with the applicable exhaust and evaporative emission standards. The posting announced this intent via email to ARB's *fuels*, *ms-mailings*, *orrec*, *orspark*, and *recmarine* listserve listings, to all stakeholders, including environmental organizations, engine manufacturers, equipment manufacturers, and trade associations, as well as other interested parties. Later, staff decided to change the applicability of the proposal to only exhaust emission testing. Then on August 30, 2011, staff met, via a telephone conference call, with representatives of EMA and OPEI to discuss the latest proposal. Representatives of the OHRV and Rec Marine engine categories were also apprised during development of the proposal by telephone or email correspondence.

II. PROPOSED AMENDMENTS TO THE SMALL OFF-ROAD ENGINE TEST PROCEDURES

In general, staff proposes that 40 CFR, Parts 1054 and 1065 be adopted by reference and incorporation, with applicable modifications, into the SORE test procedures, effective for the 2013 and later model years. To this end, staff proposes to retire the existing test procedures and rename them the "...2005 - 2012 Test Procedures," and create replacement test procedures to be known collectively as the "...2013 and Later Test Procedures." In addition, staff proposes amending the corresponding citations of these test procedures that are contained in sections 2403 and 2407 of 13 CCR, to indicate these changes. The proposed alignment of the SORE test procedures does not affect the stringency of the current emission standards or test procedures.

A. Alignment with Part 1054

Part 1054, which is commonly referred to as the "standard-setting" part of the federal small nonroad engine category, also contains certification protocols, production-line testing requirements, credit-generation allowances, and other related provisions. However, California has its own unique versions of these emission standards and other provisions, which are already contained in 13 CCR, sections 2400 through 2409. Thus, in aligning with the federal Part 1054, staff is proposing adopting the entire Part 1054, but with modifications that then reference and include these California-specific sections from 13 CCR in place of the similar federal provisions. Accordingly, staff proposes that the current federal Part 1054, as of November 8, 2010, be adopted and incorporated with the appropriate modifications that include the California-specific emission standards, production-line testing requirements and credit-generation allowances.

The new test procedure will be titled the "California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines, Engine-Testing Procedures (Part 1054).

B. Alignment with Part 1065

The material contained in Part 1065 is complex and technical in nature. It involves specific information about "state-of-the-art" testing equipment, systems, and processes that are necessary for properly conducting the emission testing of the applicable engines in order to achieve the required accuracy while minimizing variability of the test data generated using the current test procedures specified in 40 CFR, Part 90.

California's alignment with Part 1065 is appropriate because it will prevent a duplication of effort that would arise if manufacturers were required to conduct two separate emission test procedures (i.e., one federal procedure and another California procedure). Such a scenario is undesirable because of the extra costs that would be required in performing two separate test procedures. Further, the majority of manufacturers have already upgraded their own test equipment in order to be compliant with Part 1065 under current federal requirements. Alignment is also warranted due to the fact that the test equipment manufacturers intend to eventually cease to maintain existing older test equipment. Thus, failure to align with the current federal Part 1065 would mean that the use of the existing test procedures will become increasing impractical, or even impossible over time, for manufacturers and independent testing facilities, including ARB.

Accordingly, staff proposes that the current federal Part 1065, as of June 28, 2011, be adopted into the SORE test procedures, which are incorporated by reference into 13 CCR, except for modifications as described below. The new test procedure will be titled the "California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines, Engine-Testing Procedures (Part 1065).

1. Allowance for Supplemental Engine Cooling

The federal version of Part 1065 includes section 1065.122, which allows supplemental cooling of an engine for simulating in-use conditions when conducting exhaust emission testing. However, staff believes that the current California allowance for supplemental cooling, as stated in sections 90.118(f) and 90.307, of the current SORE test procedures, is more representative of in-use conditions and its continued use will maintain the stringency of the current test procedures. Specifically, the current allowance requires manufacturers to justify the need and use of any auxiliary fans that would be used for providing supplemental cooling, as well as requiring that manufacturers also demonstrate that the supplemental cooling resulting from the use of these fans is representative of in-use engine operation. Accordingly, staff proposes adopting Part 1065, with modifications that add the current California requirements.

2. Measurement of PM Emissions from Two-Stroke Engines

Unlike U. S. EPA's small nonroad engine regulations, California's SORE emission standards include a PM emission standard for two-stroke engines. Thus, for this particular engine category, the PM emission measurement provisions contained in Part 1065 would be applicable to only California. Further, California has always allowed manufacturers the option of demonstrating compliance with this standard using the measured HC emissions as a surrogate in determining PM emission levels (see section 90.404 (e), of the current test procedures). Therefore, staff believes that continuing this option is reasonable because it provides manufacturers with flexibility in conducting the testing required for demonstrating emissions compliance, without affecting the stringency of the current PM emission standards. Accordingly, staff proposes that the language in section 1065.650(i) of Part 1065 be adopted and modified to retain this existing option.

3. Exhaust Emission Certification Test Fuel Requirements

The federal Part 1065 provides engine test fuel and lubricant information in subpart H. While staff is proposing adopting this subpart, certain changes are necessary in order to address specific California requirements. In particular, section 1065.701 needs to be modified to include the test fuels currently allowed to be used by California for SORE exhaust emission certification testing. Further, because staff is also proposing to align the off-road categories' certification exhaust emission test fuel requirement with the E10 gasoline certification test fuel that will be proposed in January 2012 for on-road motor vehicles, section 1065.701 needs to be modified to indicate this intent (see Section IV for more discussion on this E10 test fuel). This proposal will allow the use of an E10 test fuel as an option for conducting exhaust emission certification for the 2013 through 2018 model years. Use of the E10 test fuel will become mandatory beginning with the 2019 model year.

Staff is proposing that an existing option, in section 90.308(b)(1)(i)(B) of the SORE test procedures, which allows using an E10 test fuel provided the same fuel was approved for federal certification testing, be retired as part of the proposed retirement of the current SORE test procedures at the end of the 2012 model year. Retaining this option beyond the 2012 model year will become unnecessary for two reasons. First, the use of the on-road E10 certification test fuel as an off-road testing option for 2013 through 2018 model year certifications will make the current option unnecessary. Second, another E10 test fuel option is in the current federal provisions (i.e., Parts 1054.501(b)(2)(i) and 1054.501(b)(2)(iii)). Thus, the proposed alignment with Part 1054 effectively maintains this currently allowed test fuel option.

C. Alignment with Part 1068

Part 1068 establishes general compliance requirements. Much of the California SORE compliance requirements are currently addressed in 13 CCR. In addition, some portions of Part 1068 concern selective enforcement authority, imports, and bonds, none of which California has the authority to implement. Because most of the requirements that are found in Part 1068 are either addressed in the 13 CCR or California does not have the authority to implement the requirements, staff does not find it necessary to include Part 1068 in the alignment process.

III. PROPOSED AMENDMENTS TO THE TIER 4 OFF-ROAD COMPRESSION-IGNITION ENGINE TEST PROCEDURES

The staff recommends that the Board amend sections 2421, 2423, 2424, 2425, 2425.1, 2426, and 2427, title 13, CCR, as set forth in Appendix B: "Proposed Amendments to the California Regulations for 2011 and Later Off-Road Compression-Ignition Engines and Equipment" and Appendices K-M: "Proposed Amendments to the California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines and Equipment, Part I-D, Part I-E, and Part I-F" of this Staff Report. The proposed regulatory language is intended to further harmonize portions of ARB's exhaust emission requirements for new off-road CI engines, as appropriate, with those of 40 CFR Parts 1039, 1065, and 1068, as most recently amended by U.S. EPA in the Federal Register (FR) on June 28, 2011 (76 FR 37977). Although the California and federal programs for CI engines will be similar upon adoption of this proposal, ARB will retain its authority to further regulate off-road mobile sources in the future and its ability to enforce the regulations in California.

In sum, the proposed amendments correct clerical errors, clarify existing requirements, standardize measurement specifications, calibrations, and instrumentation, and provide additional compliance flexibility options without sacrificing air quality benefits. The following subsections discuss the major provisions of the staff proposal in further detail. The critical amendments proposed are as follows:

A. Emission Standards

Staff proposes to align with the federal alternate combined oxides of nitrogen and non-methane hydrocarbons (ALT NOx+NMHC) standards and the corresponding family emission limit (FEL) caps for tier 4 engines ranging from 56 kW through 560 kW. Staff is also proposing to correct clerical errors that unintentionally limited the years of applicability for several alternative FEL caps erroneously identified in the regulations and test procedures.

1. Tier 4 ALT NOx+NMHC standards and FEL Caps

Both ARB (ARB 2004) and U.S. EPA (U.S. EPA 2004) intended that the tier 4 regulation would allow engine manufacturers to continue producing a small number of tier 3 off-road CI engines using emission credits after the tier 4 standards began. The purpose of this allowance was to increase the cost-effectiveness of the regulation. However, the original U.S. EPA regulations and current California regulation inadvertently hinder manufacturers from using this certification allowance because the tier 4 averaging programs do not allow manufacturers to show compliance with the existing 0.19 g/kW-hr NMHC standard using credits. To fix this oversight, staff is proposing to amend the California regulations and test procedures by aligning with the revised U.S. EPA regulation, which allows manufacturers the option to use credits to show compliance with new ALT NOx+NMHC standards for engines ranging from 56 kW through 560 kW. The new ALT NOx+NMHC standards for each power category in this range would be equal to the numerical value of the applicable alternate oxides of nitrogen (ALT NOx) standard plus 0.10 g/kW-hr. Because the new combined ALT NOx+NMHC standards would be more stringent than the sum of the otherwise separately applicable ALT NOx and NMHC standards, a small environmental benefit is likely to occur when manufacturers choose to certify to the new ALT NOx+NMHC standards. However, engines certified to these ALT NOx+NMHC standards would themselves not be allowed to generate emission credits. Table R - II.A, in Appendix R, shows how the ALT NOx+NMHC standards would compare to other existing certification options.

The proposed FEL caps corresponding to the new ALT NOx+NMHC standards described above are shown in Table R - II.B, in Appendix R. FEL caps are the maximum emissions level to which an engine family may be certified using averaging, and are typically set at the previous tier emission standards, which in this case are the tier 3 NMHC+NOx standards for the power categories affected.

Table R - II.B, in Appendix R, also identifies proposed revisions to the dates of applicability for several of the existing FEL caps. These proposed changes are provided only to clarify the existing regulations and do not affect the stringency of existing requirements.

2. Alternative NOx FEL Cap Applicability

The proposed revision to the start dates for the ALT 20% NOx FEL caps are intended to correct an inconsistency between the provisions in section 1039.104 of the 2008 and Later Test Procedures and a table in the existing regulation (i.e., Table 2b). Specifically, section 1039.104(g)(1) states that the period of applicability for certifying engines to the ALT NOx FEL caps should extend over a four-year period, but the existing regulations inadvertently specify the period of applicability as either only one or two years for engines ranging in power from 56 kW through 560 kW, beginning at least two years after the commencement of the tier 4 interim standards. This exclusion of applicability during the initial years of tier 4 interim standards would have effectively

negated the allowance of any tier 3 engines to be averaged in compliance with the ALT NOx standards for the power categories affected. This is because the errors in Table 2b, of Part 1039.104, would have established a more stringent ALT NOx FEL Cap for engines certified to the ALT NOx standard at the onset of tier 4 interim implementation in 2011, then permit a less stringent ALT 20% NOx FEL Cap for engines that later certified to the ALT NOx standard, and then once again require a more stringent ALT NOx FEL Cap when tier 4 final standards became effective. This is clearly inconsistent with the intent of section 1039.104 to ease the transition to the final tier 4 standards.

This matter was addressed by ARB in the form of a Manufacturers' Advisory Correspondence (MAC) 2010-002, dated December 21, 2010 (MAC 2010-002). Staff's proposal would codify the provisions of that MAC and would address the duration of ALT 20% NOx FEL Caps for other affected power categories not covered by the MAC.

B. Enhanced Labeling Requirements

Staff is proposing that additional information, beyond that required by U.S. EPA, be included on off-road CI engine emission control labels to aid in the implementation, compliance, and enforcement of ARB's off-road diesel in-use regulations (e.g., TRU, Off-Road Fleets, Ports, etc.). These California-specific programs require fleets to comply with an averaged target emissions level based on the model year, the certification tier, and/or the power of the engines/equipment in the fleet. End users (i.e., fleet owners) are responsible for calculating their fleet averages and target emission levels per the provisions of the applicable in-use regulation.

However, current emission control labels for replacement engines are not required to include the certification power category or an explicit designation of the emissions tier to which the engine conforms. The lack of this information makes equipment registration, which is the responsibility of end-users, error prone, which in turn makes tracking off-road CI engine in-use fleet emissions by ARB staff more complicated. Enforcement efforts in the field can also be compromised as a result of insufficient information on the emission control label with which to confirm compliance. For example, a field inspector may have difficulty confirming that the power information submitted by an end-user, when registering an engine in one of ARB's in-use programs, is accurate unless the power information is readily available to the inspector (i.e., on the label) at the time of inspection. Without engine power being explicitly stated on the label, end-users would have to resort to some other possibly less-than-accurate means for determining engine power, perhaps even guessing at a value, when submitting this information during the registration process. Consequently, incorrect power submissions have the ability to significantly alter the calculation of emission targets and adversely affect the perceived emission benefits of the in-use requirement. Similarly, confirming that the correct emissions factors have been registered for an engine would be impossible without accurate model year or emissions tier information being readily available to the inspector.

To address these concerns, staff is proposing that, in addition to existing labeling requirements, all emission control labels for new and replacement off-road CI engines include the following information beginning January 1, 2013:

ENGINE POWER:	{insert the certified power of the specific engine configuration, if available, otherwise insert advertised power in kilowatts}
REFERENCE FAMILY NAME:	{insert the engine family name of the replacement engine as recorded in the Executive Order for the engine family to which the replacement engine was originally certified}
DATE OF MANUFACTURE:	{insert the engine build date}

Staff believes that these proposed amendments provide the correct balance between the optimal implementation and enforcement of ARB's in-use programs vs. the level of commitment that would be required of industry to comply with the amendments in the short-term.

C. Updated Test Procedures

Staff is proposing to amend the existing tier 4 off-road CI test procedures to incorporate additional California-appropriate revisions made by U.S. EPA since 2005. The existing 2008 and Later Test Procedures incorporate the majority of the sections contained in 40 CFR, Parts 1039, 1065, and 1068 related to off-road CI engines and equipment. Staff proposes to retire the existing test procedures and rename them the "...2008 - 2010 Test Procedures," and create replacement test procedures to be known collectively as the "...2011 and Later Test Procedures." The 2011 and Later Test Procedures will still contain the incorporated sections of 40 CFR, Parts 1039, 1065, and 1068, as revised by staff and included as appendices to this Staff Report, but instead of a single document containing all three parts, the 2011 and Later Test Procedures will be a collection of three separate documents. Having three separate documents makes it easier to make any future amendments to each individual test procedure, as necessary.

1. Part 1039

Part 1039 was originally adopted by the Board in 2004 as part of the "California Exhaust Emission Standards and Test Procedures for New 2008 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-C." Staff is proposing to update this portion of the existing California test procedures with California-appropriate modifications of the latest revision of 40 CFR Part 1039, rather than to incorporate the latest revision of the federal regulation in its entirety into a new document. The new test procedure will be titled the

"California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression Ignition Engines, Part I-D." The key alignments of off-road CI being proposed to Part 1039, many of which parallel similar changes for SORE as described in Section II above, are:

- The adoption of a new tier 4 interim NOx+NMHC standard for engines ranging in power from 56 kW through 560 kW – section 1039.102(e)(3)
- Correction of clerical errors that unintentionally limited the dates of applicability for several ALT NOx FEL Caps – section 1039.104
- Modification of the criterion for selecting engine families regarding engine cylinder arrangement – section 1039.230(b)(7)
- Removal of unnecessary and/or redundant labeling and notification instructions regarding the equipment manufacturer flexibility program – section 1039.625
- Correction of clerical errors that inadvertently elevated the minimum standard for equipment flexibility engines beyond that originally intended – section 1039.625(e)(3)
- Clarification regarding the rounding of Averaging, Banking, and Trading (ABT) credits – section 1039.705(b)

2. Part 1065

The Board originally adopted the sections of Part 1065 relevant to off-road CI engines in 2004 as part of the "California Exhaust Emission Standards and Test Procedures for New 2008 and Later Tier 4 Off Road Compression-Ignition Engines, Part I-C." So much has changed regarding emission measurement technologies and techniques since ARB adopted Part 1065 in 2004, as evidenced by the sheer number of amendments to the federal requirements. Accordingly, staff is proposing to incorporate the latest revision of 40 CFR, Part 1065, with staff's California-specific revisions, as a new test procedure document to be titled "California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off Road Compression Ignition Engines, Part I-E," rather than updating this portion of the existing California test procedures. Noteworthy among the changes to the test procedures are provisions for using and calculating an optional declared speed value in section 1065.510(f)(3)(i), and for the standardization of calculating exhaust restriction setpoints in section 1065.130(h).

3. Part 1068

The portion of Part 1039 pertaining to off-road CI engines was originally adopted by the Board in 2004 as part of the "California Exhaust Emission Standards and Test Procedures for New 2008 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-C." Staff is proposing to update this portion of the existing California test procedures with California-appropriate modifications from the latest revision of 40 CFR, Part 1068 rather than to incorporate the latest revision of the federal regulation in its entirety into a new document. The new test procedure will be titled the "California

Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression Ignition Engines, Part I-E." The key provisions being proposed are:

- Allowance for distributors to replace incorrect labels prior to sale of the engine to an ultimate purchaser – section 1068.101(b)(7)(i)(D)
- Incorporation of provisions related to the duration and applicability of Executive Orders – section 1068.103(c)
- Incorporation and clarification of anti-stockpiling provisions – section 1068.103/105
- Revisions to the label content for replacement engines – section 1068.240
- Clarification of the provisions for shipping engines independently of required aftertreatment and for delegated final assembly – section 1068.260/261
- Clarification that defect reporting applies only to regulated pollutants and revision of thresholds for filing reports – section 1068.501
- Incorporation of the federal definition for "Date of Manufacture" – section 1068.801

D. Stockpiling Prohibitions

Staff proposes to align with recently added federal provisions in 40 CFR, section 1068.103, and amendments to section 1068.105, concerning the intentional over-production (i.e., stockpiling) of engines prior to a year in which a change in the standards occurs. The proposed language makes clear that manufacturers cannot deviate from normal production and inventory practices to circumvent the regulations. A new section 2423(m), in 13 CCR, is proposed for inclusion in the California regulations.

E. Other Proposed Amendments

In addition to the above proposed amendments, staff is proposing several key terms for either incorporation or modification into the regulations and test procedures, including: a new standardized abbreviation method, as an aid to readers, for readily identifying references to the test procedures; aligning with the federal definition of "constant speed engine/operation" to more accurately describe the normal operation of a constant speed engine; aligning with the federal definition of "date of manufacture" to standardize the assignment of engine build dates; and, aligning with the federal definition of "carryover' to ensure uniform criteria for the application of data from previous model-year engine families. More detailed descriptions of these proposed key term definitions are in Appendix R.

Lastly, staff proposes other miscellaneous amendments, including: amending section 2426(a), in 13 CCR, to extend the requirement for manufacturers to include a copy of the California Emission Control Warranty Statement to all off-road CI engines;

harmonizing with the federal provisions for extending some limited-scope inspection authorization applicability of certain test procedure provisions to equipment manufacturers in California; and, for fixing grammatical and formatting errors recently discovered throughout the regulation and test procedures.

F. Differences Between California and Federal Regulations

Staff has endeavored to harmonize California's off-road CI proposal with the provisions of 40 CFR, Parts 1039, 1065, 1068, and incorporated parts. However, staff's proposal differs from the federal program in some relatively minor, but important ways that are necessary to support California's unique air quality programs. These differences are primarily documentary in nature and do not present any technical obstacles for the off-road industry to overcome. These major new differences between ARB off-road and U.S. EPA nonroad CI programs are: replacement engine labeling requirements, preliminary certification approvals, untracked replacement engine provisions, partially completed engine requirements, and definition of an engine. Existing differences from the tier 4 2004 rulemaking which have been retained are: flexibility engine labeling provisions, flexibility engine Executive Orders, rebuild labeling prohibition and supplemental label requirements, extension of replacement engine reporting requirements, and in-use compliance/recall program provisions. More detailed descriptions of these differences are in Appendix R.

The differing state regulations are authorized by the Authorities cited in Appendix B of this Staff Report. The proposed amendments are intended to minimize costs of separate state and federal regulations. Although there are no net aggregate costs associated with staff's proposal, any remaining individual cost differential is essential for effective enforcement to ensure emissions reductions in California benefiting human health, public welfare, and the environment.

IV. PROPOSED AMENDMENTS TO THE OFF-ROAD EXHAUST EMISSION CERTIFICATION TEST FUEL

Staff is proposing to align the exhaust emission certification test fuel for off-road spark-ignition, gasoline-fueled engines with the E10 gasoline specifications that are planned for proposal in December 2011 for approval in January 2012 for on-road motor vehicle certification emission testing under the third rulemaking phase of California's LEV standards. Specifically, the new E10 test fuel would be required for exhaust emission certification testing of new gasoline-fueled, LSI, SORE, OHRV, and Rec Marine off-road categories. Staff is proposing that the use of E10 gasoline be made an option for exhaust emission testing for the 2013 through 2018 model years. Under a similar mandatory implementation schedule expected to be proposed for on-road motor vehicles, use of the E10 test fuel would become mandatory for exhaust emission testing of these off-road categories beginning with the 2019 model year. At this time, staff is proposing that this amendment apply to only the off-road exhaust emission certification

test fuel. Amendments for changing the evaporative emission certification test fuel to an E10 fuel would be best handled separately under future rulemakings that can specifically focus on those particular emission characteristics with respect to each off-road category.

This proposed test fuel change is appropriate because doing so maintains the current test fuel consistency between on-road motor vehicles and most of the off-road categories (OHRVs are the exception because they currently certify using only federal gasolines test fuels). The proposed change is also appropriate because it establishes a complete consistency between the off-road categories' certification and commercially available fuels. Specifically, except for OHRVs, the off-road categories' certification and commercially available fuels have been consistent with respect to using CaRFG2 beginning with the SORE category in 1995. However, that consistency was upset on December 31, 2003, when the MTBE oxygenate in California's commercially available gasoline was replaced with another oxygenate having a 5.7-percent ethanol blend. Although both fuels have similar oxygenating characteristics, this replacement introduced an inconsistency between the particular oxygenate specifications of the required certification test fuel (i.e., CaRFG2 with MTBE) and the commercially available fuel (i.e., CaRFG3 with ethanol). Further, this proposed test fuel amendment is appropriate because the 2007 CaRFG3 amendments essentially required that the only commercially available gasoline allowed to be produced and dispensed in California on and after December 31, 2009 must have 10-percent ethanol as the oxygenate. Accordingly, all new off-road, spark-ignition engines sold and operated in California since that time have been designed to be emissions compliant when they are certified with either a lower oxygenated MTBE CaRFG2 or a non-oxygenated federal test fuel, yet they operate in-use with a higher oxygenated CaRFG3. In addition, since December 31, 2009, all new engines used by OHRVs have been designed to be emissions compliant when they are certified with a non-oxygenated federal gasoline, yet also operate in-use with an oxygenated CaRFG3.

Staff believes that the emissions increase/decrease differences exhibited by engines when switching from an E6 to an E10 test fuel (or a non-oxygenated fuel to an E10 test fuel, in the specific case of OHRVs), particularly engines with open-loop systems, could be reduced to zero by making the proper adjustments to the engines' fuel metering systems. Consequently, with such proper adjustments, an E10 gasoline could now be used as a certification test fuel, without affecting the stringency of the existing exhaust emission standards. This is because these adjustments would allow the engines' fuel metering systems to be fully optimized for emissions compliance both when certifying and when operating in-use on only an E10 type of gasoline. In addition, certain adjustments to off-set the increase in the E10 gasoline's emissions due to increased oxygenation could also be advantageous, and therefore, likely to be employed. Such adjustments might improve engine durability by providing additional engine cooling as a byproduct of any extra fuel metering.

Therefore, because the proposed amendment both maintains the general current test fuel consistency between on-road motor vehicles and most of the off-road categories

and establishes a complete consistency between the off-road categories' certification and commercially available fuels, staff proposes that the appropriate sections of the LSI engine, SORE, OHRV, and Rec Marine engine test procedures be amended to require using the E10 certification test fuel that is specified in the "California Exhaust Emission Standards and Test Procedures for 2015 and Subsequent Model Passenger Cars, Light Duty Trucks, and Medium Duty Vehicles," which are planned for proposal in December 2011 for approval in January 2012, for off-road spark-ignition engine certification exhaust emission testing. This new test fuel would be allowed as an option, for the 2013 through 2018 model years, to the test fuels that are currently allowed. Staff is proposing this option, and over this range of model years, because it affords manufacturers ample flexibility in deciding when to switch over to certifying engines using an E10 test fuel, based on their own requirements. In 2019 and later model years, using the E10 fuel would become mandatory as the sole exhaust emission certification test fuel. Staff also proposes that the applicable sections in 13 CCR for these off-road engine categories be amended to reference and incorporate the revised on-road motor vehicle test procedures. In addition, the test fuel requirements under the in-use compliance requirements for retrofits for controlling emissions from off-road LSI engines, contained in 13 CCR sections 2783(d) and 2784(c), should be modified to optionally allow this E10 certification test fuel for engines tested during the 2013 through 2018 calendar years, and requiring this E10 test fuel for such engines tested during 2019 and later calendar years.

In the event that sometime in the future, U.S. EPA adopts a greater-than-ten-percent ethanol-blend certification test fuel, ARB and U.S. EPA would likely join in a technical evaluation, analysis, and review process to seek to establish an equivalency factor between their respective ethanol test fuels prior to the required mandatory use of the fuels (i.e., an off-road category "reciprocity" agreement).

V. ENVIRONMENTAL IMPACTS ANALYSIS

A. Background on Environmental Review Process

ARB is the lead agency for the proposed regulation and has prepared this environmental analysis pursuant to its certified regulatory program. The California Environmental Quality Act (CEQA) at Public Resources Code section 21080.5 allows public agencies with regulatory programs to prepare a plan or other written document in lieu of an environmental impact report or negative declaration once the Secretary of the Resources Agency has certified the regulatory program. ARB's regulatory program has been certified by the Secretary of the Resources Agency.[5] As required by ARB's certified regulatory program, and the policy and substantive requirements of the California Environmental Quality Act (CEQA), ARB has prepared this environmental analysis to assess the potential for significant long or short term adverse environmental

[5] State CEQA Guidelines section 15251 (d); CCR, title 17, sections 60005-60008.)

impacts associated with the proposed action and a succinct analysis of those impacts.[6] In accordance with ARB's regulations, the assessment also describes any beneficial impacts.[7] The resource areas from the state CEQA Guidelines environmental checklist were used as a framework for assessing potentially significant impacts.[8] In accordance with ARB's certified regulatory program, for proposed regulations the environmental analysis is included in this Staff Report: Initial Statement of Reasons (ISOR) for the proposed regulatory action.[9]

If comments ARB receives during the public review period raise significant environmental issues, staff will summarize and respond to the comments in writing. The written responses will be included in the Final Statement of Reasons (FSOR) for the regulation. In accordance with ARB certified regulatory program, prior to taking final action on the proposed regulation, the decision maker will approve the written responses.[10] If the regulation is adopted, a Notice of Decision will be posted on ARB's website and filed with the Secretary of the Natural Resources Agency for public inspection.[11]

B. Impacts Analysis

Based on ARB's review of the proposed regulatory action, staff has concluded that the amendments to the SORE, tier 4 off-road CI engine, and off-road spark-ignition engine regulations and test procedures (including the certification test fuel changes), would not have a significant adverse effect on the environment. No discussion of alternatives or mitigation measures is necessary because there are no significant adverse environmental impacts identified. The basis for this conclusion is provided below.

1. Potential Air Quality Benefits

The proposed amendments to the SORE, tier 4 off-road CI engine, and off-road spark-ignition engine regulations and test procedures do not affect the stringency of the current emission standards or the effectiveness of the test procedures. Accordingly, there are no quantifiable air quality benefits due to the proposed amendments. While all test procedures are designed to ensure that engines produced for sale in California meet California's emissions standards, the test procedures themselves, typically and here, do not generate additional emission reductions but rather seek to ensure reductions occur as planned.

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[6] CCR section 60005, subd (b).
[7] CCR 60005, subd. (d).
[8] State CEQA Guidelines, Appendix G.
[9] CCR section 60005.
[10] CCR 60007, subd (a).
[11] CCR 60007, subd. (b).

2. Other Potential Impacts

These proposed actions [e.g. aligning test procedures] do not change the stringency of the current emission standards or any impacts from conducting engine testing under the current test procedures and will not cause any change in compliance responses by the affected manufacturers. Because nothing in the amended test procedures can conceivably cause a change to the types, attributes, or number of engines they produce, no potential adverse impacts are at issue as explained below.

The proposed amendments will modify both the California SORE and tier 4 off-road CI engine regulations and test procedures, contained in title 13, CCR, to enhance the alignment with the current federal versions of these regulations and test procedures contained in title 40, CFR. The proposed amendments for alignment do not affect the stringency of the current emission standards or effectiveness of the test procedures. For the most part, the proposed amendments are relatively minor and improve the efficiency of the emission certification process, but a few are necessary to avoid imposing unreasonable compliance cost burdens on manufacturers, such as requiring duplicate California vs. federal emission certification testing and separate production of California vs. 49-state engines. In addition, some of proposed amendments to the tier 4 off-road CI engine labeling regulations expand upon the corresponding federal provisions in order to facilitate implementation and enforcement of the various ARB in-use fleet programs, and thereby ensure their expected emission benefits.

The proposed amendments to the regulations and test procedures, in 13 CCR, for California's off-road spark-ignition engine categories (i.e., SORE, LSI engines, Rec Marine engines, and OHRV) are for performing exhaust emission testing using the same 10-percent ethanol certification test fuel that ARB plans to adopt for on-road motor vehicle certification emission testing. The intent of this proposal is to maintain the current consistency between California's on- and off-road categories' certification test fuels and the commercial gasoline sold in California. It does not affect the stringency of the current off-road categories' exhaust emission standards or the likelihood that a given engine family is meeting those standards.

Furthermore, the proposed amendments to the SORE, tier 4 off-road CI engine, and off-road spark-ignition engine regulations and test procedures do not require or result in any new development or require modifications to buildings or other structures, affect operations at existing facilities, or cause any new land use designation. Therefore, the proposed amendments are not expected to result in any adverse impacts that would result from development including aesthetics, air quality, agricultural and forestry resources, biological resources, cultural resources, geology and soils, greenhouse gases, land use planning, mineral resources, population and housing, public services, recreation, or traffic and transportation. Further, the proposed amendments to the SORE, tier 4 off-road CI engine, and off-road spark-ignition engine regulations and test procedures do not involve any activity that would involve or affect hazardous material, hydrology and water quality, noise, or population and housing. This is because these

regulations and test procedures are already in existence and are an on-going part of the applicable certification process for the related engines and the proposed amendments do not mandate any action that could affect these resources.

C. Environmental Justice

The objectives of ARB's statewide regulatory programs are better air quality and reduced health risk for all residents throughout California. The Board has a policy that community health and environmental justice concerns be addressed in all of ARB's regulatory programs. This is consistent with the ARB's environmental justice policy of reducing exposure to air pollutants and reducing the adverse impacts from toxic air contaminants in all communities, including low-income and minority communities.

State law defines environmental justice as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies (Senate Bill 115, Solis; Stats 1999, Ch. 690; Government Code section 65040.12(c)). The Board has established a framework for incorporating environmental justice into the ARB's programs consistent with the directives of State law. The policies developed apply to all communities in California, but recognize that environmental justice issues have been raised more in the context of low income and minority communities, which sometimes experience higher exposures to some pollutants as a result of the cumulative impacts of air pollution from multiple mobile, commercial, industrial, area wide, and other sources. For over twenty-five years, ARB, local air districts, and federal air pollution control programs have made substantial progress towards improving the air quality in California. However, some communities continue to experience higher exposures than others as a result of the cumulative impacts of air pollution from multiple mobile and stationary sources and thus may suffer a disproportionate level of adverse health effects.

This proposal does not make changes to the stringency of the current exhaust emission standards so there is no emissions impact associated with the amendments. Thus, it is consistent with the ARB's environmental justice policy of reducing exposure to air pollutants and reducing the adverse impacts from toxic air contaminants in all communities, including low-income and minority communities. However, California will continue to evaluate improving technologies and will review the off-road emission standards as additional relevant scientific evidence becomes available to make certain that the health of the public is protected with an adequate margin of safety.

To ensure that everyone has an opportunity to stay informed and participate fully in the development of the proposal, staff has distributed information through the internet, as described in section I.D. of this report.

VI. ECONOMIC IMPACT

A. Legal Requirement

Section 11346.3 of the Government Code requires State agencies to assess the potential for adverse economic impacts on California business enterprises and individuals when proposing to adopt or amend any administrative regulations. The assessment shall include a consideration of the impact of the proposed regulations on California jobs, business expansion, elimination or creation, and the ability of California business to compete.

Also, section 11346.5 of the Government Code requires State agencies to estimate the cost or savings to any state, local agency and school district in accordance with instructions adopted by the Department of Finance. The estimate shall include any non-discretionary cost or savings to local agencies and the cost or savings in federal funding to the state.

B. Effect of Amendments to the Regulations and Test Procedures

1. Cost and Cost-Effectiveness

The proposed amendments to both the SORE and tier 4 off-road CI engine regulations and test procedures, incorporated by reference, would not increase the cost of complying with the current regulations. In fact, the modifications in this proposal are expected to avoid extra cost burdens, mainly by avoiding duplicative emission testing requirements and by standardizing test equipment measurement specifications, calibrations, and instrumentation. The proposed changes to the off-road exhaust emission certification test fuel would not increase the cost of compliance with the current regulations because manufacturers already need to procure certification test fuels in order to conduct certification.

2. Economic Impact on the Economy of the State

The proposed amendments to both the SORE and tier 4 off-road CI engine regulations are not expected to impose a cost burden to engine or equipment manufacturers. As noted in Sections II-IV of this Staff Report, the amendments would not increase the compliance cost burden on the applicable manufacturers. Based on the above assumptions, staff expects the proposed regulations to impose no adverse impact on California competitiveness and employment. In addition, staff expects that the proposed E10 test fuel amendment will not impose any adverse impact on California competitiveness and employment. The following subsections are intended to fulfill ARB's legal requirements related to economic analysis and economic impact for stakeholders affected by these proposed regulations.

a) Businesses Affected

The proposed amendments are not expected to impose any additional cost burden to off-road engine or equipment manufacturers because these amendments, in the aggregate, would reduce manufacturers' certification-related testing and compliance burdens by avoiding duplicate State vs. Federal certification testing and the production of 49-state engine families. In addition, any businesses that buy and sell test equipment, such as analyzers used in emission testing, as well as businesses that perform certification emission tests for applicable engine and equipment manufacturers would not be impacted by the proposed amendments because any required test equipment upgrades have already occurred as a result of complying with current federal requirements. Finally, the proposed amendments to the exhaust emission certification test fuel would not affect any independent emission testing facilities because there is not any expected cost differential between the proposed and existing test fuels. Accordingly, there is not any expectation that the proposed amendments will cause any creation or loss of business and cause any creation or elimination of jobs.

b) Engine Manufacturers

(1) Small Off-Road Engines

There are currently 59 SORE manufacturers that market certified engines in California. None of the manufacturers is located in California although some have small repair and distribution operations in California. Some manufacturers of the evaporative emission components are located in California, but these would not be affected by the proposed amendments because the amendments do not apply to either the evaporative emission regulations or test procedures.

(2) Tier 4 Off-Road Compression-Ignition Engines

On a nationwide basis, there are approximately 600 off-road CI equipment manufacturers, and 50 off-road CI engine manufacturers, based on a U.S. EPA estimate. These manufacturers would not be affected by the proposed amendments because these amendments do not affect the stringency of the current emission standards, but rather would, in the aggregate, reduce manufacturers' certification-related testing and compliance burdens. Thus, there would not be any increases in the cost of compliance for these manufacturers. Businesses that operate or service diesel engines would not be affected by the proposal because the proposal is related to test procedures for demonstrating emission compliance of new engines.

c) Impact on Small Businesses

The concerns of small businesses are the same concerns that exist for large businesses. As discussed above, the proposed amendments are not expected to

impose any additional cost burden. Accordingly, there is not any expectation that the proposed amendments will cause any creation or loss of business and cause any creation or elimination of jobs

d) Potential Impact on Distributors and Dealers

The proposed amendments are not expected to impose any cost impacts on distributors or dealers.

e) Potential Impact on Business Competitiveness

The proposed amendments would have no impact on the ability of California engine and equipment manufacturers to compete with manufacturers of similar products in other states. This is because all manufacturers that produce these engines and equipment for sale in California are subject to the proposed amendments regardless of their location. Furthermore, all of the engine manufacturers, and most of the equipment manufacturers, are located outside of California.

f) Potential Impact on Employment

The proposed amendments to both the SORE and tier 4 off-road CI engine regulations, as well as the proposed E10 test fuel amendments, are not expected to cause a reduction in California employment because, as previously noted, there is no expected economic impact of the proposal.

VII. ALTERNATIVES CONSIDERED

A. Alternatives Considered to the Proposed Amendments

Staff evaluated the four alternatives listed below as substitutes to the amendments that are proposed for both the SORE and tier 4 off-road CI engine regulations, as well as the "No Action" alternative for the proposed E10 test fuel amendment. These included:

- Take "No Action"
- Harmonize Completely with the Federal Regulations
- Prospective Incorporation of Federal Regulations by Reference
- Harmonize Through Executive Officer Discretion

These alternatives are discussed below.

No Action

The first alternative evaluated was to take no action to modify either of the existing California SORE or tier 4 off-road CI engine regulations and test procedures. The existing regulations and test procedures for both categories now differ significantly in several key areas from the current federal requirements for nonroad engines. Consequently, many of the engine and equipment manufacturers would be required to perform two different exhaust emission tests during the certification process or perform extra tests to prove the equivalency of the emission tests. Such separate testing is expensive and would unnecessarily increase the costs of compliance to the manufacturer, which would be passed down to the consumer, without any resulting emission benefit. Another consideration, with respect to the SORE test procedures, is that test equipment manufacturers have indicated their intent to phase-out support of test equipment specified by the current test procedures. Thus, continued use of these test procedures would become impractical due to the eventual breakdown and unavailability of the test equipment. Additionally, with respect to the tier 4 CI engine regulations, the federal provisions contain additional compliance flexibility options lacking in the California regulation (i.e., a new HC+NOx standard and longer FEL durations) that could result in certain product lines no longer being made available in California. With regard to the proposed E10 test fuel amendment, a "No Action" alternative is not practical because it would create an inconsistency with the on-road motor vehicle test fuel that is scheduled to be proposed in January 2012, as well as maintain the current inconsistency between the off-road categories' test fuel and commercially available fuel. Therefore, staff rejected this alternative as both impractical and substantially more costly.

Harmonize Completely with U.S. EPA's Regulations

Another alternative would be to adopt completely the U.S. EPA's Parts 1054 and 1065, in the case of the SORE category, and Parts 1039, 1065, and 1068, in the case of the tier 4 off-road CI engine category.

A complete adoption of the federal regulations and test procedures differs from the proposal in that it creates a complete alignment while the proposal creates a less-than-complete alignment in order to preserve current California-specific provisions. This less-than-complete alignment is necessary because California has unique needs in controlling the off-road categories' emissions and has established provisions in response to those needs that are not reflected in the federal provisions. For example, the tier 4 off-road CI engine regulations differ from federal provisions in the flexibility engine Executive Order and labeling requirements, engine replacement reporting and labeling requirements, and in-use compliance and engine recall programs, because these California-specific provisions better support California's emission reduction objectives. In addition, California's current SORE regulations and test procedures include provisions for two-stroke PM emissions and more representative supplemental engine cooling. Thus, a complete adoption of the federal regulations and test

procedures would eliminate these provisions and likely compromise the level of stringency of the emission standards that is required by California in order to achieve the expected level of future emission reductions. Accordingly, staff rejected this alternative.

Prospective Incorporation of Federal Regulations by Reference

This alternative would allow ARB to dynamically incorporate federal regulations by reference, in part or as a whole, into California law without a date of publication. The benefits of such an alternative would be to ensure full regulatory harmonization with U.S. EPA revisions now and in the future, and to minimize the staff resources required in developing an alignment rulemaking in response to any future federal regulatory amendments. The downside of this alternative is that it would limit ARB's ability to independently implement or enforce its regulations should U.S. EPA make a change that is not in California's best interests. Also, title 1, CCR, section 20(c)(3), generally prohibits the incorporation by reference of material into California regulations without a date of publication or issuance. Therefore, staff rejected this alternative.

Harmonization Through Executive Officer Discretion

This alternative would allow ARB's Executive Officer to approve requests, from off-road engine/equipment manufacturers and on a case-by-case basis, for permission to comply with specific federal provisions instead of provisions required by California regulations. This would give ARB the ability to harmonize with any federal requirements with which it agreed, providing timely relief to the off-road industry when necessary. Any changes allowed by the Executive Officer would then be formally codified into the applicable regulations at a future, more convenient date. While this option does have merits, such as the ability to address compliance issues more efficiently, less Board time devoted to harmonization issues, and more staff time and resources to devote to other projects, it is generally necessary that such changes undergo a public process with the opportunity for affected stakeholders to provide comment, and the Board to review and render judgment. Therefore, staff rejected this alternative.

B. Issues of Controversy

Industry initiated the request for ARB to harmonize its regulations and test procedures with the applicable federal provisions. During the development of the proposed amendments, staff worked collaboratively with manufacturers in addressing their request, while always emphasizing that harmonizing completely in every instance was not possible because of the need to preserve the integrity of existing California-specific measures. Manufacturers both recognized and understood this condition. Accordingly, staff is not proposing complete harmonization because staff believes that the proposed amendments to the SORE and tier 4 off-road CI engine regulations and test procedures preserve the expected emission benefits and, thereby, the best interests of California.

C. Summary of Alternatives Evaluated

After carefully considering the remaining issues and the suggested alternatives, staff believes its proposal is the best option.

D. Conclusions and Recommendations

In developing the proposed regulations, staff's goal has been to preserve the current stringency of the emission standards and effectiveness of the associated test procedures in order to continue achieving the greatest possible emissions reductions in a technologically feasible and cost-effective manner. Meeting the requirements of the current emission standards continues to be achievable using existing technologies and manufacturing processes. The proposed amendments are not expected to add to previously estimated costs, and may reduce compliance costs associated with the existing provisions.

No alternatives considered would be more effective in achieving the purpose for which the regulations are proposed or would be as effective as or less burdensome to affected private persons than the proposed regulations.

Staff recommends that the Board adopt this proposal.

VIII. REFERENCES

ARB 1999. California Air Resources Board, Public Hearing to Consider Amendments to Off Road Compression Ignition Engine Regulations: 2000 and Later Emission Standards, Compliance Requirements and Test Procedures (Staff Report). December 10, 1999.
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ARB 2004. California Air Resources Board, Public Hearing to Consider Amendments to the California Off-Road Emissions Regulation for Compression-Ignition Engines and Equipment (Staff Report). October 22, 2004.
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ARB 2007. California Air Resources Board. Staff Report: Initial Statement of Reasons; Proposed 2007 Amendments to Phase 3 California Reformulated Gasoline Regulations; Appendix C: Emissions from Off-Road Applications: Discussion of Impacts from Permeation Due to Ethanol Blending. Sacramento: April 27, 2007.
http://www.arb.ca.gov/regact/2007/carfg07/appc.pdf

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http://www.arb.ca.gov/regact/2008/sore2008/soreisor.pdf

MAC 2010-002. California Air Resources Board, Mobile Source Operations Division, Manufacturers Advisory Correspondence 2010-002. December 21, 2010.
http://www.arb.ca.gov/msprog/macs/mac1002/mac1002.pdf

SwRI 2010. Southwest Research Institute. Ethanol Evaluation On Nonroad Engines (Final report). Project Nos. 14075.07, 14936.07, and 15777.07. December 2010.

U.S. EPA 2004. United States Environmental Protection Agency, Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel; Final Rule. 69 Federal Register 38958-39273. June 29, 2004.
http://edocket.access.gpo.gov/2004/pdf/04-11293.pdf

U.S. EPA 2007. United States Environmental Protection Agency. Control of Emissions from Nonroad Spark-Ignition Engines and Equipment; Proposed Rule, 72 Federal Register 28097-28393, May 18, 2007.
http://www.epa.gov/otaq/regs/nonroad/marinesi-equipld/420f07032.pdf

APPENDIX A

PROPOSED REGULATION ORDER

Small Off-Road Engines

Title 13 California Code of Regulations

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** Amendments to Existing Regulations **

1. Amend section 2403, title 13, California Code of Regulations, to read as follows:

(Note: [Section 2403]. The proposed amendments are shown in underline to indicate additions and strikeout to indicate deletions from the existing regulatory text.)

§ 2403. Exhaust Emission Standards and Test Procedures–Small Off-Road Engines

* * * * *

(b)(2)(B) The following voluntary exhaust emission standards, which apply to all certification and compliance testing. Blue Sky Series engines shall not be included in the averaging, banking, and trading program. Zero-emission small off-road engines may certify to the Blue Sky Series emission standards. Manufacturers of zero-emission small off-road equipment are not required to perform emissions testing, but must file an application of certification and comply with the administrative requirements outlined as applicable, in the "California Exhaust Emission Standards and Test Procedures for 2005-2012 ~~and Later~~ Small Off-Road Engines," adopted July 26, 2004, and as last amended ~~February 24, 2010~~ <insert date of amendment>; or, the "California Exhaust Emission Standards and Test Procedures for 2013 and Later Small Off-Road Engines," adopted <insert date of adoption>, to certify their equipment for sale in California.

* * * * *

(d) The test procedures for determining compliance with the standards for exhaust emissions from new small off-road engines are set forth as applicable, in the "California Exhaust Emission Standards and Test Procedures for 1995-2004 Small Off-Road Engines," adopted March 20, 1992, and last amended July 26, 2004; ~~or~~the "California Exhaust Emission Standards and Test Procedures for 2005-2012 ~~and Later~~ Small Off-Road Engines," adopted July 26, 2004, and last amended ~~February 24, 2010~~<insert date of amendment>; or, the "California Exhaust Emission Standards and Test Procedures for 2013 and Later Small Off-Road Engines," adopted <insert date of adoption>, which ~~is~~are incorporated herein by reference.

NOTE: Authority cited: sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.

Reference: sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

2. Amend section 2407, title 13, California Code of Regulations, to read as follows:

(Note: [Section 2407]. The proposed amendments are shown in underline to indicate additions and strikeout to indicate deletions from the existing regulatory text.)

§ 2407. New Engine Compliance and Production Line Testing–New Small Off-Road Engine Selection, Evaluation, and Enforcement Action.

* * * * *

(a)(7) Engines randomly chosen from the selected engine family or subgroup. Each chosen engine must be tested as applicable, according to the "California Exhaust Emission Standards and Test Procedures for 1995-2004 Small Off-Road Engines" ("Emission Standards and Test Procedures"), adopted March 20~~,~~ 1992, and last amended July 26, 2004~~;~~ ~~or~~ the "California Exhaust Emission Standards and Test Procedures for 2005-2012 ~~and Later~~ Small Off-Road Engines," adopted July 26, 2004, and last amended <insert date of amendment>; or, the "California Exhaust Emission Standards and Test Procedures for 2013 and Later Small Off-Road Engines," adopted <insert date of adoption> ~~as applicable,~~ to determine its emissions. Unique specialty hardware and personnel normally necessary to prepare the engine for performance of the test as set forth in the Procedures must be supplied by the engine manufacturer within seven days after the request for such specialty hardware or personnel. Failure to supply this unique specialty hardware or personnel may not be used by the engine manufacturer as a cause for invalidation of the subsequent tests.

* * * * *

NOTE: Authority cited: sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.
Reference: sections 43013, 43017, 43018, 43101, 43102, 43104, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

APPENDIX B

PROPOSED REGULATION ORDER

Tier 4 Off-Road Compression-Ignition Engines

Title 13 California Code of Regulations

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Proposed Regulation Order

Note: This document is printed in a style to indicate changes from the existing provisions. All existing language is indicated by plain type. All additions to language are indicated by underlined text. All deletions to language are indicated by ~~strikeout~~. Only those portions containing the suggested modifications from the existing provisions are included. All other portions remain unchanged and are indicated by the symbol "* * * * *" for reference.

Amend Article 4, Chapter 9, Division 3, Title 13, California Code of Regulations (CCR), to read as follows:

Chapter 9. Off-Road Vehicles and Engines Pollution Control Devices

Article 4. Off-Road Compression-Ignition Engines and Equipment

§ 2420. Applicability.

* * * * *

§ 2421. Definitions.

(a) The definitions in Section 1900(b), Chapter 3, Title 13 of the California Code of Regulations, shall apply with the following additions:

(1) "1996-1999 Heavy-Duty Test Procedures" means the document ~~en~~titled "California Exhaust Emission Standards and Test Procedures for New 1996-1999 Heavy-Duty Off-Road Compression-Ignition Engines, Part I-A," which includes the standards and test procedures applicable to 1996-1999 heavy-duty off-road compression-ignition engines, as adopted May 12, 1993, and as amended January 28, 2000. This document is incorporated by reference herein.

(2) "1996-1999 Smoke Test Procedures" means the document ~~en~~titled "California Smoke Test Procedures for New 1996-1999 Off-Road Compression-Ignition Engines, Part III," which includes the standards and test procedures applicable to 1996-1999 heavy-duty off-road compression-ignition engines, as adopted May 12, 1993, and as amended January 28, 2000. This document is incorporated by reference herein.

(3) "2000 Plus Limited Test Procedures" means the document titled "California Exhaust Emission Standards and Test Procedures for New 2000 and Later Tier 1, Tier 2, and Tier 3 Off-Road Compression-Ignition Engines, Part I-B," which includes the standards and test procedures applicable to 2000 and later model year off-road compression-ignition engines, as adopted January 28, 2000, and as amended October 20, 2005. This document is incorporated by reference herein.

(4)(A) "2008-2010 ~~and Later~~ Test Procedures" means the document titled "California Exhaust Emission Standards and Test Procedures for New 2008-2010 ~~and Later~~ Tier 4 Off-Road Compression-Ignition Engines," which includes the standards and test procedures applicable to 2008-2010 ~~and later~~ model year off-road compression-ignition engines, as adopted October 20, 2005, and as amended (insert date of adoption). This document is incorporated by reference herein.

(B) "2011 and Later Test Procedures" means the collection of documents titled "California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, Parts I-D, I-E, and I-F," which include, respectively, the emission standards, general compliance provisions, and engine testing procedures applicable to 2011 model year and later off-road compression engines, as adopted (insert date of adoption). These documents are incorporated by reference herein.

(5) "Adjustable parameter" means any device, system, or element of design that is capable of being adjusted manually (even if difficult to access), and which may affect emissions or engine performance during emission testing or normal in-use operation. This includes, but is not limited to, parameters related to injection timing and fueling rate. A parameter that is difficult to access may be excluded upon request to the

Executive Officer if the parameter cannot be adjusted to a degree that affects emissions without significantly degrading engine performance, or if demonstrated that it will not be adjusted in a way that affects emissions during in-use operation.

(6) "Alternate fuel" means any fuel that will reduce non-methane hydrocarbons (on a reactivity-adjusted basis), NOx, CO, and the potential risk associated with toxic air contaminants as compared to gasoline or diesel fuel and would not result in increased deterioration of the engine. Alternate fuels include, but are not limited to, methanol, ethanol, liquefied petroleum gas, compressed natural gas, and electricity.

(7) "ARB Enforcement Officer" means any officer or employee of the Air Resources Board so designated in writing by the Executive Officer (or by his designee).

(8) "Assembly-line tests" are those tests or inspections that are performed on or at the end of the assembly line.

(9) "Auxiliary emission-control device" means any element of design that senses temperature, motive speed, engine speed, transmission gear, or any other parameter for the purpose of activating, modulating, delaying, or deactivating the operation of any part of the emission-control system.

(10) "Blue Sky Series engine" means an off-road compression-ignition engine meeting the requirements of Section 2423(b)(4).

(11) "Calendar year" is defined as the twelve-month period commencing on January 1 through December 31.

(12) "Certification" means, with respect to new off-road compression-ignition engines, the obtaining of an Executive Order for an engine family complying with the off-road compression-ignition engine emission standards and requirements specified in this article.

(13) "Certified configuration" or "certified emissions configuration" means the assembled state of an engine that is equipped with a complete set of emission-related components and systems that are equivalent from an emissions standpoint (i.e., tolerances, calibrations, and specifications) to those components and systems that (A) were originally installed on the engine when it was issued an Executive Order, (B) have been approved by the engine manufacturer to supersede any of the original emission-related components and systems for that engine, or (C) are direct replacement parts equaling or exceeding the emissions-related performance of the original or superseded components and systems.

(14) "Compression-ignition engine" means a type of engine with operating characteristics significantly similar to the theoretical Diesel combustion cycle. The non-use of a throttle to regulate intake flow for controlling power during normal operation is indicative of a compression-ignition engine. A compression-ignition engine

may be petroleum-fueled (i.e., diesel-fueled) or alternate-fueled. All engines and equipment that fall within the scope of the preemption of Section 209(e)(1) of the Federal Clean Air Act (42 U.S.C. 7543(e)(1)) and as defined by regulation of the Environmental Protection Agency, are specifically not included within this category.

(15) "Constant-speed engine" means

(A) for engines subject to the 2000 and Later Plus Limited Test Procedures, an off-road compression-ignition engine that is governed to operate only at rated speed, or

(B) for engines subject to the 2008-2010 ~~and Later~~ Test Procedures, an off-road compression-ignition engine certified to operate only at constant speed., where ~~C~~constant-speed operation means engine operation with a governor that controls the operator input to maintain an engine at a reference speed, even under changing load. For example, an isochronous governor changes reference speed temporarily during a load change, then returns the engine to its original reference speed after the engine stabilizes. Isochronous governors typically allow speed changes up to 1.0 %. Another example is a speed-droop governor, which has a fixed reference speed at zero load and allows the reference speed to decrease as load increases. With speed-droop governors, speed typically decreases (3 to 10) % below the reference speed at zero load, such that the minimum reference speed occurs near the engine's point of maximum power, or

(C) for engines subject to the 2011 and Later Test Procedures, and off-road compression-ignition engine certified to operate only at constant speed, where constant-speed operation means engine operation with a governor that automatically controls the operator demand to maintain engine speed, even under changing load. Governors do not always maintain speed exactly constant. Typically speed can decrease (0.1 to 10) % below the speed at zero load, such that the minimum speed occurs near the engine's point of maximum power.

(16) "Crankcase emissions" means airborne substances emitted into the atmosphere from any portion of the engine crankcase ventilation or lubrication system.

(17) "Compliance testing" means ARB directed emissions tests and inspections of a reasonable number of production engines and/or vehicles that are offered for sale, or manufactured for sale, in California in order to verify compliance with the applicable certification emission standards. The emissions tests may be conducted at ARB or contracted out facilities or at the manufacturer's facility. The testing will be done at the expense of the manufacturer.

(18) "Confirmatory testing" means ARB directed emissions tests and inspections of the test engines and/or test vehicles used by the manufacturer to obtain test data for submittal with the certification application. The emissions tests may be conducted at

ARB or contracted out facilities or at the manufacturer's facility. The testing will be done at the expense of the manufacturer.

(19) "Date of manufacture" or "Build date" means one of the following:

(A) For engines, the date on which the crankshaft is installed in an engine block, with the following exceptions:

1. Reserved.

2. Manufacturers may assign a date of manufacture at a point in the assembly process later than the date otherwise specified under this definition. For example, a manufacturer may use the build date printed on the label or stamped on the engine as the date of manufacture.

(B) For equipment, the date on which the engine is installed, unless otherwise specified in this Article 4. Manufacturers may alternatively assign a date of manufacture later in the assembly process.

(~~19~~20) "Dealer" means that person or entity engaged in the selling of new off-road compression-ignition engines, vehicles or equipment to ultimate purchasers.

(~~20~~21) "Deterioration factor" means the relationship between emissions at the end of useful life and emissions at the low-hour test point, expressed in one of the following ways, whichever is applicable: (A) For multiplicative deterioration factors, the ratio of emissions at the end of useful life to emissions at the low-hour test point; (B) For additive deterioration factors, the difference between emissions at the end of useful life and emissions at the low-hour test point.

(~~21~~22) "Diesel cycle engine" means a type of engine with operating characteristics significantly similar to the theoretical diesel combustion cycle. The primary means of controlling power output in a diesel cycle engine is by limiting the amount of fuel that is injected into the combustion chambers of the engine. A diesel cycle engine may be petroleum-fueled (i.e., diesel-fueled) or alternate-fueled.

(~~22~~23) "Emission control system" includes any component, group of components, or engine modification that controls or causes the reduction of substances emitted from an engine.

(~~23~~24) "End of assembly line" is defined as that place where the final inspection test or quality-audit test is performed.

(~~24~~25) "Engine manufacturer" or "manufacturer" means any person who is engaged in the manufacturing or assembling of new off-road engines or the importing of new off-road engines for resale and who has been granted certification, or any person

who acts for and is under the control of a manufacturer in connection with the distribution of new off-road engines. "Engine manufacturer" or "manufacturer" does not include a dealer who receives new off-road engines for sale in commerce.

(~~25~~26) "Exhaust emissions" means substances emitted into the atmosphere from any opening downstream from the exhaust port of an off-highway engine.

(~~26~~27) "Family emission limit" (FEL) means an emission level that is declared by the manufacturer to serve in lieu of an emission standard for certification purposes and for the averaging, banking, and trading program, as defined in Title 13, California Code of Regulations, Section 2423. A FEL must be expressed to the same number of decimal places as the applicable emission standard.

(~~27~~28) "Final calendar quarter production" is defined as the calendar quarter in which the production of an engine family ends.

(~~28~~29) "First calendar quarter production" is defined as the calendar quarter in which the production of an engine family begins.

(~~29~~30) "Fuel system" means the combination of any of the following components: fuel tank, fuel pump, fuel lines, oil injection metering system, carburetor or fuel injection components, or all fuel system vents.

(~~30~~31) "Gross engine malfunction" is defined as one yielding an emission value greater than the sum of the mean plus three (3) times the standard deviation. This definition shall apply only for determination of control limits.

(~~31~~32) "Heavy-duty off-road compression-ignition engines" or "engines" are identified as: 1996 through 1999 model year diesel or alternate fuel powered diesel cycle internal combustion engines 175 horsepower and greater, operated on or in any device by which any person or property may be propelled, moved or drawn upon a highway, but are primarily used off a highway. The engines are designed for powering construction, farm, mining, forestry and industrial implements and equipment. They are designed to be used in, but are not limited to use in, the following applications: agricultural tractors, backhoes, excavators, dozers, log skidders, trenchers, motor graders, portable generators and compressors and other miscellaneous applications.

Specifically excluded from this category are: (A) engines operated on or in any device used exclusively upon stationary rails or tracks; (B) marine diesel engines; (C) internal combustion engines attached to a foundation at a location; (D) transportable engines subject to District permitting rules which have been operated at a location for a period of one year or more on January 1, 1997; and (E) stationary or transportable gas turbines for power generation.

(~~32~~33) "Identification number" means a specification (for example, model, number/serial number combination) that allows a particular off-road compression-ignition to be distinguished from other similar engines.

(~~33~~34) "Marine diesel engine" means a compression-ignition engine that is installed or intended to be installed on a vessel. There are two types of Marine Diesel Engines: (A) Propulsion marine compression-ignition engines, which are those that move or are intended to move a vessel through water or direct the movement of a vessel, and (B) Auxiliary marine diesel engines, which are integral to the vessel, but which do not propel the vessel. This definition includes portable auxiliary marine engines or generators only if their fueling, cooling, or exhaust systems are an integral part of the vessel.

(~~34~~35) "Maximum Engine Power" means the maximum brake power point on the nominal power curve for a specific engine configuration, rounded to the nearest whole kilowatt. The "nominal power curve" of an engine configuration means the relationship between maximum available engine brake power and engine speed for a specific engine configuration, as determined using the mapping procedures specified in Part 1065 of the 2008-2010 ~~and Later~~ Test Procedures or Part I-F of the 2011 and Later Test Procedures as applicable, based on the manufacturer's design and production specifications for that engine. This relationship may also be expressed by a torque curve that relates maximum available engine torque with engine speed. The nominal power curve shall be within the normal production variability of actual power curves for production engines of the same engine configuration. This definition of Maximum Engine Power shall be applicable for all references to a specific power value or range of power values with respect to engines subject to the 2008-2010 or 2011 and Later Test Procedures as applicable, except as otherwise noted or permitted by the Executive Officer. Maximum Engine Power shall be used as the basis for categorizing engine families into appropriate Tier 4 power categories.

(~~35~~36) "Maximum Rated Power" means the maximum brake kilowatt output of an engine at rated speed as stated by the manufacturer in the manufacturer's sales and service literature and in the application for certification. Maximum Rated Power shall be used as the basis for categorizing engine families into appropriate Tier 1, Tier 2, and Tier 3 power categories, except as otherwise noted or permitted by the Executive Officer.

(~~36~~37) "Maximum Test Speed" has the same meaning as defined in Part 1065.1001 of the 2008-2010 and 2011 and Later Test Procedures.

(~~37~~38) "Model year" means the manufacturer's annual production period which includes January 1 of a calendar year or, if the manufacturer has no annual production period, the calendar year. Other examples for the determination of model year are identified in §1039.801 of the 2008-2010 and the 2011 and Later Test Procedures as applicable.

(~~38~~39) "Off-road compression-ignition engine":

(A) Except as specified in paragraph (B) of this definition, an off-road compression-ignition engine is any internal combustion engine:

1. in or on a piece of equipment that is self-propelled or serves as a dual purpose by both propelling itself and performing another function and is primarily used off the highways (such as garden tractors, off-highway mobile cranes and bulldozers); or
2. in or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers); or
3. that, by itself or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to wheels, skids, carrying handles, dolly, trailer, or platform.

(B) An internal combustion engine is not an off-road compression-ignition engine if:

1. the engine is used to propel a vehicle subject to the emission standards contained in Title 13, California Code of Regulations, Sections 1950 - 1978, or a vehicle used solely for competition, or is subject to standards promulgated under Section 202 of the federal Clean Air Act (42 U.S.C. 7521); or
2. the engine is regulated by a federal New Source Performance Standard promulgated under Section 111 of the federal Clean Air Act (42 U.S.C. 7511); or
3. the engine otherwise included in paragraph (A)(3.) of this definition remains or will remain at a location for more than 12 consecutive months or a shorter time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine (or engines) that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive period. An engine located at a seasonal source is an engine that remains at a seasonal source during the full operating period of the seasonal source. A seasonal source is a stationary source that remains in a single location on a permanent basis (i.e., at least two years) and that operates at a single location approximately three months (or more) each year. This paragraph does not apply to an engine after the engine is removed from the location.

(~~39~~40) "Off-road vehicle" or "Off-road equipment" means a vehicle or equipment that is powered by an off-road compression-ignition engine.

(~~40~~41) "Off-road vehicle manufacturer" or "Off-road equipment manufacturer" means any person engaging in the manufacturing or assembling of new off-road vehicles or equipment, or importing of new off-road vehicles or equipment for resale, or acting for and under the control of any person in connection with distributing new off-road vehicles and equipment. An off-road vehicle manufacturer or off-road equipment manufacturer does not include a dealer, nor any person engaging in the manufacturing or assembling of new off-road engines or equipment who does not install an engine as part of that manufacturing or assembling process. All off-road vehicle or equipment manufacturing entities that are under the control of the same person are considered to be a single off-road vehicle manufacturer or off-road equipment manufacturer.

(~~41~~42) "Opacity" means the fraction of a beam of light, expressed in percent, which fails to penetrate a plume of smoke.

(~~42~~43) "Otto cycle engine" means a type of engine with operating characteristics significantly similar to the theoretical Otto combustion cycle. The primary means of controlling power output in an Otto cycle engine is by limiting the amount of air and fuel that can enter the combustion chambers of the engine. Gasoline-fueled engines are Otto cycle engines.

(~~43~~44) "PM and Test Cycle Limited Procedures" means the document titled "California Exhaust Emission Standards and Test Procedures for New 1996 and Later Tier 1, Tier 2, and Tier 3 Off-Road Compression-Ignition Engines, Part II," which includes the standards and test procedures applicable for 1996 and later heavy-duty off-road compression-ignition engines, as adopted May 12, 1993, and as amended October 20, 2005. This document is incorporated by reference herein.

(~~44~~45) "Post-manufacture marinizer" means a person who produces a marine compression-ignition engine by substantially modifying a certified or uncertified complete or partially complete engine, and is not controlled by the manufacturer of the base engine or by an entity that also controls the manufacturer of the base engine. For the purpose of this definition, "substantially modify" means changing an engine in a way that could change engine emission characteristics.

(~~45~~46) "Power category" means a specific range of maximum power that defines the applicability of standards. For example, references to the 56-130 kW power category and $56 \leq kW < 130$ include all engines with maximum power at or above 56 kW but below 130 kW. Also references to 56-560 kW power categories or $56 \leq kW \leq 560$ include all engines with maximum power at or above 56 kW, but at or below 560 kW, even though these engines span multiple power categories. Note that in

some cases, FEL caps are based on a subset of a power category. The Tier 4 applicable power categories are defined as follows:

(A) Engines with maximum engine power below 19 kW.
(B) Engines with maximum engine power at or above 19 kW but below 56 kW.
(C) Engines with maximum engine power at or above 56 kW but below 130 kW.
(D) Engines with maximum engine power at or above 130 kW but at or below 560 kW.
(E) Engines with maximum engine power above 560 kW.

(~~46~~47) "Propulsion marine compression-ignition engine" means a marine compression-ignition engine that is intended to move a vessel through water or direct the movement of a vessel.

(~~47~~48) "Quality-audit test" is defined as the test performed on a sample of production engines produced for sale in California.

(~~48~~49) "Rated speed" is the maximum full load governed speed for governed engines and the speed of maximum horsepower for ungoverned engines.

(~~49~~50) "Representative engine sample" means that the sample is typical of the engine family or engine family group as a whole (as defined in applicable test procedures). Except as provided in Section 2427, a representative sample would not include a low-volume subgroup of the engine family or engine family group.

(~~50~~51) "Scheduled maintenance" means any adjustment, repair, removal, disassembly, cleaning, or replacement of components or systems required by the manufacturer that is performed on a periodic basis to prevent part failure or equipment or engine malfunction, or anticipated as necessary to correct an overt indication of malfunction or failure for which periodic maintenance is not appropriate.

(~~51~~52) "Small off-road engine" has the meaning specified in Title 13, California Code of Regulations, Section 2401.

(~~52~~53) "Small-volume engine manufacturer" means a small business engine manufacturer that had engine families certified to meet the requirements of 40 CFR part 89 before 2003, had annual U.S.-directed production of no more than 2,500 units in 2002 and all earlier calendar years, and has 1000 or fewer employees. For manufacturers owned by a parent company, the production limit applies to the production of the parent company and all its subsidiaries and the employee limit applies to the total number of employees of the parent company and all its subsidiaries.

(~~53~~54) "Tier 1 engine" means an engine subject to the Tier 1 emission standards listed in Section 2423(b)(1)(A) of this article.

(~~54~~55) "Tier 2 engine" means an engine subject to the Tier 2 emission standards listed in Section 2423(b)(1)(A) of this article.

(~~55~~56) "Tier 3 engine" means an engine subject to the Tier 3 emission standards listed in Section 2423(b)(1)(A) of this article.

(~~56~~57) "Tier 4 engine" means an engine subject to the Tier 4 emission standards listed in Section 2423(b)(1)(B) of this article.

(~~57~~58) "Ultimate purchaser" means the first person who in good faith purchases a new engine or equipment for purposes other than resale.

(~~58~~59) "Unscheduled maintenance" means any inspection, adjustment, repair, removal, disassembly, cleaning, or replacement of components or systems that is performed to correct or diagnose a part failure which was not anticipated.

(~~59~~60) "Useful life" means:

(A) For all engines rated under 19 kilowatts, and for constant-speed engines rated under 37 kilowatts with rated speeds greater than or equal to 3,000 revolutions per minute, a period of use of five years or 3,000 hours of operation, whichever first occurs.
(B) For all other engines rated at or above 19 kilowatts and under 37 kilowatts, a period of use of seven years or 5,000 hours of operation, whichever first occurs.
(C) For all engines rated at or above 37 kilowatts, a period of use of ten years or 8,000 hours, whichever first occurs.

(~~60~~61) "Vessel" has the meaning specified in Section 9840 of the California Vehicle Code.

(~~61~~62) "Warrantable condition" means any condition of an engine that triggers the responsibility of the manufacturer to take corrective action pursuant to Section 2425.

(~~62~~63) "Warranted part" means any emissions-related part installed on an engine by the equipment manufacturer, or installed in a warranty repair, which is listed on the warranty parts list.

(~~63~~64) "Warranty period" means the period of time, either in years or hours of operation, that the engine or part is covered by the warranty provisions.

(~~64~~65) "Warranty station" means a service facility authorized by the equipment or engine manufacturer to perform warranty repairs. This shall include all manufacturer distribution centers that are franchised to service the subject equipment or engines.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

§ 2423. Exhaust Emission Standards and Test Procedures – Off-Road Compression-Ignition Engines.

(a) This section shall be applicable to new heavy-duty off-road compression-ignition engines, produced on or after January 1, 1996, and all other new 2000 and later model year off-road compression-ignition engines. For the purposes of this section, these engines shall be called "compression-ignition engines."

(b)(1)(A) Exhaust emissions from new off-road compression-ignition engines, as sold in this state and as appropriate based on model year and maximum rated power, shall not exceed the levels contained in Table 1a with respect to steady-state testing. Table 1a follows:

Table 1a. – Tier 1, Tier 2, and Tier 3 Exhaust Emission Standards
(grams per kilowatt-hour)

Maximum Rated Power (kW)[1]	Tier	Model Year	NO_x[2]	HC[3]	NMHC+ NO_x[4]	CO[5]	PM[6]
kW<8	Tier 1	2000-2004	—	—	10.5	8.0	1.0
	Tier 2	2005-2007[7]	—	—	7.5	8.0	0.80
8≤kW<19	Tier 1	2000-2004	—	—	9.5	6.6	0.80
	Tier 2	2005-2007[7]	—	—	7.5	6.6	0.80
19≤kW<37	Tier 1	2000-2003	—	—	9.5	5.5	0.80
	Tier 2	2004-2007[7]	—	—	7.5	5.5	0.60
37≤kW<56	Tier 1	2000-2003	9.2	—	—	—	—
	Tier 2	2004-2007	—	—	7.5	5.0	0.40
	Tier 3[8]	2008-2011	—	—	4.7	5.0	0.40
56≤kW<75	Tier 1	2000-2003	9.2	—	—	—	—
	Tier 2	2004-2007	—	—	7.5	5.0	0.40
	Tier 3	2008-2011	—	—	4.7	5.0	0.40
75≤kW<130	Tier 1	2000-2002	9.2	—	—	—	—
	Tier 2	2003-2006	—	—	6.6	5.0	0.30
	Tier 3	2007-2011	—	—	4.0	5.0	0.30
130≤kW<225	Tier 1	1996-2002	9.2	1.3	—	11.4	0.54
	Tier 2	2003-2005	—	—	6.6	3.5	0.20
	Tier 3	2006-2010	—	—	4.0	3.5	0.20
225≤kW<450	Tier 1	1996-2000	9.2	1.3	—	11.4	0.54
	Tier 2	2001-2005	—	—	6.4	3.5	0.20
	Tier 3	2006-2010	—	—	4.0	3.5	0.20
450≤kW≤560	Tier 1	1996-2001	9.2	1.3	—	11.4	0.54
	Tier 2	2002-2005	—	—	6.4	3.5	0.20
	Tier 3	2006-2010	—	—	4.0	3.5	0.20
kW>560	Tier 1	2000-2005	9.2	1.3	—	11.4	0.54
	Tier 2	2006-2010	—	—	6.4	3.5	0.20

1. kW means kilowatts.
2. NO_x means Oxides of Nitrogen.
3. HC means Hydrocarbons.
4. NMHC+NO_x means Non-Methane Hydrocarbons plus Oxides of Nitrogen.
5. CO means Carbon Monoxide.
6. PM means Particulate Matter.
7. Tier 2 standards for propulsion marine compression-ignition engines below 37 kW remain in effect beyond the 2007 end date.
8. Manufacturers may optionally certify engine families to the interim Tier 4 standards in Table 1b for this power category through 2012.

(B) Exhaust emissions from new off-road compression-ignition engines, as sold in this state and as appropriate based on model year and maximum engine power, shall not exceed the levels contained in Table 1b, with respect to steady-state testing, transient testing, and, after application of the criteria in Table 1c, not-to-exceed testing,

as applicable. Other compliance options are ~~permissible as~~ provided in the 2008-2010 or 2011 and Later Test Procedures as applicable.

Table 1b. – Tier 4 Exhaust Emission Standards (grams per kilowatt-hour)

MAXIMUM ENGINE POWER	MODEL YEAR	TYPE	PM	NMHC+	NMHC	NOX	CO
			grams per kilowatt-hour				
kW<8[1]	2008 and later	FINAL	0.40[2]	7.5	-	-	8.0
8≤kW<19[1]							6.6
19≤kW<37[1]	2008-2012	INTERIM	0.30	7.5	-	-	5.5
	2013 and later	FINAL	0.03	4.7			
37≤kW<56[3]	2008-2012	INTERIM	0.30	4.7	-	-	5.0
	2013 and later	FINAL	0.03				
56≤kW<75	2012-2014[4]	PHASE-IN	0.02	-	0.19	0.40	5.0
		PHASE-OUT		4.7	-	-	
		or/ ALT NOX		-	0.19	3.4[5]	
		or/ ALT NOX+NMHC[8]		3.5[5]	=	=	
	2015 and later	FINAL		-	0.19	0.40	
75≤kW<130	2012-2014[4]	PHASE-IN	0.02	-	0.19	0.40	5.0
		PHASE-OUT		4.0	-	-	
		or/ ALT NOX		-	0.19	3.4[5]	
		or/ ALT NOX+NMHC[8]		3.5[5]	=	=	
	2015 and later	FINAL		-	0.19	0.40	
130≤kW≤560	2011-2013	PHASE-IN	0.02	-	0.19	0.40	3.5
		PHASE-OUT		4.0	-	-	
		or/ ALT NOX		-	0.19	2.0	
		or/ ALT NOX+NMHC[8]		2.1	=	=	
	2014 and later	FINAL		-	0.19	0.40	
560 kW<GEN[6]≤900 kW	2011-2014	INTERIM	0.10	-	0.40	3.5	3.5
	2015 and later	FINAL	0.03		0.19	0.67	
GEN>900 kW	2011-2014	INTERIM	0.10	-	0.40	0.67	3.5
	2015 and later	FINAL	0.03		0.19		
ELSE[7]>560 kW	2011-2014	INTERIM	0.10	-	0.40	3.5	3.5
	2015 and later	FINAL	0.04		0.19		

Notes:

1 Propulsion marine compression-ignition engines below 37 kW are not subject to Tier 4 standards or requirements. All previously adopted requirements remain applicable for these engines.

2 The Tier 4 PM standard for hand-start, air cooled, direct injection engines below 8 kW is 0.60 g/kW-hr, but is not required until 2010.

3 Engine families in this power category may alternately meet Tier 3 PM standards from 2008-2011 in exchange for introducing final PM standards in 2012.

4 Manufacturers have the option of complying with the Tier 4 standards over a two year period at 50% per year using banked Tier 2 credits or over a three year period at 25% per year without the use of Tier 2 credits. The three year phase-in period is shown. The 2014 model year cannot extend beyond December 30, 2014, when the 3 year phase-in option is used.

5 Manufacturers may comply with the standards during the transitional implementation years using either a phase-in / phase-out approach or by using the Alternate NOx approach. The three year 25% alternate NOx ~~standard~~ and alternate NOx + NMHC standards is~~are~~ shown in the table. The two year 50% ~~phase-in~~ alternate NOx standard would be 2.3 g/kW-hr. The two year 50% alternate NOx + NMHC standard would be 2.4 g/kW-hr.

6 "GEN" refers to generator engines only.

7 "ELSE" refers to all mobile machinery excluding generator engines.

8 An ALT NOx+NMHC standard equal to 0.5 g/kW-hr is available for one additional model year following the last model year of the ALT NOx+NMHC phase-in shown in the table.

Table 1c. – Criteria for Determining NTE Limits[1]

Pollutant	Apply NTE Multiplier of 1.25 when ...	Apply NTE Multiplier of 1.50 when ...
NOx	NOx Standard or FEL ≥ 2.5 g/kW-hr	NOx Standard[2] or FEL< 2.5 g/kW-hr
NMHC	NOx Standard or FEL ≥ 2.5 g/kW-hr	NOx Standard[2] or FEL< 2.5 g/kW-hr
NMHC+NOx	NMHC+NOx Standard or FEL ≥ 2.7 g/kW-hr	NMHC+NOx Standard[2] or FEL< 2.7 g/kW-hr
PM	PM Standard or FEL ≥ 0.07 g/kW-hr	PM[2] Standard or FEL[3]< 0.07 g/kW-hr
CO	Always	Never

Notes:
1 Other provisions described in the 2008-2010 or 2011 and Later Test Procedures may affect the calculation of NTE limits.
2 Engines must be certified to these standards without the use of ABT credits.
3 For engines certified to a PM FEL less than or equal to 0.01 g/kW-hr, the PM NTE limit shall be 0.02 g/kW-hr.

(2) Manufacturers may elect to include engine families in one of two averaging, banking, and trading (ABT) programs, corresponding to the engine family's model year and emissions categorization. The provisions of these separate ABT programs are specified in Part 89, Subpart C of the 2000 Plus Limited Test Procedures and Part 1039, Subpart H of the 2008-2010 or Part I-D of the 2011 and Later Test Procedures as applicable.

(A) For engine families subject to the 2000 Plus Limited Test Procedures, the manufacturer must set a family emission limit (FEL) not to exceed the levels contained in Table 2a. The FEL established by the manufacturer serves as the emission standard for that engine family. Table 2a follows:

Table 2a – Upper Limit for Tier 1, Tier 2, and Tier 3 Family Emission Limits (FEL)
(grams per kilowatt-hour)

Maximum Rated Power (kW)	Tier	Model Year	NO_x	NMHC+NO_x	PM FEL
kW<8	Tier 1	2000-2004		16.0	1.2
	Tier 2	2005-2007		10.5	1.0
8≤kW<19	Tier 1	2000-2004		16.0	1.2
	Tier 2	2005-2007		9.5	0.80
19≤kW<37	Tier 1	2000-2003		16.0	1.2
	Tier 2	2004-2007		9.5	0.80
37≤kW<56	Tier 1	2000-2003	14.6		
	Tier 2	2004-2007		11.5	1.2
	Tier 3[1]	2008-2011		7.5	1.2
56≤kW<75	Tier 1	2000-2003	14.6		
	Tier 2	2004-2007		11.5	1.2
	Tier 3	2008-2011		7.5	1.2
75≤kW<130	Tier 1	2000-2002	14.6		
	Tier 2	2003-2006		11.5	1.2
	Tier 3	2007-2011		6.6	1.2
130≤kW<225	Tier 1	2000-2002	14.6		
	Tier 2	2003-2005		10.5	0.54
	Tier 3	2006-2010		6.6	0.54
225≤kW<450	Tier 1	2000	14.6		
	Tier 2	2001-2005		10.5	0.54
	Tier 3	2006-2010		6.4	0.54
450≤kW≤560	Tier 1	2000-2001	14.6		
	Tier 2	2002-2005		10.5	0.54
	Tier 3	2006-2010		6.4	0.54
kW>560	Tier 1	2000-2005	14.6		
	Tier 2	2006-2010		10.5	0.54

1. Manufacturers may optionally certify engine families to the interim Tier 4 FEL caps in Table 2b for this power category through 2012.

(B) For engine families subject to the 2008-2010 or 2011 and Later Test Procedures, the manufacturer must set a family emission limit (FEL) not to exceed, as applicable, the levels contained in Table 2b. Three distinct FEL types (primary, interim, and alternate) are available conditionally. Primary FEL types are applicable to all power categories indefinitely, whereas interim and alternate FEL types are of variable duration

and may be selectively applied as applicable to total or partial engine family production volumes as described in the 2008-2010 or 2011 and Later Test Procedures. The FEL established by the manufacturer serves as the emission standard for that engine family, and is used for determining NTE limits in conjunction with the criteria in Table 1c. Temporary compliance adjustment factors, as explained in the 2008-2010 and 2011 and Later Test Procedures as applicable, shall be applied by the manufacturer to compensate for the use of transitional alternate FELs (Type ALT 20% in Table 2b) when calculating emission credits. Table 2b follows:

Table 2b – Upper Limit for Tier 4 Family Emission Limits (FELs) and Alternate Allowances
Part 1

MAXIMUM ENGINE POWER	FEL TYPE	MODEL YEAR	PM	NOX	NMHC+ NOX
			grams per kilowatt-hour		
kW<8	Primary	2008 and later	0.80	-	10.5
8≤kW<19	Primary	2008 and later	0.80	-	9.5
19≤kW<37	Interim	2008-2012	0.60	-	9.5
	Primary	2013 and later	0.05	-	7.5
	ALT 20%[1]	2013-2016[3]	0.30	-	7.5
	ALT 5%[2]	2017 and later[3]			
37≤kW<56	Interim	2008-2012[3]	0.40	-	7.5
	Primary	2013 and later[3]	0.05	-	7.5
	ALT 20%	2013-2016[3]	0.30	-	7.5
	ALT 5%	2017 and later[3]			
56≤kW<75	Phase-in	2012-2013/2014[5]	0.04	0.80	-
	Phase-out			-	7.5
	~~Alternate~~ALT NOx Std[4]	2012-2013	0.04	3.0[7]	-
		2012-2014		4.4	
	ALT NOx+NMHC Std[4]	2012-2013/2014[5]	0.04	-	4.7[7]
	Primary	2014/2015[5] and later	0.04	0.80	-
	ALT 20% PM	2012-2015	0.40		-
	ALT 20% NOX	2014~~1~~2-2015[6]		4.4	-
	ALT 20% NOx+NMHC Std	2012-2015[6]	-	-	4.7
	ALT 5%	2016 and later	0.40	4.4	-

Notes:

1 This alternate FEL option is transitional for the four years specified and applies to at most 20% of a manufacturer's U.S. directed population of engine families per year.

2 This alternate FEL option is available indefinitely, but only applies to 5% of a manufacturer's U.S. directed population of engine families per year.

3 These dates correspond to the compliance option of meeting interim standards in 2008; else the primary and alternate FEL caps would begin and/or end one year earlier, and 2008-2011 engines would not be eligible for participation in the Tier 4 ABT program.

4 Two alternate NOx standards and corresponding FEL caps are available for this category with corresponding alternate phase-in options. Two alternate NOx+NMHC standards are also available; the FEL caps are the previously applicable NOx+NMHC standards from Table 1a of this section.

5 The effective date of the primary FEL cap follows the phase-in period and use of banked Tier 2 NOx credits of the selected NOx FEL cap.

6 ~~If interim Tier 4 standards are not met in 2008, the alternate NOx FEL would only be available for 2015~~For manufacturers certifying engines in this power category using a percentage phase-in/phase-out approach instead of the ALT NOx or ALT NOx+NMHC standards in Table 1b of §2423(b)(1)(B), the alternate NOx and NOx+NMHC FEL caps in the table apply only in the 2014-2015 model years if certifying in accordance with the provisions in §1039.102(d)(1) of the 2011 and Later Test Procedures, and only in the 2015 model year if certifying under §1039.102(d)(2) of the 2011 and Later Test Procedures.

7 If neither the alternate phase-in option nor banked Tier 2 credits are used, either NOx standard, or the NOx+NMHC standard, and corresponding FEL may be applied for this category.

Table 2b – Upper Limit for Tier 4 Family Emission Limits (FELs) and Alternate Allowances
Part 2

MAXIMUM ENGINE POWER	FEL TYPE	MODEL YEAR	PM	NOX	NMHC+ NOX
			grams per kilowatt-hour		
75≤kW<130	Phase-in	2012-2013/2014[5]	0.04	0.80	-
	Phase-out			-	6.6
	~~Alternate~~ALT NOx Std[4]	2012-2013		3.0[7]	-
		2012-2014		3.8	-
	ALT NOx+NMHC Std[4]	2012-2013/2014[5]		-	4.0[7]
	Primary	2014/2015[5] and later		0.80	-
	ALT 20% PM	2012-2015	0.30		-
	ALT 20% NOX	20141<u>2</u>-2015[6]		3.8	-
	ALT 20% NOx+NMHC Std[4]	2012-2015[6]	-	-	4.0
	ALT 5%	2016 and later	0.30	3.8	-
130≤kW≤560	Phase-in	2011-2013	0.04	0.80	-
	Phase-out			-	6.6/6.4[8]
	~~Alternate~~ALT NOx Std	2011-2013		2.7	-
	ALT NOx+NMHC Std	2011-2013		-	4.0
	Primary	2014 and later		0.80	-
	ALT 20% PM	2011-2014	0.20		-
	ALT 20% NOX	2011-2014[9]		3.8	-
	ALT 20% NOx+NMHC Std	2011-2014[9]	-	-	4.0
	ALT 5%	2015 and later	0.20	3.8	-
GEN>560kW	Interim	2011-2014	0.20	6.2	-
	Primary	2015 and later	0.05	1.07	-
	ALT 20%	2015-2018	0.10	3.5	-
	ALT 5%	2019 and later			-
ELSE>560kW	Interim	2011-2014	0.20	6.2	-
	Primary	2015 and later	0.07		-
	ALT 20%	2015-2018	0.10		-
	ALT 5%	2019 and later			-

Notes:

4 Two alternate NOx standards and corresponding FEL caps are available for this category with corresponding alternate phase-in options. Two alternate NOx+NMHC standards are also available; the FEL caps are the previously applicable NOx+NMHC standards from Table 1a of this section.

5 The effective date of the primary FEL cap follows the phase-in period and use of banked Tier 2 NOx credits of the selected NOx FEL cap.

6 ~~If interim Tier 4 standards are not met in 2008, the alternate NOx FEL would only be available for 2015~~For manufacturers certifying engines in this power category using a percentage phase-in/phase-out approach instead of the ALT NOx or ALT NOx+NMHC standards in Table 1b of §2423(b)(1)(B), the ALT NOx and ALT NOx+NMHC FEL caps in the table apply only in the 2014-2015 model years if certifying in accordance with the provisions in §1039.102(d)(1) of the 2011 and Later Test Procedures, and only in the 2015 model year if certifying under §1039.102(d)(2) of the 2011 and Later Test Procedures.

7 If neither the alternate phase-in option nor banked Tier 2 credits are used, either NOx standard, or the NOx+NMHC standard, and corresponding FEL may be applied for this category.

8 The phase-out NMHC+NOX FEL cap is 6.6 g/kW-hr for engines < 225 kW, and 6.4 g/kW-hr for engines ≥ 225 kW in this category.

9 For manufacturers certifying engines in this power category using the percentage phase-in/phase-out approach instead of the ALT NOx standard or the ALT NOx+NMHC standard in Table 1b of §2423(b)(1)(B), the ALT NOx and ALT NOx+NMHC FEL caps in the table applies

only for the 2014 model year.

(C) *Split family provision.* For generating or using credits in the 56 ≤ kW ≤ 560 power categories during the phase-in of Tier 4 standards, engine manufacturers may elect to split an engine family into two subfamilies (e.g., one which uses credits and one which generates credits for the same pollutant). The engine manufacturer must indicate in the application for certification that the engine family is to be split, and may calculate emission credits relative to different emission standards (i.e., phase-in and phase-out standards) for different sets of engines within the engine family, but must certify the engine family to a single set of standards and FELs. The engine manufacturer shall calculate NMHC+NOx emission credits by adding the NOx FEL to the NMHC phase-in standard for comparison with the applicable NMHC+NOx phase-out standard. Any engine family certified under the provisions of this paragraph (C) must meet the applicable phase-in standard for NMHC. The engine manufacturer shall be responsible for assigning the number and configurations of engines within the respective subfamilies before the due date of the final report required in Part 1039, Subpart H of the 2008-2010 Test Procedures or Part I-D of the 2011 and Later Test Procedures as applicable. The same label must be applied to each engine in the family, and must include the NOx FEL to which the engine is certified.

(3)(A) The opacity of smoke emissions from new 1996 through 1999 model year heavy-duty off-road compression-ignition engines 175 to 750 horsepower, inclusive, or from all new 2000 and later model year compression-ignition engines sold in this state, shall not exceed, based on the applicable measurement techniques specified in Part 89, Subpart B of the 2000 Plus Limited Test Procedures and Part 1039, Subpart B of the 2008-2010 Test Procedures or Part I-D of the 2011 and Later Test Procedures as applicable, the following:

1. 20 percent during the engine acceleration mode.
2. 15 percent during the engine lugging mode.
3. 50 percent during the peaks in either mode.

(B) The following engines are exempt from the requirements of this paragraph (3):

1. Single-cylinder engines.
2. Propulsion marine compression-ignition engines.
3. Constant-speed engines.
4. Engines certified to a PM emission standard or FEL of 0.07 grams per kilowatt-hour or lower.

(4) Low-emitting Blue Sky Series engines requirements.

(A) *Voluntary standards.* Engines subject to the standards in (b)(1)(A) may be designated "Blue Sky Series" engines by meeting the voluntary standards contained in Table 3, which apply to all certification and in-use testing. Blue Sky Series engines shall not be included in the Averaging, Banking, and Trading program. Table 3 follows:

Table 3. – Voluntary Emission Standards
(grams per kilowatt-hour)

Maximum Rated Power (kW)	NMHC+NO_x	PM
KW<8	4.6	0.48
8≤kW<19	4.5	0.48
19≤kW<37	4.5	0.36
37≤kW<75	4.7	0.24
75≤kW<130	4.0	0.18
130≤kW≤560	4.0	0.12
KW>560	3.8	0.12

(B) *Additional standards.* Blue Sky Series engines are subject to all provisions that would otherwise apply under this part, except as specified in (C) of this section.

(C) *Test Procedures.* NO_x, NMHC, and PM emissions are measured using the procedures set forth in 40 CFR part 86, subpart N (July 1, 1999), which is incorporated by reference, in lieu of the procedures set forth in subpart E of the 2000 Plus Limited Test Procedures. CO emissions may be measured using procedures set forth in 40 CFR part 86, subpart N (July 1, 1999), or in subpart E of the 2000 and Later Test Procedures. Manufacturers may use an alternate procedure to demonstrate the desired level of control if approved in advance by the Executive Officer. Engines meeting the requirements to qualify as Blue Sky Series engines must be capable of maintaining a comparable level of emission control when tested using the procedures set forth in both Section 89.112(c) and subpart E of the 2000 and Later Test Procedures. The numerical emission levels measured using the procedures from subpart E of the 2000 Plus Limited Test Procedures may be up to 20 percent higher than those measured using procedures from 40 CFR part 86, subpart N (July 1, 1999), and still be considered comparable.

(5)(A) No crankcase emissions shall be discharged into the ambient atmosphere from any new 1996-1999 model year heavy-duty off-road compression-ignition engine or any Tier 2 or later off-road compression-ignition engine subject to the 2000 Plus Limited Test Procedures. This provision does not apply to petroleum-fueled diesel cycle engines using turbochargers, pumps, blowers, or superchargers for air induction.

(B) For off-road compression-ignition engines subject to the 2008-2010 or 2011 and Later Test Procedures, no crankcase emissions shall be discharged directly into the ambient atmosphere from any engine, unless the sum of those discharged emissions are added to the exhaust emissions (either physically or mathematically) during all emission testing. To be eligible for this option, a manufacturer must design its engines so that all crankcase emissions can be routed into the applicable sampling systems specified in the 2008-2010 or 2011 and Later Test Procedures as applicable, and must

account for deterioration in crankcase emissions when determining exhaust deterioration factors. Crankcase emissions that are routed to the exhaust upstream of exhaust aftertreatment during all operation are not considered to be discharged directly into the ambient atmosphere. Furthermore, engines using charge-air compression that are certified to a transitional alternate FEL (Type ALT 20% in Table 2b) during the first four years of the Tier 4 standards for the applicable power category are exempt from this subsection, but must instead comply with the requirements in Section 2423(b)(5)(A).

(6) Engine manufacturers that voluntarily certify engines to the Tier 4 standards in Table 1b earlier than required under this article may, according to the provisions in the 2008-2010 or 2011 and Later Test Procedures as applicable, generate additional ABT credits, or as an alternative, offset future Tier 4 compliance requirements should the equipment manufacturer that was provided the engine decline to use its early introduction incentives according to the provisions in Section 2423(d)(9). Table 4, as follows, summarizes the incentives for the early introduction of Tier 4 engines and some of the conditions that determine eligibility.

Table 4. – Early Introduction Incentives for Engine Manufacturers

EARLY INTRODUCTION	POWER CATEGORY	QUALIFYING STANDARDS [1] grams per kilowatt-hour	PER-ENGINE INCENTIVE
Final Tier 4 PM-Only [2]	19 ≤ kW < 56	0.03 PM	3 for 2 PM-Only
	56 ≤ kW < 560	0.02 PM	
Final Tier 4 ALL	19 ≤ kW < 56	0.03 PM / 4.7 NMHC+NOx	3 for 2
	56 ≤ kW ≤ 560	0.02 PM / 0.40 NOx / 0.19 NMHC	
	GEN > 560	0.03 PM / 0.67 NOx / 0.19 NMHC	
	ELSE > 560	0.04 PM / 3.5 NOx / 0.19 NMHC	
Ultra Low NOx	kW ≥ 19	Final Tier 4 PM & NMHC / 0.20 NOx	2 for 1

Notes:

1 All engines must meet the Tier 4 crankcase emissions requirements. Engines must certify using all test and other requirements otherwise required for final Tier 4 standards such as for transient and not-to-exceed limits.

2 Offsets must be earned prior to the start of phase-in requirements (prior to 2013 for 19 ≤ kW < 56 engines, prior to 2012 for 56 ≤ kW < 130 engines, prior to 2011 for 130 ≤ kW ≤ 560 engines, prior to 2015 for > 560 kW engines)

(7) *Provisions for small-volume manufacturers.* Small-volume engine manufacturers are entitled to special compliance provisions under this paragraph, but must notify the Executive Officer in writing before January 1, 2008, of the intent to use the provisions.

(A) Small-volume engine manufacturers may delay complying with certain otherwise applicable Tier 4 emission standards and requirements as described in the following table:

Table 5. – Small-Volume Engine Manufacturer Provisions

Maximum Engine Power	Temporary Relief Replacement Standards	Delay End Date (Model Year)
kW < 19	Tier 2	2011
19 ≤ kW < 37	Interim Tier 4	2016
37 ≤ kW < 56	See paragraph (7)(B) of this section for special provisions that apply for engines in this power range.	
56 ≤ kW < 130	Tier 3	2015

(B) The provisions of this paragraph (7) for engines 37 ≤ kW < 56 are applicable per one of the following options:

1. Manufacturers that comply with the 0.30 g/kW-hr PM standard in all model years from 2008 through 2012 without using PM credits may continue meeting that standard through 2015.

2. Manufacturers that choose not to comply with paragraph (7)(B)1. of this section may continue to comply with the standards and requirements in the 2000 Plus Limited Test Procedures for model years through 2012, but must begin complying in 2013 with the Tier 4 standards and requirements specified in Table 1b for model years 2013 and later.

(C) After the period of relief indicated in paragraphs (7)(A) and (B) of this section has expired, small-volume engine manufacturers must comply with the same Tier 4 standards and requirements as all other manufacturers.

(D) For engines not in the 19 ≤ kW < 56 power range, small-volume engine manufacturers must meet the following conditions for the model years in which compliance with the otherwise applicable standards under this paragraph (7) is delayed:

1. Produce engines that meet all the emission standards and other requirements under the 2000 Plus Limited Test Procedures applicable for that model year, except as noted in this paragraph (7).

2. Meet the labeling requirements in the 2000 Plus Limited Test Procedures, but must use the following in place of the otherwise required statement of compliance in Section 2424(c)(2): "THIS ENGINE COMPLIES WITH CALIFORNIA REGULATIONS

FOR [CURRENT MODEL YEAR] OFF-ROAD COMPRESSION-IGNITION ENGINES UNDER 13 CCR 2423(b)(7)." The referencing of similar federal requirements under this provision is permitted.

3. Small-volume engine manufacturers must notify the equipment manufacturer that the engines produced under this section are excluded from the production volumes associated with the equipment manufacturer flexibility program in Section 2423(d).

(E) For engines in the 19 ≤ kW < 56 power range, small-volume engine manufacturers must meet the following conditions for the model years in which compliance with the otherwise applicable standards under this paragraph (7) is delayed:

1. Produce engines in those model years that meet all the emission standards and other requirements that applied for model year 2008 engines in the same power category.

2. Meet the labeling requirements in Section 2424(c)(3), but use the following compliance statement instead of the compliance statement in Section 2423(c)(3): "THIS ENGINE COMPLIES WITH CALIFORNIA REGULATIONS FOR [CURRENT MODEL YEAR] OFF-ROAD COMPRESSION-IGNITION ENGINES UNDER 13 CCR 2423(b)(7)." The referencing of similar federal requirements under this provision is permitted.

3. Notify the equipment manufacturer that engines produced under this section are excluded from the production volumes associated with the equipment-manufacturer allowance program in Section 2423(d).

(F) The provisions of this paragraph (7) may not be used to circumvent the requirements of this article.

(8) *Useful life*. For purposes of certification, a manufacturer must demonstrate compliance with the standards set forth in this paragraph (b) over the full useful life of the engine, as defined in the applicable test procedures.

(9) *NTE deficiencies*. A manufacturer may petition the Executive Officer to accept an off-road compression-ignition engine as compliant with the NTE requirements specified in the 2008-2010 or 2011 and Later Test Procedures as applicable even though specific elements of those requirements may not be fully met. Such grants of compliance, otherwise known as deficiencies, shall be limited to engines that have functioning emission-control hardware capable of allowing the engine to comply with the NTE limits. Deficiencies shall be granted by the Executive Officer according to the following stipulations:

(A) A manufacturer must apply for specific deficiencies at the time of, or prior to, submitting its application for certification. Deficiencies shall be assigned for an engine

model within an engine family. The Executive Officer shall not approve deficiencies that are requested retroactively to cover engines already certified. The scope of each deficiency must be clearly identified in the certification application, and any auxiliary emission control device(s) used to control emissions to the lowest practical level must be identified with respect to each deficiency that is being requested.

(B) Deficiencies shall only be approved if compliance would be infeasible or unreasonable considering factors such as the technical feasibility of the given hardware, the availability of lead time, production cycles including the phase-in or phase-out of engines or vehicle designs, and planned computers upgrades. Other relevant factors may be considered.

(C) Deficiencies shall expire after a single model year and may be limited to specific engine configurations. The Executive Officer may approve a manufacturer's request for the same deficiency in the following model year if correcting the deficiency would require extreme hardware or software modifications and the manufacturer has demonstrated an acceptable level of effort toward complying.

(D) The number of deficiencies available to a manufacturer shall not be limited during the first three model years in which NTE limits apply to the manufacturer's engines. For the next four model years, up to three deficiencies per engine family shall be available to a manufacturer. Deficiencies of the same type that apply similarly to different power ratings within a family shall count as one deficiency per family. The Executive Officer may conditionally approve additional deficiencies during these four years, but may impose stipulations on their applicability as appropriate. Deficiencies shall not be approved beyond the seven-year period specified in this paragraph (8).

(10) *Adjustable parameters.* Manufacturers that design engines with adjustable parameters must meet all the requirements of this paragraph (b) for any adjustment in the physically adjustable range. An operating parameter is not considered adjustable if it is permanently sealed or if it is not normally accessible using ordinary tools. The Executive Officer may require that the adjustable parameters be set to any specification within the adjustable range during any testing, including certification testing, selective enforcement auditing, or in-use testing.

(11) *Prohibited controls.* A manufacturer shall not design engines with emission control devices, systems, or elements of design that cause or contribute to an unreasonable risk to public health, welfare, or safety while operating.

(12) *Defeat devices.* Engines equipped with a defeat device shall not be certified for sale in California. A defeat device is a component or system that reduces the effectiveness of emission controls under conditions that the engine may reasonably be expected to encounter during normal operation and use. This prohibition does not apply to auxiliary-emission control devices identified in the certification application if one of more of the following is true:

(A) The operating conditions where the auxiliary-emission control device is active were substantially encountered during all testing requirements as described in Part 1039, Subpart F of the 2008-2010 Test Procedures or Part I-D of the 2011 and Later Test Procedures as applicable.

(B) The design of the auxiliary-emission control device is shown to be necessary for preventing engine (or equipment) damage or accidents.

(C) The auxiliary-emission control device only reduces the effectiveness of emissions control during engine starting.

(c)(1) The test procedures for determining certification and compliance with the standards for gaseous exhaust emissions from new 1996-1999 heavy-duty off-road compression-ignition engines sold in the state are set forth in the 1996-1999 Heavy-Duty Test Procedures.

(2)(A) The test procedures for determining certification and compliance with the standards for gaseous exhaust emissions and the standards for opacity of smoke emissions from new 2000 model year and later off-road compression-ignition engines for which the standards in paragraph (b)(1)(A) are applicable, and sold in the state, are set forth in the 2000 Plus Limited Test Procedures.

(B) The test procedures for determining certification and compliance with the standards for gaseous exhaust emissions, particulate exhaust emissions, opacity of smoke emissions, and not-to-exceed emissions from new 2008 model year and later off-road compression-ignition engines for which the limits in paragraph (b)(1)(B) are applicable, and sold in the sState, are set forth in the 2008-2010 or 2011 and Later Test Procedures as applicable.

(3) The test procedures for determining certification and compliance with the standards for particulate exhaust emissions from new 1996 and later off-road compression-ignition engines for which the standards in paragraph (b)(1)(A) are applicable, and sold in the state, are set forth in the PM and Test Cycle Limited Test Procedures.

(4) The test procedures for determining certification and compliance with the standards for the opacity of smoke emissions from new 1996-1999 off-road compression-ignition engines sold in the state are set forth in the 1996-1999 Smoke Test Procedures.

(d) *Implementation flexibility for equipment and vehicle manufacturers and post-manufacture marinizers.* For a limited time, off-road equipment and vehicle manufacturers and post-manufacture marinizers may produce equipment with engines that are subject to less stringent emission standards than required by Tables 1a and 1b

for new 2000 model year and later off-road equipment and vehicles and marine compression-ignition engines, subject to the requirements of paragraph (e) of this section. Separate provisions are provided for equipment with engines subject to the 2000 Plus Limited Test Procedures versus equipment with engines subject to the 2008-2010 or 2011 and Later Test Procedures as applicable, and are identified accordingly in the following subsections. Only manufacturers that have primary responsibility for designing and manufacturing equipment, and have manufacturing procedures for installing engines in equipment, are eligible to participate in the equipment manufacturer flexibility program provided by the 2008-2010 or 2011 and Later Test Procedures as applicable. Equipment manufacturers participating in this flexibility program must comply with the notification and reporting requirements specified in Section 2423(d)(7). Engines produced for this flexibility program using FELs greater than the applicable standards must be offset with sufficient ABT credits. The following allowances apply separately to each engine power category subject to standards under Section 2423(b)(1):

(1) *Percent-of-production allowances.*

(A) *Equipment rated at or above 37kW and subject to the 2000 Plus Limited Test Procedures.* A manufacturer may produce equipment and vehicles with engines rated at, or above, 37kW that are exempted from meeting current model year emission standards for a portion of its California-directed production volume. These percent-of-production flexibility allowances must be used within the seven years immediately following the date on which Tier 2 engine standards first apply to engines used in such equipment and vehicles, provided that the seven-year sum of the U.S.-directed portion of the manufacturer's percent-of-production flexibility allowances does not exceed 80 percent, expressed in cumulative yearly percentage increments, and provided that all such equipment and vehicles contain only engines that have been certified to the Tier 1 or Tier 2 standards;

(B) *Equipment rated under 37kW and subject to the 2000 Plus Limited Test Procedures.* A manufacturer or post-manufacture marinizer may produce equipment and vehicles and marine engines with engines rated under 37kW that are exempt from meeting current model year emission standards for a portion of its California-directed production volume. These percent-of-production flexibility allowances must be used within the seven years immediately following the date on which Tier 1 engine standards first apply to engines used in such equipment and vehicles and marine engines, provided that the seven-year sum of the U.S.-directed portion of the manufacturer's percent-of-production flexibility allowances does not exceed 80 percent, expressed in cumulative yearly percentage increments.

(C) *Equipment subject to the 2008-2010 or 2011 and Later Test procedures.* A manufacturer may produce equipment and vehicles with engines that are exempt from meeting current model year emission standards for a portion of its California-directed production volume. These percent-of-production flexibility allowances must be used

within one of the seven-year flexibility usage periods specified in Table 6 for each applicable power category, provided that the seven-year sum of the U.S.-directed portion of the manufacturer's percent-of-production flexibility allowances does not exceed 80 percent, expressed in cumulative yearly percentage increments, except as provided for in paragraph (d)(6) or (f). Equipment used as percent-of-production flexibility allowances must contain only engines that have been certified to, at least, the standards listed in Table 6, corresponding to the flexibility usage period selected by the manufacturer. All flexibility allowances for a power category must be used within the same flexibility usage period.

Table 6. – Tier 4 Flexibility Allowance Options

Power Category	7 Year Usage Period	Flexibility Standard[1]
< 19 kW	2008 – 2014	Tier 2
19 ≤ kW < 56	2008 – 2014[12]	~~Tier 3~~Tier 2[2]
	2012 - 2018	2008 Interim Tier 4
56 ≤ kW < 130	2012 - 2018	Tier 3
	2014 - 2020	2012 Interim Tier 4
130 ≤ kW ≤ 560	2011 - 2017	Tier 3
	2014 - 2020	2011 Interim Tier 4
> 560 kW	2011 - 2017	Tier 2
	2015 - 2021	2011 Interim Tier 4

Notes:

1 Engines certified to FELs for the flexibility standards indicated still comply with the emission Tier requirements; however, engines using FELs greater than the applicable standards must be off-set with sufficient ABT credits.

~~1~~2 This usage period is not available for allowances greater than or equal to 37 kW unless interim Tier 4 standards have been met starting in 2008.

~~2 Flexibility allowances under 37kW may contain engines certified to the Tier 2 standards.~~

(2)(A) *Small volume allowances subject to the 2000 Plus Limited Test Procedures.* An off-road equipment or vehicle manufacturer or post-manufacture marinizer may exceed the production percentages in paragraphs (d)(1)(A) and (B) of this section for a portion of its California-directed production, provided that in each regulated power category the manufacturer's total number of U.S.-directed off-road equipment and vehicles and marine diesel applications that contain engines which are exempt from meeting current model year emission standards over the years in which the percent-of-production allowance applies:

1. does not exceed 100 units times the number of years in which the percent-of-production allowance applies, and

2. does not exceed 200 units in any year, and

3. does not use engines from more than one engine family.

(B) *Small volume allowances subject to the 2008-2010 or 2011 and Later Test Procedures as applicable.* As an alternative to the percent-of-production allowance in Section 2423(d)(1)(C), an off-road equipment or vehicle manufacturer may produce equipment with engines that are exempt from meeting current model year emission standards for a portion of its California-directed production volume, provided that the exempt equipment is a subset of the manufacturer's U.S.-directed volume of exempt equipment and the manufacturer is in compliance with the following provisions:

1. *Single engine family provision.* A manufacturer may claim up to 700 U.S.-directed flexibility allowances within a power category during one of the seven-year flexibility usage periods specified in Table 6, but no more than 200 allowances in a single year within a power category, except as provided for in paragraph(d)(6) or (f). Engines within a power category that are used in these flexibility allowances must be from a single engine family within a given year.

2.a. *Multiple engine family provision for flexibility allowances below 130 kW.* A manufacturer may claim up to 525 U.S.-directed flexibility allowances within a power category during one of the seven-year flexibility usage periods specified in Table 6, but no more than 150 allowances in a single year within a power category, except as provided for in paragraph (d)(6) or (f). Engines within a power category that are used in these flexibility allowances may be from multiple engine families within a given year.

b. *Multiple engine family provision for flexibility allowances at or above 130 kW.* A manufacturer may produce up to 350 U.S.-directed flexibility allowances within a power category during one of the seven-year flexibility usage periods specified in Table 6, but no more than 100 allowances in a single year within a power category, except as provided for in paragraph (d)(6) of (f). Engines within a power category that are used in these flexibility allowances may be from multiple engine families within a given year.

(3)(A) *Inclusion of previous-tier engines.* Off-road equipment and vehicles and marine diesel engines built with previous tier or noncertified engines under the existing inventory provisions of the 2000 Plus Limited Test Procedures (40 CFR Section 89.1003(b)(4)) need not be included in determining compliance with paragraphs (d)(1)(A) and (B) and (d)(2)(A) of this section.

(B) *Inclusion of engines not subject to Tier 4 requirements.* Off-road equipment and vehicles built with engines otherwise exempt from the requirements of the 2008-2010 or 2011 and Later Test Procedures as applicable are not required to be counted toward the percentage, or number, of claimed flexibility allowances under the provisions in Subsections (d)(1)(C) and (d)(2)(B). Such exempted engines include unused inventories produced prior to the effective date of the Tier 4 standards, excluding stockpiled engines, and hand-startable, air cooled, direct-injection engines below 8 kW

in 2008 and 2009 that do not meet the Tier 4 PM standard. Nonetheless, manufacturers may choose to include these engines in the count of total equipment produced from which the percentage of flexibility allowances in Subsection (d)(1)(C) is derived.

(4) *Early-use of flexibility allowances.* Manufacturers may start using a portion of the flexibility allowances in Subsections (d)(1)(C) and (d)(2)(B) for equipment and vehicles containing engines not yet subject to the Tier 4 standards, provided that the seven-year period for using flexibility allowances under the 2000 Plus Limited Test Procedures flexibility program has expired. All equipment and vehicles claimed as flexibility allowances under this early-use provision must contain engines that have been certified to, at least, the Tier 1 or Tier 2 standards. Manufacturers must count these Tier 2 or Tier 3 equipment and vehicles toward the total percentage, or number, of flexibility allowances permitted under the provisions of Sections (d)(1)(C) and (d)(2)(B). The maximum cumulative early-use allowance is 10 percent under the percent-of-production provision in Section (d)(1)(C), or 100 units under the small volume provision in Section (d)(2)(B). Table 7 shows the applicable years for using early-use flexibility allowances. Table 7 follows:

Table 7. – Years for Early-Use Flexibility Allowances

Maximum Engine Power	Calendar Years
kW < 19	2007
19 ≤ kW < 37	2006 - 2011
37 ≤ kW < 56	2011
56 ≤ kW < 75	2011
75 ≤ kW < 130	2010 - 2011
130 ≤ kW < 225	2010
225 ≤ kW < 450	2008 - 2010
450 ≤ kW ≤ 560	2009 - 2010
> 560 kW	-

(5) *Labeling requirements.* Allowances claimed under the Tier 2/3 or Tier 4 equipment flexibility programs must be labeled, as appropriate, per the following:

(A) *Engine labeling.* Except for engines used in flexibility allowances prior to January 1, 2007, engine manufacturers shall meet the labeling requirements provided in Section 2424, except that manufacturers may omit the family emission limits from the label only if the limits are more stringent than the emissions standards, with the following substitutions:

For flexibility engines meeting previous year emission requirements, the engine manufacturer shall substitute the following for the statement of compliance required in Sections 2424(c)(1)(E)6 and 2424(c)(2):

> "THIS ENGINE COMPLIES WITH CALIFORNIA EMISSION REQUIREMENTS UNDER 13 CCR 2423(d). SELLING OR INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER THAN FOR THE EQUIPMENT FLEXIBILITY PROVISIONS CITED MAY BE A VIOLATION OF STATE LAW SUBJECT TO CIVIL PENALTY." [Insert Engine Family Name]

For flexibility engines less than 37 kW and not subject to emission requirements under the Tier 2/3 program, the engine manufacturer shall substitute the following for the statement of compliance required in Section 2424(c)(1)(E)6:

> "THIS ENGINE QUALIFIES FOR USE IN EQUIPMENT RATED BELOW 37 KW BY PROVISION OF 13 CCR 2423(d). SELLING OR INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER THAN FOR THE EQUIPMENT FLEXIBILITY PROVISIONS CITED MAY BE A VIOLATION OF CALIFORNIA LAW SUBJECT TO CIVIL PENALTY."

As an alternative for flexibility engines produced under the Tier 2/3 program, and for which the engine manufacturer offers proof to the Executive Officer that the otherwise required statements of compliance in this subsection would be unduly burdensome or costly to implement, engine manufacturers may instead use the following:

> "THIS ENGINE CONFORMS TO CALIFORNIA OFF-ROAD COMPRESSION-IGNITION ENGINE REGULATIONS UNDER 13 CCR 2423(d)." [Insert Engine Family Name if Certified]

These revised statements of compliance do not preclude the referencing of similar federal requirements that would be satisfied simultaneously by meeting the provisions of Section 2423(d). Furthermore, the Executive Officer may, upon request, approve alternate labeling specifications that are equivalent to the specifications in this subsection.

(B) *Equipment Labeling.* For all allowances claimed under the Tier 4 flexibility program, equipment manufacturers shall affix a permanent label to the engine, or to a readily visible section of the equipment that cannot be easily removed. The label shall be in the English language, shall supplement the manufacturer's emission control information label, and shall include the following information:

1. The label heading "EMISSION CONTROL INFORMATION".
2. The equipment manufacturer's corporate name and trademark.
3. The calendar year in which the equipment is manufactured.

4. ~~The name,~~An e-mail address~~,~~ and phone number ~~of a person~~ to contact for further information, or a website that includes this contact information.
5. The following statement:
"THIS EQUIPMENT [or identify the type of equipment] HAS AN ENGINE THAT MEETS CALIFORNIA EMISSION STANDARDS UNDER 13 CCR 2423(d)."

This label content does not preclude the referencing of similar federal requirements that would be satisfied simultaneously by meeting the provisions of Section 2423(d).

(6) *Technical hardship allowances.* Equipment manufacturers may apply for additional flexibility allowances should extreme and unusual circumstances occur leading to technical obstacles in complying with the Tier 4 requirements. A manufacturer may request additional allowances for power categories 19 ≤ kW ≤ 560 if it claims allowances under the provisions of Section 2423(d)(1)(C), but may only request additional allowances for power categories 19 ≤ kW < 56 if it claims allowances under the provisions of Section 2423(d)(2)(B). Additional flexibility allowances shall not be provided when the engine and equipment are produced by the same manufacturer, or affiliate. The Executive Officer shall review requests for additional flexibility allowances according to the following stipulations:

(A) The manufacturer requesting additional allowances must demonstrate that the circumstances necessitating them were outside the control of the manufacturer and could not have been avoided with reasonable discretion. The manufacturer must also demonstrate that it has exercised prudent planning and has taken reasonable steps to minimize the scope of the request.

(B) Manufacturers applying for additional flexibility allowances must do so in writing to the Chief of the Mobile Source Operations Division, or designee, prior to the earliest date in which the applying manufacturer would be in violation of Section 2423(b)(1). All applications shall provide, at a minimum, the following information:

1. A description of the manufacturer's equipment design process.

2. A description of the relationship with the engine supplier regarding product design.

3. An explanation of the technical hardship leading to this request, why it cannot be addressed without additional flexibility allowances, and an explanation of the circumstances behind the technical hardship and why it was unavoidable.

4. A description of the information and products provided by the engine supplier related to equipment design, including specifications, performance data, prototypes, and the dates of delivery.

5. A comparison of the design processes of the equipment model(s) for which additional allowances are needed versus those of other models that do not need additional allowances, and an explanation of how the technical differences between the models justify the request for additional allowances.

6. A description of all efforts to find and use other compliant engines, or otherwise an explanation why none are available.

7. A description of the steps taken to minimize the scope of the manufacturer's request, and any other relevant information.

8. An estimation of the number of additional allowances needed for each equipment model covered by the request, subject to Sections 2423(d)(6)(C) and (d)(6)(D) below.

Notwithstanding, the Executive Officer may require additional information as deemed necessary before making a determination for relief.

(C) The following limits shall apply for additional flexibility allowances granted in connection to the percent-of-production provisions in Section 2423(d)(1)(C):

1. A manufacturer's California-directed share of additional flexibility allowances for each power category shall be a subset of its U.S.-directed allowances for the same power category, provided that the additional U.S.-directed allowances do not exceed 70 percent of the U.S.-directed volume of production for the power category for one year.

2. All primary percent-of-production allowances must be completely used up prior to the use of any additional flexibility allowances.

3. All additional allowances shall expire 24 months after the start of the applicable flexibility usage period for each power category, as specified in Table 6. These allowances shall only be used for the specific equipment models covered in the manufacturer's written application for relief.

(D) The following limits shall apply for additional flexibility allowances granted in connection to the small volume provisions in Section 2423(d)(2)(B):

1. Only small equipment manufacturers, as defined below, that have not been granted additional flexibility allowances for the $19 \leq kW < 56$ power category under Section 2423(d)(6)(C), are eligible to request additional flexibility allowance under this provision.

"Small equipment manufacturer," for the purpose of this provision, means a federally defined small-business equipment manufacturer that had an annual U.S.-directed production volume of equipment using off-road diesel engines 19 ≤ kW < 56 of no more than 3,000 units in 2002 and all earlier calendar years, and has 750 or fewer employees (500 or fewer employees for nonroad equipment manufacturers that produce no construction equipment or industrial trucks). For manufacturers owned by a parent company, the production limit applies to the production of the parent company and all its subsidiaries and the employee limit applies to the total number of employees of the parent company and all its subsidiaries.

2. All primary small volume allowances for the 19 ≤ kW < 56 power category must be completely used up for a given year prior to the use of additional flexibility allowances.

3. Additional allowances shall only be used for equipment with engines rated 19 ≤ kW < 37.

4. A manufacturer's California-directed share of additional flexibility allowances under this provision shall be a subset of its U.S.-directed allowances, which shall not exceed 1,100.

5. All additional allowances shall expire 36 months after the start of the applicable flexibility usage period for each power category, as specified in Table 6. The allowances shall only be used for the specific equipment models covered in the manufacturer's written application for relief. The additional allowances are not subject to small volume annual limits.

(7) *Notification and reporting requirements for using Tier 4 flexibility allowances.* As a prerequisite to using any Tier 4 flexibility allowances, the equipment manufacturer shall notify the ARB of its intent to use such allowances. The manufacturer shall also send an annual report after each year that flexibility allowances have been used to verify that the allowances claimed do not exceed the number of allowances permitted.

(A) Before ~~January 1 of the first year that~~ flexibility provisions will be used, a written notice informing ARB of the manufacturer's intent to use flexibility allowances must be sent to the Chief of the Mobile Source Operations Division, or designee, containing the following information:

1. The equipment manufacturer's name and address, and the name and address of the parent company, if applicable.

2. The name, ~~and~~ telephone number, and e-mail address of a person to contact for more information.

3. The calendar years for which the Tier 4 flexibility provisions shall apply.

4. ~~The~~Each engine manufacturer's name and address ~~that~~ expected to produces the engines which will be used in the equipment claimed as flexibility allowances.

5. An accurate estimate of the number of flexibility allowances in each power category that will be produced under the percent-of-production provisions in Section 2423(d)(1)(C), or the small volume provisions in Section 2423(d)(2)(B).

6. A tabulation of U.S.-directed flexibility allowances in each power category that have been sold in previous calendar years under the provisions of Section 2423(d) and 40 CFR 89.102(d).

(B) For each year that Tier 4 flexibility allowances are used, the equipment manufacturer shall submit, by March 31 of the following year, a written report to the Chief of the Mobile Source Operations Division, or designee, documenting the utilization of those allowances. In ~~This~~the report, the manufacturer shall ~~include~~ identify the total ~~number~~count of equipment sold by the manufacturer during the preceding year for each power category, based on actual U.S.-directed production information, and shall identify the flexibility allowances in each power category by reporting the percentages of U.S.-directed flexibility production, and, if available, California-directed production volumes, corresponding to the number of equipment in each power category. If the manufacturer(s) of the engine installed in the equipment has not already been identified as required in §2423(d)(7)(A)4., the equipment manufacturer shall identify the name and address of this engine manufacturer(s) in the report. The report shall also identify the cumulative yearly totals and percentages for all flexibility allowances sold for each power category. Alternatively, the percentage figures may be omitted from the report if the report states that percent-of-production allowances were not used. ~~If available, end of year percentage figures for California-directed sales shall also be included in this report.~~

(8) *Import restrictions on the use of Tier 4 flexibility allowances.* Foreign equipment manufacturers may only import equipment with exempted flexibility engines into California according to the stipulations in Section 1039.626 of the 2008-2010 Test Procedures or Part I-D of the 2011 and Later Test Procedures as applicable. These stipulations address the potential for abuse whereby individual importers could collectively import more flexibility allowances than permitted based on the foreign equipment manufacturer's total production for the United States market. The stipulations include acceptance by the foreign equipment manufacturer of random audits by the ARB or its representatives, and the posting of a monetary bond for each imported engine to cover the cost of any potential enforcement actions. Foreign equipment manufacturers who comply with the stipulations will be eligible to receive the same flexibility allowances as domestic manufacturers.

(9) *Early introduction incentives for equipment manufacturers.* In addition to the equipment flexibility allowances provided in Subsections (d)(1)(C) and (d)(2)(B), equipment manufacturers, as provided in the 2008-2010 or 2011 and Later Test Procedures as applicable, may earn additional allowances for the early introduction of equipment with engines meeting the Tier 4 standards in Table 1b. Equipment manufacturers installing engines at or above 19 kW that comply with the final Tier 4 PM and NOx standards could earn one flexibility allowance for each early Tier 4 compliant engine used in its equipment. Equipment manufacturers installing engines 56 ≤ kW ≤ 560 that comply with the final Tier 4 PM standard and the alternative NOx standard could earn one-half of a flexibility allowance for each early Tier 4 engine used in its equipment. Table 8, below, summarizes the incentives for the early introduction of Tier 4 compliant equipment and some of the conditions that determine eligibility. Should an equipment manufacturer decline flexibility allowances earned with this provision, the allowances would then be available to the engine manufacturer that had supplied the early introduction engine, subject to the provisions in Section 2423(b)(6).

Table 8. – Early Introduction Incentives for Equipment Manufacturers

POWER CATEGORY	QUALIFYING STANDARDS (g/kW-hr)	INSTALLATION DEADLINE	FLEXIBILITY ALLOWANCE
19 ≤ kW < 56	0.03 PM / 4.7 NMHC+NOx	December 31, 2012 [1]	1 for 1
56 ≤ kW ≤ 130	0.02 PM / 0.40 NOx / 0.19 NMHC	December 31, 2011	1 for 1
	0.02 PM / 3.4 NOx / 0.19 NMHC [2]		1 for 2
130 ≤ kW ≤ 560	0.02 PM / 0.40 NOx / 0.19 NMHC	December 31, 2010	1 for 1
	0.02 PM / 2.0 NOx / 0.19 NMHC [2]		1 for 2
GEN > 560	0.03 PM / 0.67 NOx / 0.19 NMHC	December 31, 2014	1 for 1
ELSE > 560	0.04 PM / 3.5 NOx / 0.19 NMHC		

Notes:
1 The installation date for 37 ≤ kW ≤ 56 engines purchased from manufacturers choosing to opt out of the 2008 model year Tier 4 standards and instead comply with the Tier 4 standards beginning in 2012 would be December 31, 2011.
2 To be eligible, engines must meet the 0.02 g/kW-hr PM standard and the alternative NOx standards.

(e) *Recordkeeping and calculation to verify compliance.* The following shall apply to off-road equipment or vehicle manufacturers and post-manufacture marinizers who produce flexibility equipment or vehicles or marine diesel engines under both the Tier 2/3 and Tier 4 flexibility provisions of paragraph (d) of this section, except as otherwise noted:

(1) For each power category in which excepted off-road equipment or vehicles or marine diesel engines are produced, a calculation to verify compliance with the requirements of paragraph (d) of this section shall be made by the off-road equipment

or vehicle manufacturer or post-manufacture marinizer. This calculation shall be made for flexibility allowances under the Tier 2/3 program no later than December 31 of the year following the last year in which allowances are used, and as indicated in Subsection (d)(7)(B) for flexibility allowances under the Tier 4 program. The calculation shall be based on actual national production information from the subject years. If both the percent-of-production and small volume allowances have been exceeded, then the manufacturer is in violation of Section 2420(a)(3), except as provided under Subsection (d)(6) and paragraph (f) of this section.

(2) An off-road equipment or vehicle manufacturer or post-manufacture marinizer shall keep records of all off-road equipment and vehicles and marine diesel engines sold in California under the provisions of paragraph (d) of this section, for each power category in which flexibility allowances are claimed. These records shall include equipment and engine model numbers, serial numbers, engine family name, and dates of manufacture, engine rated power for Tier 2/3 flexibility engines, and maximum engine power for Tier 4 flexibility engines. In addition, the manufacturer shall keep records sufficient to demonstrate the verifications of compliance required in paragraph (e)(1) of this section and the notifications and reports specified in Section 2423(d)(7), as applicable. All records shall be kept until at least two full years for flexibility allowances under the Tier 2/3 program and five full years for flexibility allowances under the Tier 4 program after the final year in which allowances are available for each power category, and shall be made available to the Executive Officer upon request.

(f) *Economic hardship relief.* Off-road equipment and vehicle manufacturers and post-manufacture marinizers may request relief from the Executive Officer, or designee, subject to the following requirements:

(1) The application for relief must be submitted for approval to the Chief of the Mobile Source Operations Division, or designee, in writing prior to the earliest date in which the applying manufacturer would be in violation of Section 2423(b)(1). The off-road equipment or vehicle manufacturer applying for hardship relief must submit evidence for approval, showing that the following requirements have been met:

(A) The off-road equipment or vehicle manufacturer applying for hardship relief must not be the manufacturer of the engines used in the equipment for which relief is sought. This requirement does not apply to post-manufacture marinizers.

(B) The conditions causing the impending violation must not be substantially the fault of the applying manufacturer.

(C) The conditions causing the impending violation must be such that the off-road equipment or vehicle manufacturer applying for hardship relief will experience serious economic hardship if relief is not granted.

(D) The off-road equipment or vehicle manufacturer applying for hardship relief must demonstrate that no allowances under paragraph (d) of this section will be available to avoid the impending violation.

(2) Any relief granted must begin within one year after the implementation date of the standard applying to the engines being used in the equipment, or to the marine diesel engines, for which relief is requested, and may not exceed 12 months (24 months for small volume manufacturers) in duration.

(3) The Executive Officer may impose other conditions on the granting of relief, including provisions to recover the lost environmental benefit. The labeling requirements in the 2008-2010 and 2011 and Later Test Procedures apply as applicable.

(g) *Alternative Flexibility for Post-Manufacture Marinizers.* Post-manufacture marinizers may elect to delay the effective date of the Tier 1 standards for marine propulsion diesel engines rated under 37kW by one year, instead of using the provisions of paragraphs (d) and (f) of this section. Post-manufacture marinizers wishing to take advantage of this provision must inform the Executive Officer of their intent to do so in writing before the date that the standards would otherwise take effect.

(h) *Allowance for the production of engines.* To meet the demand for engines created under paragraph (d), (f), or (g) of this section, engine manufacturers may produce engines that do not meet current year emission requirements. However, engine manufacturers must receive written assurance from each equipment manufacturer, prior to production, that a certain number of these engines are needed for the equipment manufacturer's Tier 4 equipment flexibility allowances. Engine manufacturers shall provide to the Executive Officer annually, as part of the certification application, a list of the equipment manufacturers requesting such engines for their Tier 2/3 and Tier 4 equipment flexibility allowances. The list shall include the equipment manufacturers' names, engine models, and estimated national production volumes. A copy of the original correspondence from the equipment manufacturer requesting the production of flexibility engines shall be kept on file by the engine manufacturer in addition to, and in accordance with, the provisions of §1039.250 of the 2008-2010 Test Procedures or Part I-D of the 2011 and Later Test Procedures, as applicable, and shall be made available without delay to the Executive Officer upon request. Furthermore, all engines produced for sale in California under either of the transitional flexibility provisions for equipment manufacturers, must be covered by an Executive Order starting January 1, 2007. To obtain an Executive Order for these engines, the engine manufacturer shall comply with the following:

(1) Prior to the start of production, submit a letter to the Chief of the Mobile Source Operations Division, or designee, requesting certification for flexibility engines intended for sale in California, and

(2) Provide written assurance that the flexibility engines to be produced will be identical in all material respects to those for which a valid Executive Order has been issued in a previous model year. The engine family name of the previously certified engine family must be included in the manufacturer's request for certification.

Upon determination that the conditions in paragraphs (1) and (2) have been satisfied, the Executive Officer shall provide the engine manufacturer with an Executive Order covering the requested flexibility engine families for the current model year. The engine family names included in the Executive Order shall either be the same as, or a subset of the previously certified engine family names, and shall remain the same for as long as the engines continue to qualify as flexibility allowances regardless of model year. These engine family names shall be used by the engine manufacturer to comply with the labeling requirements of 2423(d)(5)(A).

(i) [Reserved]

(j)(1) A new compression-ignition off-road engine intended solely to replace an engine in a piece of off-road equipment that was originally produced with an engine manufactured prior to the applicable implementation date as specified in Section 2423, shall not be subject to the emission requirements of Section 2423 provided that:

(A) the engine manufacturer has ascertained that no engine produced by itself or the manufacturer of the engine that is being replaced, if different, and certified to the requirements of this article, is available with the appropriate physical or performance characteristics to repower the equipment; and

(B) unless an alternative control mechanism is approved in advanced by the Executive Officer, the engine manufacturer or its agent takes ownership and possession of the engine being replaced; and

(C) the engine manufacturer does not use the replacement-engine exemption to circumvent the regulations; and

(D) the replacement engine is clearly labeled with the following language, or similar alternate language approved in advance by the Executive Officer:

If the replacement engine is built to a configuration that was not subject to any emission standards under this Article 4, add a permanent label with your corporate name and trademark and the following language:

"THIS ENGINE DOES NOT COMPLY WITH CALIFORNIA ~~AND FEDERAL~~ OFF-ROAD ~~OR ON-HIGHWAY~~ EMISSION REQUIREMENTS. SALE OR INSTALLATION OF THIS ENGINE FOR ANY PURPOSE OTHER THAN AS A REPLACEMENT ENGINE FOR AN ENGINE MANUFACTURED PRIOR TO

JANUARY 1 [~~INSERT APPROPRIATE YEAR~~Insert appropriate year reflecting when the earliest tier of emission standards began to apply to engines of that size and type]~~IS~~ MAY BE A VIOLATION OF CALIFORNIA~~AND FEDERAL~~ LAW SUBJECT TO CIVIL PENALTY."

Beginning January 1, 2013, the following additional information shall also be included on the emission control label:

ENGINE POWER:	{insert the advertised power of the specific engine configuration or the applicable power category for the engine family in kilowatts}
DATE OF MANUFACTURE:	{insert the engine build date}"

In lieu of including "Engine Power" or "Date of Manufacture" on the emissions control label, manufacturers may provide this information on a supplemental label attached to the engine in accordance with the provisions of §2424.

If the replacement engine is built to a configuration that was subject to emission standards under this Article 4, add a permanent label with your corporate name and trademark and the following language:

"THIS ENGINE COMPLIES WITH CALIFORNIA OFF-ROAD EMISSION REQUIREMENTS FOR [Identify the appropriate emission standards (by model year, tier, or emission levels) for the replaced engine] ENGINES UNDER 13 CCR 2423(j). SELLING OR INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER THAN TO REPLACE A [Identify the appropriate emission standards (by model year, tier, or emission levels) for the replaced engine] OFF-ROAD ENGINE MAY BE A VIOLATION OF CALIFORNIA LAW SUBJECT TO CIVIL PENALTY.

Beginning January 1, 2013, the following additional information shall also be included on the emission control label:

ENGINE POWER:	{insert the certified power in kilowatts of the specific engine configuration, if applicable, otherwise insert advertised power in kilowatts}
REFERENCE FAMILY NAME:	{insert the engine family name of the replacement engine as recorded in the Executive Order for the engine family to which the replacement engine was originally certified}
DATE OF MANUFACTURE:	{insert the engine build date}"

In lieu of including "Engine Power," Reference Family Name," or "Date of Manufacture" on the emissions control label, manufacturers may provide this information on a supplemental label attached to the engine in accordance with the provisions of §2424. Manufacturers may alternately state the applicable power category in kilowatts for the certified engine family on the emission control or supplemental label when indicating "Engine Power." Additionally, manufacturers may indicate the "Emissions Tier" of the replacement engine on the emissions control or supplemental label instead of the "Reference Family Name." For the purpose of this section, "Emissions Tier" is the emissions standard designation (e.g., Tier 1, Tier 2, Tier 3, Tier 4i, Tier 4f) of the engine recorded in the Executive Order for the engine family to which the replacement engine was originally certified. Certified power means the configuration-specific power of the replacement engine as originally identified in the application for certification of the reference engine family (see §1039.205(a)). Advertised power means engine power as stated by the manufacturer in sales literature.

2) At the conclusion of each of the 2000 and later model years, the manufacturer must provide, by engine model, the actual number of replacement engines produced for California during the model year, and a description of the physical or performance characteristics of those models that indicate certified replacement engine(s) were not available as per paragraph (1).

(k) Any new engine certified to comply with California emission standards and test procedures for on-road applications may, upon approval by the Executive Officer, be considered to be in compliance with these regulations.

(l) *Practices and labeling requirements for rebuilt engines.* This subsection shall apply as provided in paragraph (1) below to all off-road compression-ignition engines subject to the requirements of Section 2423 that are rebuilt after December 31, 2006, including those engines that were originally manufactured on, or prior to, December 31, 2006.

(1) *Practices.* The rebuilding practices described in Part 89.130 of the incorporated 2000 Plus Limited Test Procedures, including the exemption for engines equal to or greater than 37 kW that meet the Tier 1 standard, and Part 1068.120 of the 2008-2010 Test Procedures or Part I-F of the 2011 and Later Test Procedures as applicable shall apply. These practices are summarized in paragraphs (1)(A) and (1)(B) below, which are provided as respective references for the labeling requirements in paragraphs (2)(A) and (2)(B) of this subsection.

(A) Any person who rebuilds an engine that either remains installed in a piece of equipment during the rebuilding process or will be reinstalled after the rebuilding process has been completed shall rebuild the engine to the same certified configuration or the certified configuration of a later model year engine. For the purposes of this section, these engines shall be referred to as "rebuilt original engines."

(B) Any person who replaces the engine in a piece of equipment with a rebuilt engine (this includes engines that have been substantially assembled from parts originally belonging to one or more other engines) shall use a replacement engine with a certified configuration that is at least equivalent, from an emissions standpoint, to that of the engine being replaced. For the purposes of this section, these engines shall be referred to as "rebuilt replacement engines."

(2) *Labeling Requirements.*

(A) Rebuilt Original Engines. Any person who rebuilds engines for which the practices in paragraph (1)(A) of this subsection apply shall ensure that the rebuilt engines are labeled as follows:

1. An original engine that is rebuilt to the same emissions configuration employed by the engine at the time it was issued an Executive Order shall retain the emissions control label described in Section 2424. The rebuilder shall not remove or deface in any manner the original label and must take care to protect it from the effects of sandblasting, acid dipping, or any other restorative processes. Notwithstanding the preceding requirements and prohibitions of this paragraph (2)(A)1., the rebuilder shall substitute a new permanent label containing the text in paragraph (2)(A)2. below for the original emission control label if the rebuilder determines that the label has been irreparably corrupted due to extreme and unintentional circumstances (e.g., fire or collision). The rebuilder shall provide to the Executive Officer annually a list of all rebuilt engines for which original labels have been removed under this provision no later than two months after the end of each calendar year. The rebuilder shall retain all removed labels, or otherwise document the degree to which the labels were damaged or missing (e.g., photographic proof of the corruption), for a period of no less than eight years following the date of renovation, and shall make these available to the Executive Officer upon request. The rebuilder shall be subject to civil penalty under State law should the Executive Officer determine that the original emission control label did not warrant replacement or that the rebuilder is abusing this provision;

2. An original engine that is rebuilt to a more stringent emissions configuration shall be permanently re-labeled using the following text:

> "THIS ENGINE HAS BEEN REBUILT UNDER 13 CCR 2423(l) USING MATCHED COMPONENTS OF THE SAME SPECIFICATIONS AND CALIBRATIONS AS THOSE OF A CERTIFIED TIER [*insert the numerical tier designation of the rebuilt engine*] OFF-ROAD COMPRESSION-IGNITION ENGINE. IF PLACED INTO SERVICE IN AN OFF-ROAD APPLICATION, THIS ENGINE MUST BE INSTALLED IN EQUIPMENT ORIGINALLY SOLD WITH A TIER [*insert the numerical tier designation of the rebuilt engine*] OR EARLIER ENGINE. [*insert the engine family name of the reference engine*]."

For the purpose of this label, "MATCHED" means a complete set of components corresponding to the certified emissions configuration being referenced (see the definition of "certified emissions configuration" in Section 2421(a)(13)). The reference engine is the engine family name corresponding to the certified emissions configuration to which the engine has been rebuilt. The label shall conform to the provisions of Section 2424 regarding location and visibility.

(B) Rebuilt Replacement Engines. Any person who rebuilds engines for which the practices in paragraph (1)(B) of this subsection apply shall ensure that the rebuilt engines are labeled as follows:

1. A replacement engine that is rebuilt to the same California emissions configuration employed by the engine at the time it was issued an Executive Order shall either retain the emission control label described in Section 2424 or be permanently re-labeled using the text in paragraph (2)(A)2 of this subsection. A replacement engine that is rebuilt to the same emissions configuration employed by the engine at the time it was issued a federal Certificate of Conformity, and for which no Executive Order exists, shall be permanently re-labeled using the text in paragraph (2)(A)2 of this subsection. prior to being installed in equipment that was originally sold with a California certified engine;

2. A replacement engine that is rebuilt to a more stringent emissions configuration shall be permanently re-labeled using the text in paragraph (2)(A)2. above;

3. An incomplete rebuilt replacement engine shall be permanently re-labeled using the text specified below. For the purposes of this subsection, "incomplete rebuilt replacement engine" means a rebuilt replacement engine that is sold or offered for sale in California without all the necessary components to enable engine operation including, but not necessarily limited to, the fuel system and the air system:

> "THIS ENGINE HAS BEEN REBUILT UNDER 13 CCR 2423(l) AS AN INCOMPLETE ENGINE USING ONLY MATCHED COMPONENTS OF THE SAME SPECIFICATIONS AND CALIBRATIONS AS THOSE FOUND IN OFF-ROAD COMPRESSION-IGNITION ENGINES CERTIFIED TO THE [*insert the numerical tier* or multiple tiers *designation of the rebuilt engine*]."

Any person who completes an incomplete rebuilt replacement engine with components that are not matched components, and the resulting engine is placed into service in California, is in violation of the rebuilding practices referenced under paragraph (1) of this subsection and subject to civil penalty under State law.

(C) Supplemental Labeling Requirements. Except as noted below, any person who sells or offers for sale any rebuilt engine subject to the provisions of subsection (l) shall affix a supplemental label to the rebuilt engine that:

1. states the name of the rebuilder, year of rebuild, and other pertinent information as determined by the rebuilder or specified by the Executive Officer; and

2. is clearly visible without the need to remove any engine components; and

3. does not obscure in any way the visibility of the original emission control label or the labels required under paragraphs (2)(A)2. or (2)(B)3. of this subsection; and

4. does not state or imply that the rebuilt engine is "new" or that it belongs to an engine family other than the one to which it was originally certified; and

5. has sufficient durability to remain intact and legible throughout all mandatory record keeping periods for rebuilt engines.

The requirement for a supplemental label shall be waived in cases where the rebuilder alternately chooses to incorporate the information in (C)1. above into the new permanent label specified in subsection (2)(A)2. or (2)(B)3.

(D) Rebuilt New Engines. Notwithstanding any other requirement of this subsection (l), any person who rebuilds an engine to comply with current-year emission requirements (including, but not limited to, durability and warranty), with the intent to sell or offer for sale the rebuilt engine as "new" under the coverage of a new and unique Executive Order, shall replace the original emission control label on that engine with one identifying the engine as belonging to a family meeting current-year emission requirements in accordance with the provisions of Section 2424. If desired, the rebuilder of a such an engine may optionally affix to it a supplemental label, but such a label would be required to comply with the same requirements specified in paragraph (C) of this subsection for any other rebuilt engine.

(m) *Stockpiling prohibition.* Manufacturers may not circumvent the provisions of this article by stockpiling engines with a date of manufacture preceding new or changed emission standards by deviating from normal production and inventory practices. For purposes of this paragraph (m), normal production and inventory practices means those practices typically employed for similar engine families in years in which emission standards do not change. The Executive Officer may request the submission of routine production and inventory records from manufacturers that document normal practices for up to eight years to aid in determining whether or not a violation of this section has occurred. Other stockpiling prohibitions in §1068.103 and §1068.105 of the 2011 and Later Test Procedures, Part I-E, apply.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43104 and

43211-43212, Health and Safety Code.

§ 2424. Emission Control Labels — 1996 and Later Off-Road Compression-Ignition Engines

(a) *Purpose.* The Air Resources Board recognizes that certain emissions-critical or emissions-related parts must be properly identified and maintained in order for engines to meet the applicable emission standards. The purpose of these specifications is to require engine manufacturers to affix a label (or labels) on each production engine (or equipment) to provide the engine or equipment owner and service mechanic with information necessary for the proper maintenance of these parts in customer use.

(b) *Applicability.*

(1) These specifications shall apply to 1996-1999 model year heavy-duty off-road compression-ignition engines, which have been certified to the applicable emission standards pursuant to Health and Safety Code Section 43013.

(2) These specifications shall apply to 2000 and later model year compression-ignition engines, which have been certified to the applicable emission standards pursuant to Health and Safety Code Section 43013.

(3) Engine manufacturers who have certified such engines shall be responsible for complying with these specifications.

(c) *Label Content and Location.*

(1) For 1996-1999 heavy-duty off-road compression-ignition engines:

(A) A tune-up label shall be permanently attached to the engine block or other major component in such a way that it will be readily visible after installation of the engine in the equipment. If the equipment obscures the label on the engine, the equipment manufacturer shall attach a supplemental label such that it is readily visible.

(B) In selecting an acceptable location, the manufacturer shall consider the possibility of accidental damage (e.g., possibility of tools or sharp instruments coming in contact with the label). Each label shall be affixed in such a manner that it cannot be removed without destroying or defacing the label, and shall not be affixed to any part which is likely to be replaced during the equipment's useful life. The label(s) shall not be affixed to any component which is easily detached from the engine.

(C) In addition, an engine serial number shall be stamped on the engine block or stamped on a metal label riveted to the engine block. Engine manufacturers shall keep records such that the engine serial number can easily be used to determine if an engine was certified for the applicable model year.

(D) The label shall be in the English language and use block letters and numerals which shall be of a color that contrasts with the background of the label.

(E) The label shall contain the following information:

1. The label heading shall read:

"Important Engine Information."

2. Full corporate name and trademark of the manufacturer.

3. "This (specify equipment or engine, as applicable) is certified to operate on (specify operating fuel(s))."

4. *Identification of the Exhaust Emission Control System.* Abbreviations may be used and shall conform to the nomenclature and abbreviations found in the Society of Automotive Engineers document J1930 which is incorporated by reference herein [in Section 1977, Title 13, CCR], titled "Diagnostic Acronyms, Terms, and Definitions for Electrical/Electronic Systems."

5. The specifications and adjustments recommended by the manufacturer, including, if applicable: initial injection timing, and fuel rate (in mm^3/stroke) at advertised horsepower. These specifications shall indicate the proper transmission position, (if applicable), during tune-up and what accessories, if any, should be in operation, and what systems, if any (e.g., vacuum advance, air pump), should be disconnected during the tune-up. If the manufacturer does not recommend adjustment of the foregoing specifications, the manufacturer shall include in lieu of the "specifications" the single statement "No other adjustments needed." For all engines, the instructions for tune-up adjustments shall be sufficiently clear on the label to preclude the need for a mechanic or equipment owner to refer to another document in order to correctly perform the adjustments.

6. An unconditional statement of compliance with the appropriate model year California regulations; for example, "This engine conforms to 1996 California regulations for heavy-duty off-road diesel cycle engines as applicable."

7. Total engine displacement (in cubic centimeters, liters, or cubic inches) and engine family identification.

(F)1. The manufacturer of any engine certified with a clean fuel (i.e., low-sulfur diesel fuel) shall at the time of engine manufacture, affix a permanent legible label specifying the appropriate operating fuel(s).

2. The label shall be located immediately adjacent to each fuel tank filler inlet and outside of any filler inlet compartment. It shall be located so that it is readily

visible to any person introducing fuel to such filler inlet; Provided, however, that the Executive Officer shall upon application from an engine manufacturer, approve other label locations that achieve the purpose of this paragraph. If the engine is manufactured separately from the equipment, the label shall be affixed to the engine and located so that it is readily visible. Such labels shall be in English and in block letters, which shall be of a color that contrasts with their background.

(2) For 2000 and later Tier 1, Tier 2, and Tier 3 off-road compression-ignition engines, the label content and location must comply with the requirements in Section 89.110 of the 2000 ~~and Later~~ Plus Limited Test Procedures.

(3) For 2008 and Later Tier 4 off-road compression-ignition engines, the label content and location must comply with the requirements in Section 1039.135 of the 2008-2010 Test Procedures or Part I-D of the 2011 and Later test Procedures as applicable.

(d) The provisions of these specifications shall not prevent a manufacturer from also stating on the label that such engine or equipment conforms to any applicable federal emission standards for new engines, or any other information that such manufacturer deems necessary for, or useful to, the proper operation and satisfactory maintenance of the equipment or engine.

(e) As used in these specifications, readily visible to the average person shall mean that the label shall be readable from a distance of eighteen inches (46 centimeters) without any obstructions from equipment or engine parts (including all manufacturer available optional equipment) except for flexible parts (e.g., vacuum hoses, ignition wires) that can be moved out of the way without disconnection. Alternatively, information required by these specifications to be printed on the label shall be no smaller than 8 point type size provided that no equipment or engine parts (including all manufacturer available optional equipment), except for flexible parts, obstruct the label.

(f) The labels and any adhesives used shall be designed to withstand, for the engine's or equipment's total expected life, typical equipment environmental conditions in the area where the label is attached. Typical equipment environmental conditions shall include, but are not limited to, exposure to engine fuels, lubricants and coolants (e.g., diesel fuel, motor oil, water, ethylene glycol). The manufacturer shall submit, with its certification application, a statement attesting that its labels comply with these requirements.

(g) The manufacturer shall obtain approval from the Executive Officer for all label formats and locations prior to use. Approval of the specific maintenance settings is not required; however, the format for all such settings and tolerances, if any, is subject to review. If the Executive Officer finds that the information on the label is vague or subject to misinterpretation, or that the location does not comply with these

specifications, he or she may require that the label or its location be modified accordingly.

(h) Samples of all actual labels used within an engine family shall be submitted to the Executive Officer within thirty days after the start of production.

(i) The Executive Officer may approve alternate label locations or may, upon request, waive or modify the label content requirements provided that the intent of these specifications is met.

(j) The manufacturer of any engine shall furnish to the Executive Officer, at the beginning of the model year, any engine identification number coding system which identifies whether such engine(s) are covered by an Executive Order.

(k) If the Executive Officer finds any engine (or equipment) manufacturer using labels which are different from those approved or which do not substantially comply with the readability or durability requirements set forth in these specifications, the manufacturer shall be subject to being enjoined from any further sales of such products in the State of California pursuant to Section 43017 of the Health and Safety Code. Prior to seeking to enjoin a manufacturer, the Executive Officer shall consider any information provided by the manufacturer.

(l) An emission control information label shall not be altered or removed from an engine, subject to civil penalty under State law, except that a dealer or distributor may remove an incorrect label, prior to the transfer of title of the engine to an ultimate purchaser, and replace the incorrect label with the correct label supplied by the certifying manufacturer or an authorized agent. For the purpose of this section, an incorrect label means an emission control information label that was affixed to an engine in good faith by the certifying manufacturer or authorized agent, but which fails to accurately describe the engine's emission performance as required under this Article due to unintentional or clerical error. In this context, good faith means an honest intent to act without seeking to gain an unfair advantage or to circumvent the regulations. Notwithstanding, an emission control label may be removed and replaced according to the labeling provisions for rebuilt engines in §2423(l). For new replacement engines manufactured in accordance with the provisions of §2423(j), a dealer or distributor may affix supplemental labels, prior to the transfer of title of the engine to an ultimate purchaser, as allowed in §2423(j)(1). Other provisions in §1068.101(b)(7) of the 2011 and Later Test Procedures, Part I-E, may also apply.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104 and 43105, Health and Safety Code.

§ 2425. Defects Warranty Requirements for 1996 and Later Off-Road Compression-Ignition Engines.

(a) *Applicability.* This section shall apply to new 1996-1999 model year heavy-duty off-road compression-ignition engines and new 2000 and later model year compression-ignition engines. For 2011 and later model year compression-ignition engines the requirements in §1039.120 and §1039.125 of the 2011 and Later Test Procedures, Part I-D, shall also apply. The warranty period shall begin on the date the engine or equipment is delivered to an ultimate purchaser. The use of alternative fuels shall not void the warranties on any engine certified to use such fuel.

(b) *General Emissions Warranty Coverage.* The manufacturer of each off-road compression-ignition engine shall warrant to the ultimate purchaser and each subsequent purchaser that the engine is:

(1) Designed, built, and equipped so as to conform with all applicable regulations adopted by the Air Resources Board pursuant to its authority in Chapters 1 and 2, Part 5, Division 26 of the Health and Safety Code; and

(2) Free from defects in materials and workmanship which cause the failure of a warranted part to be identical in all material respects to the part as described in the engine manufacturer's application for certification for a period of five years or 3,000 hours of operation, whichever occurs first, for all engines rated at 19kW and greater, except as noted below. In the absence of a device to measure hours of use, the engine shall be warranted for a period of five years. For all engines rated less than 19kW, and for constant-speed engines rated under 37kW with rated speeds higher than or equal to 3,000 rpm, the period of two years or 1,500 hours of operation, whichever occurs first, shall apply. In the absence of a device to measure hours of use, the engine shall be warranted for a period of two years.

(c) The warranty on emissions-related parts shall be interpreted as follows:

(1) Any warranted part which is not scheduled for replacement as required maintenance in the written instructions required by Subsection (e) shall be warranted for the warranty period defined in Subsection (b)(2). If any such part fails during the period of warranty coverage, it shall be repaired or replaced by the engine manufacturer according to Subsection (4) below. Any such part repaired or replaced under the warranty shall be warranted for the remaining warranty period.

(2) Any warranted part which is scheduled only for regular inspection in the written instructions required by Subsection (e) shall be warranted for the warranty period defined in Subsection (b)(2). A statement in such written instructions to the effect of "repair or replace as necessary" shall not reduce the period of warranty coverage. Any such part repaired or replaced under warranty shall be warranted for the remaining warranty period.

(3) Any warranted part which is scheduled for replacement as required maintenance in the written instructions required in Subsection (e) shall be warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part shall be repaired or replaced by the engine manufacturer according to Subsection (4) below. Any such part repaired or replaced under warranty shall be warranted for the remainder of the period prior to the first scheduled replacement point for the part.

(4) Repair or replacement of any warranted part under the warranty provisions of this article shall be performed at no charge to the owner at a warranty station.

(5) Notwithstanding the provisions of Subsection (4) above, warranty services or repairs shall be provided at all manufacturer distribution centers that are franchised to service the subject engines.

(6) The owner shall not be charged for diagnostic labor that leads to the determination that a warranted part is in fact defective, provided that such diagnostic work is performed at a warranty station.

(7) The engine manufacturer shall be liable for damages to other engine components proximately caused by a failure under warranty of any warranted part.

(8) Throughout the engine's warranty period defined in Subsection (b)(2), the engine manufacturer shall maintain a supply of warranted parts sufficient to meet the expected demand for such parts.

(9) Any replacement part, as defined in Section 1900(b)(13), Title 13, may be used in the performance of any maintenance or repairs and must be provided without charge to the owner. It is not necessary for replacement parts to be the same brand or by the same manufacturer as the original part sold with the engine. Such use shall not reduce the warranty obligations of the engine manufacturer.

(10) Add-on or modified parts, as defined in Section 1900(b)(1) and (b)(10), Title 13, that are not exempted by the Air Resources Board may not be used. The use of any non-exempted add-on or modified parts shall be grounds for disallowing a warranty claim made in accordance with this article. The engine manufacturer shall not be liable under this article to warrant failures of warranted parts caused by the use of a non-exempted add-on or modified part.

(11) The Executive Officer may request and, in such case, the engine manufacturer shall provide, any documents which describe that manufacturer's warranty procedures or policies.

(d) Each manufacturer shall include a copy of the following emission warranty parts list with each new engine, using those portions of the list applicable to the engine.

(1) Fuel Metering System
- (A) Fuel injection system.
- (B) Air/fuel ratio feedback and control system.
- (C) Cold start enrichment system.

(2) Air Induction System
- (A) Controlled hot air intake system.
- (B) Intake manifold.
- (C) Heat Riser Valve and Assembly.
- (D) Turbocharger/Supercharger Systems.
- (E) Charge Air Cooling Systems.

(3) Exhaust Gas Recirculation (EGR) System
- (A) EGR valve body, and carburetor spacer if applicable.
- (B) EGR rate feedback and control system.

(4) Air injection System
- (A) Air pump or pulse valve.
- (B) Valves affecting distribution of flow.
- (C) Distribution manifold.

(5) Catalyst or Thermal Reactor System
- (A) Catalytic converter.
- (B) Thermal reactor.
- (C) Exhaust manifold.

(6) Particulate Controls
- (A) Traps, filters, precipitators, and any other device used to capture particulate emissions.
- (B) Regenerators, oxidizers, fuel additive devices, and any other device used to regenerate or aid in the regeneration of the particulate control device.
- (C) Control Device Enclosures and Manifolding.
- (D) Smoke Puff Limiters.

(7) Advanced Oxides of Nitrogen (NOx) Controls
- (A) NOx Adsorbers
- (B) Lean NOx Catalysts
- (C) Selective Catalyst Reduction
- (D) Reductant (urea/fuel) containers/dispensing systems

(8) Positive Crankcase Ventilation (PCV) System.
- (A) PCV Valve.
- (B) Oil Filler Cap.

(9) Miscellaneous items Used in Above Systems
- (A) Vacuum, temperature, and time sensitive valves and switches.
- (B) Electronic control units, sensors, solenoids, and wiring harnesses.

(C) Hoses, belts, connectors, assemblies, clamps, fittings, tubing, sealing gaskets or devices, and mounting hardware.
(D) Pulleys, belts and idlers.
(E) Emission Control Information Labels.
(F) Any other part with the primary purpose of reducing emissions or that can increase emissions during failure without significantly degrading engine performance.

(e) Each manufacturer shall furnish with each new engine written instructions for the maintenance and use of the engine by the owner. The instructions shall be consistent with this article and applicable regulations contained herein.

(f) Each manufacturer shall submit the documents required by Subsections (d) and (e) with the manufacturer's preliminary application for engine certification for approval by the Executive Officer. Approval by the Executive Officer of the documents required by Subsections (d) and (e) shall be a condition of certification. The Executive Officer shall approve or disapprove the documents required by Subsections (d) and (e) within 90 days of the date such documents are received from the manufacturer. (Title 17, California Code of Regulations (CCR), Section 60030.) Any disapproval shall be accompanied by a statement of the reasons therefore. In the event of disapproval, the manufacturer may file for an adjudicative hearing pursuant to Title 17, California Code of Regulations Division 3, Chapter 1, Subchapter 1.25, Articles 1 and 2, to review the decision of the Executive Officer.

(g) In the application, each manufacturer shall include a statement concerning proper maintenance of the engine to maximize emissions performance. The statement shall include, but not be limited to, information on air filter care and replacement schedule, proper fueling and fuel mixing, engine maintenance, and a maintenance schedule to ensure that the owner returns to a servicing center to check for deposits, debris build-up, etc.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 43104 and 43105, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102 and 43205.5, Health and Safety Code.

§ 2425.1 Defect Investigation and Reporting Requirements.

(a) *Applicability.* This section shall apply to new off-road compression-ignition engines subject to the standards in Section 2423 (b)(1)(B) and the incorporated 2008-2010 or 2011 and Later Test Procedures as applicable, and shall address defects for any of the emission-related components, or systems containing the components listed in Section 2425(d)(1).

(b) *General requirements.* Engine manufacturers shall investigate their engines that have been introduced into commerce in California for incorrect, improperly installed, or otherwise defective emission-related components or systems, and shall submit a report to the ARB based on federal triggering thresholds documenting these activities, as required, and their findings. If available, California-specific incidence rates shall also be included in this report.

(c) *Investigation and reporting procedures.* Engine manufacturers shall perform the investigation and reporting procedures specified in Part 1068, Subpart F of the 2008-2010 Test Procedures or Part I-E of the 2011 and Later Test Procedures as applicable.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 43104 and 43105, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102 and 43205.5, Health and Safety Code.

§ 2426. Emission Control System Warranty Statement.

(a) Each manufacturer shall furnish a copy of the following statement with each new 1996-1999 model year heavy-duty off-road compression-ignition engine and each new 2011 and later model year compression-ignition engine, using those portions of the statement applicable to the engine.

CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT

YOUR WARRANTY RIGHTS AND OBLIGATIONS

The **California Air Resources Board** (and manufacturer's name, optional) is pleased to explain the **emission control system warranty** on your **(year)** engine. In California, new heavy-duty off-road engines must be designed, built, and equipped to meet the State's stringent anti-smog standards. (Manufacturer's name) must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the fuel-injection system and the air induction system. Also included may be hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, (manufacturer's name) will repair your heavy-duty off-road engine at no cost to you including diagnosis, parts, and labor.

MANUFACTURER'S WARRANTY COVERAGE:

The **(year)** and later heavy-duty off-road engines are warranted for **(warranty period)**. If any emission-related part on your engine is defective, the part will be repaired or replaced by (manufacturer's name).

OWNER'S WARRANTY RESPONSIBILITIES:

- As the ~~heavy-duty~~ off-road engine owner, you are responsible for the performance of the **required maintenance listed in your owner's manual**. (Manufacturer's name) recommends that you retain all receipts covering maintenance on your ~~heavy-duty~~ off-road engine, but (manufacturer's name) cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

- As the ~~heavy-duty~~ off-road engine owner, you should however be aware that (manufacturer's name) may deny you warranty coverage if your ~~heavy-duty~~ off-road engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

— Your engine is designed to operate on (fuel) only. Use of any other fuel may result in your engine no longer operating in compliance with California's emissions requirements.

— You are responsible for initiating the warranty process. The ARB suggests that you present your ~~heavy-duty~~ off-road engine to a (manufacturer's name) dealer as soon as a problem exists. The warranty repairs should be completed by the dealer as expeditiously as possible.

If you have any questions regarding your warranty rights and responsibilities, you should contact (Insert chosen manufacturer's contact) at **1-XXX-XXX-XXXX**.

(b) For 1996-1999 model year heavy-duty off-road compression-ignition engines and 2011 and later model year compression-ignition engines, each manufacturer shall furnish with each new engine a warranty statement which generally describes the obligations and rights of the engine manufacturer and owner under this article. Engine manufacturers shall also include in the warranty statement a phone number the customer may use to obtain their nearest franchised service center.

(c) Each manufacturer shall submit the documents required by Subsections (a) and (b) with the manufacturer's preliminary application for new engine certification for approval by the Executive Officer. The Executive Officer may reject or require modification of the documents to the extent the submitted documents do not satisfy the requirements of Subsections (a) and (b). Approval by the Executive Officer of the documents required by Subsections (a) and (b) shall be a condition of certification. The Executive Officer shall approve or disapprove the documents required by Subsections (a) and (b) within 90 days of the date such documents are received from the manufacturer. Any disapproval shall be accompanied by a statement of the reasons therefore. In the event of disapproval, the manufacturer may petition the Board to review the decision of the Executive Officer.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102 and 43205.5, Health and Safety Code.

§ 2427. Production Engine Testing, Selection, Evaluation, and Enforcement Action.

(a) *Compliance Test Procedures.*

(1) These procedures are applicable to the 1996-1999 model year heavy-duty off-road compression-ignition engine family groups (as defined in Sections 3 and 11 of the 1996-1999 Heavy-Duty Test Procedures) or any subgroups within an engine family group selected for compliance testing pursuant to this section.

(2) The Executive Officer may, with respect to any new engine family group or subgroup being sold, offered for sale, or manufactured for sale in California, order an engine manufacturer to make available for compliance testing and/or inspection a reasonable number of engines, and may direct that the engines be delivered to the state board at the Haagen-Smit Laboratory, 9528 Telstar Avenue, El Monte, California or where specified by the Executive Officer. The Executive Officer may also, with respect to any new engine family group or subgroup being sold, offered for sale, or manufactured for sale in California, have a manufacturer compliance test and/or inspect a reasonable number of engines at the manufacturer's facility under the supervision of an ARB Enforcement Officer. Engines shall be representatively selected from sources specified by the Executive Officer according to a method approved by him/her, which insofar as practical shall exclude engines which would result in an unreasonable disruption of the manufacturer's distribution system. To the extent practical, the Executive Officer shall test a representative configuration (as defined in the 1996-1999 Heavy-Duty Test Procedures) from the engine family group in order to minimize manufacturers' expense and inconvenience in testing different engine configurations.

A subgroup of an engine family group may be selected for compliance testing only if the Executive Officer has reason to believe that the emissions characteristics of that subgroup are substantially in excess of the evaluation of the emissions of the engine family group as a whole.

(3) For all 1996-1999 heavy-duty off-road compression-ignition engines selected for compliance testing, the selection and testing of engines and the evaluation of data shall be made in accordance with the procedures set forth herein.

(4) For manufacturers that have more than one engine family group, the Air Resources Board or its designated laboratory shall procure and test at the manufacturer's expense no more than one engine family group per year, if compliance testing is required.

Notwithstanding the above, if a manufacturer fails to demonstrate compliance with the emission standards after one engine family group has been tested, the ARB or its designated laboratory may test additional engine family groups at the manufacturer's expense, until compliance is demonstrated on one engine family group or all of a

manufacturer's engine family groups have been tested. However, the ARB may conduct engine enforcement testing pursuant to the engine test procedures specified in Section 2423, at its own expense. In such an instance, the Executive Officer shall order testing only in those cases where evidence such as quality audit test data or in-use test data indicate that engines may not be in compliance.

(5) All testing shall be conducted in accordance with the applicable model year certification emission test procedures. Break-in before testing may be performed on test engines to the same extent it is performed on assembly-line quality audit testing engines (See Subsection (b)). No break-in or modifications, adjustments, or special preparation or maintenance will be allowed on engines chosen for compliance testing without the written consent of the Executive Officer. Such consent shall not be unreasonably withheld where such adjustment or alteration is required to render the engine testable and reasonably operative.

(6) If the manufacturer elects to specify a different break-in or adjustments, they will be performed by the manufacturer under the supervision of ARB personnel.

(7) Correction of damage or maladjustment which may reasonably be found to have resulted from shipment of the engine is permitted only after testing the engine, except where 100 percent of the manufacturer's production is given that inspection or maintenance by the manufacturer's own personnel. Exceptions are allowed in the cases where the damage results in the engine being unsafe to operate, inoperable, or unable to complete the emission test. Additionally, an exception is allowed if the damage results in engine performance deficiencies which would be obvious in customer service and which would cause the customer to seek repair of the engine. The manufacturer may request that the engine be repaired from shipping damage, and be retested. If the Executive Officer concurs, the engine may be retested, and the original test results may be replaced by the after-repair test results.

(8) Engines shall be representatively chosen from the selected engine family group or subgroup. Manufacturers shall indicate which sampling plan (as described in paragraphs (9) and (10), below) they prefer to use prior to the start of testing. Once testing has begun, manufacturers may not switch to the other sampling plan; the generated test results will be final. Each chosen engine shall be tested according to the 1996-1999 Heavy-Duty Test Procedures to determine its emissions. Unique specialty hardware and personnel normally necessary to prepare the engine for the performance of the test as set forth in the applicable test procedures shall be supplied by the manufacturer within seven days after request. Failure to supply this unique specialty hardware or personnel may not be used by the manufacturer as a cause for invalidation of the subsequent tests.

(9) *Primary Sampling Plan.*

(A) Engines shall be tested in groups of five until a "Pass" or "Fail" decision is reached for each pollutant independently for the engine family group or subgroup in accordance with the following table:

Number of Engines Tested	*Decide "Fail" If "U" is greater than or equal to*	*Decide "Pass" If "U" is less than or equal to*
5	2.18	-0.13
10	2.11	0.51
15	2.18	0.88
20	2.29	1.16

where:

$$U = \frac{\sum_{i=1}^{n} (x_i - \mu_0)}{\left(\sum_{i=1}^{n} (x_i - \mu_0^2)\right)^{0.5}}$$

x_i = the projected emissions of one pollutant for the *i*th engine tested.

μ_0 = the applicable model year emission standard for that pollutant.

n = the number of engines tested.

(B) The Executive Officer shall find that a group of engines has failed the compliance testing pursuant to the above table if he or she finds that the average emissions of the engines within the selected engine family group or subgroup exceed the applicable model year new engine emission standard for at least one pollutant.

(C) If no decision can be reached after 20 engines have been tested, the Executive Officer shall not make a "Fail" decision for the selected engine family group or subgroup on the basis of these 20 tests alone. Under these circumstances the Executive Officer shall elect to test 10 additional engines. If the average emissions from the 30 engines tested exceed any one of the exhaust emission standards for which a "Pass" decision has not been previously made, the Executive Officer shall render a "Fail" decision.

(10) *Alternate Sampling Plan for Low Volume Engine Family Groups.*

Any manufacturer subject to new engine compliance testing on an engine family group with a sales volume of less than 2000 engines per year may use the alternative sampling and testing schedule below.

Number of Engines Tested	*Decide "Fail" If number of failed engines is greater than or equal to*	*Decide "Pass" If number of failed engines is less than or equal to*
1	No Failure Decision	No Passing Decision
2	No Failure Decision	0
3	3	0
4	4	1
5	4	1
6	5	2
7	5	2
8	6	3
9	6	4
10	6	5

(11) If the Executive Officer determines, in accordance with the procedures set forth herein, that an engine family group, engine family, or any subgroup within an engine family exceeds the emission standards for one or more pollutants, the manufacturer may be subject to being enjoined from any further sales of such products in the State of California pursuant to Section 43017 of the Health and Safety Code. Prior to seeking to enjoin a manufacturer, the Executive Officer shall consider quality audit test results, if any, and any additional test data or other information provided by the manufacturers.

(12) Engines selected for inspection shall be checked to verify the presence of those emissions-related components specified in the manufacturer's application for certification, and for the accuracy of any adjustments, part numbers and labels specified in that application. If any engine selected for inspection fails to conform to any applicable law in Part 5 (commencing with Section 43000) of Division 26 of the Health and Safety Code, or any regulation adopted by the state board pursuant thereto, other than an emissions standard applied to new engines to determine "certification" as specified in Chapter 9, the Executive Officer shall notify the manufacturer and may seek to enjoin the manufacturer from any further sales of such products in the State of California pursuant to Section 43017 of the Health and Safety Code. Prior to seeking to enjoin a manufacturer, the Executive Officer shall consider any information provided by the manufacturer.

(b) *Quality-Audit Test Procedures.*

(1) The 1996-1999 model year heavy-duty off-road compression-ignition engines certified for sale in California shall be subject to the Quality-Audit requirements specified herein. Each manufacturer shall use the quality-audit test procedures specified herein.

(2) These procedures specify the quality-audit test procedures in conjunction with the 1996-1999 Heavy-Duty Test Procedures. An engine is in compliance with these quality-audit standards and test procedures only when all portions of these quality-audit test procedures are fulfilled.

(3) Air Resources Board (ARB) personnel and mobile laboratories shall have access to engine or equipment assembly plants, distribution facilities, and test facilities for the purpose of engine selection, testing, and observation. Scheduling of access shall be arranged with the designated manufacturer's representative and shall not unreasonably disturb normal operations (See Section 6 of the 1996-1999 Heavy-Duty Test Procedures).

(4) *Applicability.*

These procedures shall apply to all certified 1996-1999 model year heavy-duty off-road compression-ignition engine family groups.

If a manufacturer cannot provide actual California sales data, it shall provide its total production and an estimate of California sales. The manufacturer shall also provide supporting material for its estimate.

(5) *Engine Sample Selection.*

For each family group with California sales volumes of 150 units or more per year, the manufacturer shall select for quality audit testing a representative sample of three engines or one percent of production, whichever is greater, from the highest sales volume engine family within the entire engine family group. For engine family groups with California sales volumes of less than 150 units per year, no testing shall be required unless requested by the Executive Officer based upon information and belief that such engine family groups are in noncompliance with applicable regulations. Each selected engine for quality-audit testing must pass the inspection test, by being equipped with the appropriate emission control systems certified by the ARB. The procedure for selecting engines must be submitted to the Chief, Mobile Source Division, 9528 Telstar Avenue, El Monte, CA, 91731, prior to the start of production for the 1996 model year.

(6) *Engine Preparation and Preconditioning.*

(A) The engine shall be tested after the manufacturer has determined that the emissions have stabilized. Engine manufacturers shall report the break-in schedule used on each test engine.

The manufacturer shall submit to the Executive Officer the schedule for hours of use accumulation or engine run-in and any changes to the schedule with each quarterly report.

(B) If an engine is shipped to a remote facility for quality-audit testing, and adjustment or repair is necessary because of such shipment, the manufacturer shall perform the necessary adjustments or repairs only after the initial test of the engine. Exceptions are allowed in the cases where the damage results in the engine being unsafe to operate, inoperable, or unable to complete the emission test. Additionally, an exception is allowed if the damage results in engine performance deficiencies which would be obvious in customer service and which would cause the customer to seek repair of the engine.

Manufacturers shall report to the Executive Officer in the quarterly report, all adjustments or repairs performed on engines prior to each test. In the event a retest is performed, an application may be made to the Executive Officer, within ten days of the emission test, for permission to substitute the after-repair test results for the original test results. When requested by the manufacturer, the Executive Officer will either affirm or deny the application within ten working days from receipt of the request.

(C) If a manufacturer determines that the emission test results of an engine are invalid, the engine must be retested. Emission results from all tests shall be reported. The manufacturer shall include a detailed report on the reasons for each invalidated test in the quarterly report.

(7) *Quality-Audit Engine Selection Criteria.*

(A) Engines shall be representatively selected.

(B) At the end of each calendar quarter, all of the data accumulated during the quarter shall be reported to the Executive Officer. Upon accumulation of sufficient data, the compliance of the engine family group with the emission standards is determined.

(8) *Standards and Test Procedures; Evaluation.*

The exhaust sampling and analytical procedures shall be those described in the 1996-1999 Heavy-Duty Test Procedures. An engine family group is considered to have failed the quality audit test if the average emissions do not comply with the applicable certification standards. Any corrective action to bring the engines into compliance with the standards must be applied to all engines in the engine family group reasonably expected to be in noncompliance based on the audit data and other relevant information.

(9) *Reports.*

Each engine manufacturer shall submit a report to the ARB within 45 calendar days of the end of each calendar quarter and of the model year. More frequent reports may be required if the Executive Officer invokes this section at the end of each month. Each engine manufacturer shall review the test results of each engine family group at the end of each month.

The quarterly report shall include the following:

(A) The total production and sample size for each engine family group.

(B) A description of each test engine (i.e., date of test, engine family group, engine size, engine identification number, fuel system, engine code or calibration number, and test location).

(C) The break-in schedule used on each test engine.

(D) The exhaust emission data for HC, CO, NO_x and PM for each test engine.

The data reported shall be rounded to one significant figure beyond the number of significant figures in the applicable standard as follows for all engines:

HC	CO	NO_x	PM
.XX	.XX	.XX	.XXX

(E) The retest emissions data, as described in paragraph (b)(6)(C) above for any engine failing the initial test, and description of the corrective measures taken, including specific components replaced or adjusted.

(F) A statistical analysis of the quality-audit test results stating:

1. Number of engines tested.
2. Average emissions and standard deviations of the sample for HC, CO, NO_x, and PM.

(G) All aborted test data and reasons for any aborted tests.

(10) When assembly-line engines exceed an emission standard, as set forth herein, or when data submitted by the manufacturer indicates that assembly-line quality-audit testing is being improperly performed, the manufacturer may be subject to being enjoined from any further sales of such products in the State of California pursuant to Section 43017 of the Health and Safety Code. Prior to seeking to enjoin a manufacturer, the Executive Officer shall consider any information provided by the manufacturer, including any corrective action to the noncomplying engine family group. Enforcement penalties shall be imposed only for egregious violations (e.g., those

situations where emissions from a few engines significantly exceed emission standards, or where the number of engines exceeding the emission standards are significant).

(c) *Selective Enforcement Audit.*

(1)(A) The 2000 and later model year Tier 1, Tier 2, and Tier 3 off-road compression-ignition engines certified for sale in California shall be subject to the Selective Enforcement Audit requirements specified in Subpart F of the 2000 Plus Limited Test Procedures.

(B) The 2008 and later model year Tier 4 off-road compression-ignition engines certified for sale in California shall be subject to the Selective Enforcement Audit requirements specified in Subpart E of Part 1068 of the 2008-2010 Test Procedures or Part I-E of the 2011 and Later Test Procedures as applicable.

(2) These procedures specify the Selective Enforcement Audit test procedures in conjunction with the 2000 Plus Limited Test Procedures and the 2000 and Later Test Procedures. An engine is in compliance with these Selective Enforcement Audit standards and test procedures only when all portions of these Selective Enforcement Audit test procedures are fulfilled.

(3) Air Resources Board (ARB) personnel and mobile laboratories shall have access to engine or equipment assembly plants, distribution facilities, and test facilities for the purpose of engine selection, testing, and observation. Scheduling of access shall be arranged with the designated manufacturer's representative and shall not unreasonably disturb normal operations.

(d) Any manufacturer obtaining certification under this part shall supply to the Executive Officer, upon request, a reasonable number of production engines selected by the Executive Officer which are representative of the engines, emission control systems, fuel systems, and transmissions offered and typical of production models available for sale under the certificate. These engines shall be supplied for testing at such time and place and for such reasonable periods as the Executive Officer may require. Heavy-duty engines supplied under this paragraph may be required to be mounted in chassis and appropriately equipped for operation on a chassis dynamometer.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43102, 43104 and 43105, Health and Safety Code. Reference: Sections 43013, 43017, 43018, 43101, 43102, 43104 and 43210-43212, Health and Safety Code.

APPENDIX C

PROPOSED REGULATION ORDER

Large Spark-Ignition Engines

Title 13 California Code of Regulations

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** Amendments to Existing Regulations **

1. Amend section 2433, title 13, California Code of Regulations, to read as follows:

(Note: [Section 2433]. The proposed amendments are shown in underline to indicate additions and strikeout to indicate deletions from the existing regulatory text.)

§ 2433. Emission Standards and Test Procedures–Off-Road Large Spark-Ignition Engines.

* * * * *

(c) *Test Procedures.* The test procedures for determining certification and compliance with the standards for exhaust emissions from new model year 2001 through 2006 off-road LSI engines with engine displacement greater than 1.0 liter sold in the state are set forth in "California Exhaust Emission Standards and Test Procedures for New 2001 and Later through 2006 Off-Road Large Spark-ignition Engines, Parts I and II," adopted September 1, 1999, and as last amended March 2, 2007.

The test procedures for determining certification and compliance with the standards for exhaust and evaporative emissions from new model year 2007 through 2009 off-road LSI engines with engine displacement greater than 1.0 liter sold in the state are set forth in "California Exhaust and Evaporative Emission Standards and Test Procedures for New 2007 through 2009 Off-Road Large Spark-ignition Engines (2007-2009 Test Procedure 1048)," adopted March 2, 2007.

The test procedures for determining certification and compliance with the standards for exhaust and evaporative emissions from new model year 2010 and subsequent off-road LSI engines with engine displacement greater than 1.0 liter sold in the state are set forth in "California Exhaust and Evaporative Emission Standards and Test Procedures for New 2010 and Later Off-Road Large Spark-ignition Engines (2010 and Later Test Procedure 1048)," adopted March 2, 2007, and last amended ~~November 21, 2008~~ <insert date of amendment>.

The test procedures for determining compliance with the standards for exhaust and evaporative emissions for new model year 2007 and subsequent off-road LSI engines with engine displacement greater than 1.0 liter sold in the state are set forth in the "California Exhaust and Evaporative Emission Standards and Test Procedures for New 2007 and Later Off-Road Large Spark-Ignition Engines (Test Procedures 1065 and 1068)", adopted March 2, 2007, and last amended <insert date of amendment>.

(d) (1) The test procedures for determining certification and compliance with the standards for exhaust emissions from new LSI engines with an engine displacement less than or equal to 1.0 liter sold in the state are set forth in "California Exhaust Emission Standards and Test Procedures for 1995-2004 Small Off-Road Engines," as last amended July 26, 2004; ~~or~~ "California Exhaust Emission Standards and Test Procedures for 2005-2012 ~~and Later~~ Small Off-Road Engines," adopted July 26, 2004, and last amended <insert date of amendment>; and, "California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines, adopted <insert date of adoption>.

* * * * *

NOTE: Authority cited: sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.
Reference: sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150, 43151, 43152, 43153, 43154, 43205.5, 43210, 43210.5, 43211 and 43212, Health and Safety Code.

APPENDIX D

PROPOSED REGULATION ORDER

In-Use Compliance Requirements

for Retrofits of Large Spark-Ignition Engines

Title 13 California Code of Regulations

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** Amendments to Existing Regulations **

1. Amend section 2783, title 13, California Code of Regulations, to read as follows:

(Note: [Section 2783]. The proposed amendments are shown in underline to indicate additions and strikeout to indicate deletions from the existing regulatory text.

§ 2783. Emissions Reduction Testing Requirements.

* * * * *

(d) Test Fuel.

(1) The test fuel used shall be consistent with the fuel specifications as outlined in the "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium- Duty Vehicles," as incorporated by reference in section 1961(d). If the engine is tested using the U.S. EPA test fuel, as outlined in 40 CFR Part 1065, the manufacturer shall demonstrate that the emission results are consistent with these Test Procedures.

(2) Gasoline-fueled, large spark-ignition engines that are tested during the 2013-2018 calendar years have the option of using the test fuel referenced in section 2783(d)(3) for demonstrating exhaust emission compliance with the requirements of this section.

(3) Gasoline-fueled, large spark-ignition engines that are tested during 2019 and later calendar years must be exhaust emission tested using a test fuel must that is consistent with the fuel specifications as outlined in title 13, section 1961.2; and, the "California Exhaust Emission Standards and Test Procedures for 2015 and Subsequent Model Passenger Cars, Light Duty Trucks, and Medium Duty Vehicles," adopted <insert date of adoption>, and incorporated by reference herein. The test fuel specifications should remain consistent from batch to batch.

~~(2)~~(4) During all engine tests, the engine shall employ lubricating oil consistent with the engine manufacturer's specifications for that particular engine. These specifications shall be recorded and declared in the verification application.

* * * * *

NOTE: Authority cited: Sections 39002, 39003, 39500, 39600, 39601, 39650-39675, 40000, 43000, 43000.5, 43011, 43013, 43018, 43105, 43600 and 43700, Health and Safety Code.

Reference: Sections: 43000, 43009.5, 43013, 43018, 43101, 43104, 43105, 43106, 43107, 43204, 43205 and 43205.5, Health and Safety Code.

** Amendments to Existing Regulations **

2. Amend section 2784, title 13, California Code of Regulations, to read as follows:

(Note: [Section 2784]. The proposed amendments are shown in underline to indicate additions and strikeout to indicate deletions from the existing regulatory text.

§ 2784. Durability Demonstration Requirements.

* * * * *

(c) Test Fuel.

(1) Except as outlined in (2), ~~T~~the test fuel used shall be consistent with the fuel specifications as outlined in the "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium- Duty Vehicles," as incorporated by reference in section 1961(d). If the engine is tested using the U.S. EPA test fuel, as outlined in 40 CFR Part 1065, the manufacturer shall demonstrate that the emission results are consistent with ARB Test Procedures. Manufacturers can use "commercially available fuels" to accumulate service hours but emission testing must be conducted using test fuel as specified in this section.

(2) Gasoline-fueled, large spark-ignition engines that are tested during the 2013-2018 calendar years have the option of using the test fuel referenced in section 2784(c)(3) for demonstrating exhaust emission compliance with the requirements of this section.

(3) Gasoline-fueled, large spark-ignition engines that are tested during 2019 and later calendar years must be exhaust emission tested using a test fuel must that is consistent with the fuel specifications as outlined in title 13, section 1961.2; and, the "California Exhaust Emission Standards and Test Procedures for 2015 and Subsequent Model Passenger Cars, Light Duty Trucks, and Medium Duty Vehicles," adopted <insert date of adoption>, and incorporated by reference herein. The test fuel specifications should remain consistent from batch to batch.

~~(2)~~(4) During all engine tests, the engine shall employ lubricating oil consistent with the engine manufacturer's specifications for that particular engine. These specifications shall be recorded and declared in the verification application.

* * * * *

NOTE: Authority cited: 39002, 39003, 39500, 39600, 39601, 39650-39675, 40000, 43000, 43000.5, 43011, 43013, 43018, 43105, 43600 and 43700, Health and Safety Code.
Reference: Sections: 43000, 43009.5, 43013, 43018, 43101, 43104, 43105, 43106, 43107, 43204, 43205 and 43205.5, Health and Safety Code.

APPENDIX E

PROPOSED REGULATION ORDER

New Off-Highway Recreational Vehicles and Engines

Title 13, California Code of Regulations

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** Amendments to Existing Regulations **

1. Amend section 2412, title 13, California Code of Regulations, to read as follows:

(Note: [Section 2412]. The proposed amendments are shown in underline to indicate additions and strikeout to indicate deletions from the existing regulatory text.

§ 2412. Emission Standards and Test Procedures – New Off-Highway Recreational Vehicles and Engines.

* * * * *

(c)(1) The test procedures for determining certification and compliance with the standards for exhaust and evaporative emissions from new off-road motorcycles, all-terrain vehicles, and golf carts are set forth in "California Exhaust Emission Standards and Test Procedures for 1997 and Later Off-Highway Recreational Vehicles and Engines," adopted November 23, 1994, and last amended ~~August 15, 2007~~<insert date of amendment>, which are hereby incorporated by reference herein and which in turn incorporate by reference Subparts E and F, Part 86, and Subparts C and F, Part 1051, Title 40, Code of Federal Regulations. Manufacturers of the following are not required to perform emissions testing, but must file an application of certification and comply with the administrative requirements outlined in the procedures to certify their vehicles for sale in California:

(A) Golf carts.

(B) Off-road motorcycles and all-terrain vehicles, and engines used in such vehicles, as described in subsection (f) below.

(2) The test procedures for determining certification and compliance with the standards for exhaust emissions from all-terrain vehicle engines (those engines utilizing the optional standards noted in (b) above) are set forth in "California Exhaust Emission Standards and Test Procedures for 1995-2004 Small Off-Road Engines," adopted March 20, 1992, and last amended ~~July 26, 2004~~<insert date of amendment>.

(d)(1) For chassis-based testing, compliance with a standard to be applied as a "corporate average" shall be determined as follows:

* * * * *

STD_{jx} = The manufacturer designated HC exhaust emission standard for engine family j in model year x, which shall be determined by the manufacturer subject to the following conditions: (1) no individual engine family exhaust emission standard shall exceed 2.5 g/km, and (2) no engine family designation or engine family exhaust emission standard

shall be amended in a model year after the engine family is certified for the model year, and (3) prior to sale or offering for sale in California, each engine family shall be certified in accordance with "California Exhaust Emissions Standards and Test Procedures for 1997 and Later Off-highway Recreational Vehicles and Engines" adopted November 23, 1994 and last amended <insert date of amendment>, and shall be required to meet the manufacturer's designated HC exhaust emission standard as a condition of the certification Executive Order. Prior to certification the manufacturer shall also submit estimated production volumes for each engine family to be offered for sale in California.

* * * * *

NOTE: Authority cited: Sections 39600, 39601, 43013, 43018, and 43107, Health and Safety Code.
Reference: Sections 43013, 43018, 43102, 43104, and 43107, Health and Safety Code.

APPENDIX F

PROPOSED REGULATION ORDER

Recreational Marine Spark-Ignition Engines

Title 13 California Code of Regulations

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** Amendments to Existing Regulations **

1. Amend section 2447, title 13, California Code of Regulations, to read as follows:

(Note: [Section 2447]. The proposed amendments are shown in underline to indicate additions and strikeout to indicate deletions from the existing regulatory text.)

§ 2447. California Exhaust Emission Standards and Test Procedures for 2001 Model Year and Later Spark-Ignition Marine Engines.

Test Procedures referred to in this article, including the "California Exhaust Emission Standards and Test Procedures for 2001 Model Year and Later Spark-Ignition Marine Engines," as adopted October 21, 1999, and last amended ~~June 5, 2009~~ <insert date of amendment>, which is incorporated by reference herein, may be obtained from the State Air Resources Board at P.O. Box 8001, 9528 Telstar Avenue, El Monte, California 91734-8001.

NOTE: Authority cited: sections 39600, 39601, 43013, 43018, 43101, 43102 and 43104, Health and Safety Code.
Reference: sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5 and 43210-43212, Health and Safety Code.

APPENDIX G

PROPOSED TEST PROCEDURES

(2005 – 2012 Model Years)

Small Off-Road Engines

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State of California

AIR RESOURCES BOARD

CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR 2005-2012~~ AND LATER~~ SMALL OFF-ROAD ENGINES

Adopted: July 26, 2004

Amended: February 24, 2010

Amended: <insert applicable amendment date>

NOTE: This document is printed in a style to indicate changes from the existing provisions.

All existing language in Subpart B and Subpart D is indicated by plain type. All proposed additions to language in Subpart B and Subpart D are indicated by underlined text. All proposed deletions to language are indicated by strikeout. Only those portions containing the suggested modifications from the existing language are included. All other portions remain unchanged and are indicated by the symbol "* * * * *" for reference.

The numbering convention employed in this document, in order of priority, is: I.1.a.1.i.A.

APPENDIX H

PROPOSED TEST PROCEDURES
(Part 1054)

Small Off-Road Engines

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Adopt incorporated "California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines" (40 CFR, Part 1054) to read:

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State of California
AIR RESOURCES BOARD

CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR NEW 2013 AND LATER SMALL OFF-ROAD ENGINES

ENGINE-TESTING PROCEDURES (PART 1054)

Adopted: [insert date of adoption]

NOTE: This document incorporates by reference Title 40 of the Code of Federal Regulations (CFR) Part 1054 – Control of Emissions from New, Small Nonroad Spark-Ignition Engines and Equipment, Subparts A, B, C, D, E, F, G, H and I, as amended November 8, 2010; and, the internally referenced sections of Title 40 CFR, Parts 60, 80, 86, 90, and 1065. Sections that have been included in their entirety are set forth with the section number and title. California provisions that replace specific federal language provisions are denoted by the words "DELETE" for the federal language and "REPLACE WITH" or "ADD" for the California language. The symbols "* * * * *" and "..." mean that the remainder of the CFR text for a specific section is not shown in these procedures but has been incorporated by reference, with only the printed text changed. CFR sections that are not listed are not part of the test procedures. If there is any conflict between the provisions of this document and the California Health and Safety Code, Division 26, or Title 13 of the California Code of Regulations (CCR), the Health and Safety Code and Title 13 apply.

This document is all newly adopted text.

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CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR NEW 2013 AND LATER SMALL OFF-ROAD ENGINES

The following provisions of Part 1054, Title 40, Code of Federal Regulations, as proposed by the United States Environmental Protection Agency on the date listed, are adopted and incorporated herein by this reference for 2013 model year and later small off-road engines as the California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines, except as altered or replaced by the provisions set forth below.

PART 1054 – CONTROL OF EMISSION FROM NEW, SMALL NONROAD SPARK-IGNITION ENGINES AND EQUIPMENT

SOURCE: 75 FR 59259, November 8, 2010, unless otherwise noted.

Subpart A – Overview and Applicability

§ 1054.1 Does this part apply for my engines and equipment?

* * * * *

(a) (2) DELETE,
REPLACE WITH:
The requirements of this part related to evaporative emissions apply as specified in Title 13, California Code of Regulations, Chapter 15, Article 1 to fuel systems used with engines subject to exhaust emission standards in this part if the engines use a volatile liquid fuel (such as gasoline).

(a) (3) DELETE,
REPLACE WITH:
This part 1054 applies starting with the 2013 model year for all small spark-ignition off-road engines and equipment.

(a) (4) DELETE,
REPLACE WITH:
The provisions of CCR 2403(f) currently apply for new engines used in emergency rescue equipment.

(a) (5) DELETE.

(b) DELETE.

(c) DELETE,
REPLACE WITH:
See California Exhaust Emission Standards and Test Procedures for 2005 – 2012 Small Off-Road Engines for requirements that apply to engines not yet subject to the requirements of this part 1054.

(d) DELETE.

(e) DELETE.

§ 1054.2 Who is responsible for compliance?

DELETE,
REPLACE WITH:
The requirements and prohibitions of this part apply to manufacturers of engines and equipment, as described in §1054.1. The requirements of this part are generally addressed to manufacturers subject to this part's requirements. The term "you" generally means the certifying manufacturer. For provisions related to exhaust emissions, this generally means the engine manufacturer, especially for issues related to certification (including production-line testing, reporting, etc.).

For provisions related to certification with respect to evaporative emissions, this generally means the equipment manufacturer. Equipment manufacturers must meet applicable requirements as described in Title 13, California Code of Regulations, Chapter 15, Article 1. Engine manufacturers that assemble an engine's complete fuel system are considered to be the equipment manufacturer with respect to evaporative emissions.

§ 1054.5 Which nonroad engines are excluded from this part's requirements?

DELETE,
REPLACE WITH:
This part does not apply to the engines that are excluded in the "small off-road engine" definition found in Title 13, section 2401.

§ 1054.10 How is this part organized?

* * * * *

§ 1054.15 Do any other CFR parts apply to me?

(a) DELETE.

* * * * *

(c) DELETE.

* * * * *

§ 1054.20 What requirements apply to my equipment?

* * * * *

(b) DELETE,
REPLACE WITH:
All equipment subject to the exhaust standards of Title 13, California Code of Regulations, Chapter 9, Article 1, must also meet the evaporative emission standards of Title 13, California Code of Regulations, Chapter 15, Article 1.

(c) DELETE,
REPLACE WITH:
You must identify and label equipment you produce under 40 CFR part 1054 consistent with the requirements of Title 13, California Code of Regulations, Chapter 9, Article 1, Section 2404 and Chapter 15, Article 1, Section 2759.

(d) DELETE,
REPLACE WITH:
You must certify your equipment or fuel systems as described in Title 13, California Code of Regulations, Chapter 15, Article 1.

(e) DELETE,
REPLACE WITH:
You must follow all emission-related installation instructions from the certifying manufacturers as described in §1054.130, and Title 13, California Code of Regulations, Chapters 9 and 15. Failure to follow these instructions may subject you to civil penalties.

(f) DELETE.

§ 1054.30 Submission of information.

(a) DELETE,
REPLACE WITH:
This part includes various requirements to record data or other information. Refer to §1054.825 and Title 13, California Code of Regulations, Chapters 9 and 15 regarding recordkeeping requirements. If recordkeeping requirements are not specified, store these records in any format and on any media and keep them readily available for one model year after you send an associated application for certification, or one year after you generate the data if they do not support an application for certification. You must promptly send us organized, written records in English if we ask for them. We may review them at any time.

(b) DELETE,

REPLACE WITH:
The regulations in §1054.255 describe your obligation to report truthful and complete information and the consequences of failing to meet this obligation. This includes information not related to certification.

* * * * *

Subpart B—Emission Standards and Related Requirements

§ 1054.101 What emission standards and requirements must my engines meet?

(a) DELETE,
REPLACE WITH:
(a) (1) *Exhaust emissions.* All engines must meet the requirements in §1054.115. Exhaust emissions from small off-road spark-ignition engines manufactured for sale, sold, offered for sale in California, or that are introduced, delivered or imported into California for introduction into commerce, must not exceed:

Exhaust Emission Standards for Spark-Ignition Engines
(grams per kilowatt-hour)

Model Year	Displacement Category	Durability Periods (hours)	Hydrocarbon plus Oxides of Nitrogen[(1)(3)]	Carbon Monoxide	Particulate
2005 and subsequent	<50 cc	50/125/300	50	536	2.0[(2)]
	50-80 cc, inclusive	50/125/300	72	536	2.0[(2)]
2008 and subsequent	>80 cc - <225 cc	125/250/500	10.0	549	
	≥ 225 cc	125/250/500/1000	8.0	549	

(1) The Executive Officer may allow gaseous-fueled (i.e., propane, natural gas) engine families, that satisfy the requirements of the regulations, to certify to either the hydrocarbon plus oxides of nitrogen or hydrocarbon emission standard, as applicable, on the basis of the non-methane hydrocarbon (NMHC) portion of the total hydrocarbon emissions.
(2) Applicable to all two-stroke engines.
(3) Engines used exclusively to power products which are used exclusively in wintertime, at the option of the engine manufacturer, may comply with the provisions in section 90.103(a)(2)(ii).

(2) (i) Two-stroke engines used to power snowthrowers may meet the emission standards for engines at or less than 80 cc in displacement.
(ii) Engines used exclusively to power products which are used exclusively in wintertime, such as snowthrowers and ice augers, at the option of the engine manufacturer, need not certify to or comply with standards regulating emissions of $HC+NO_x$ or $NMHC+NO_x$, as applicable. If the manufacturer exercises the option to certify to standards regulating such emissions, such engines must meet such standards. If the engine is to be used in any equipment or vehicle other than an exclusively wintertime product such as a snowthrower or ice auger, it must be certified to the applicable standard regulating emissions of $HC+NO_x$ or $NMHC+NO_x$ as applicable.
(3) Low-emitting Blue Sky Series engine requirements.
Voluntary standards. Engines may be designated "Blue Sky Series" engines by meeting:
(i) All applicable requirements of this Article, and

(ii) The following voluntary exhaust emission standards, which apply to all certification and compliance testing. Blue Sky Series engines shall not be included in the averaging, banking, and trading program. Zero-emission small off-road equipment may certify to the Blue Sky Series emission standards. Manufacturers of zero-emission small off-road equipment are not required to perform emissions testing, but must file an application of certification and comply with the administrative requirements outlined in these procedures.

Voluntary Emission Standards
(grams per kilowatt-hour)

Model Year	Displacement Category	Hydrocarbon plus Oxides of Nitrogen	Carbon Monoxide	Particulate*
2005 and subsequent	<50 cc	25	536	2.0
	50 - 80 cc, inclusive	36	536	2.0
2007 and subsequent	>80 cc - <225 cc	5.0	549	
2008 and subsequent	≥225 cc	4.0	549	

* Applicable to all two-stroke engines

(b) DELETE,
REPLACE WITH:
Evaporative emissions. Except as specified in §1054.20, new equipment using engines that run on a volatile liquid fuel (such as gasoline) must meet the evaporative emission requirements as specified in Title 13, California Code of Regulations, Chapter 15, Article 1.

* * * * *

(d) DELETE.

(e) DELETE.

* * * * *

§ 1054.103 What exhaust emission standards must my handheld engines meet?

(a) DELETE,
REPLACE WITH:
Emission standards. The exhaust emissions from your engines may not exceed the emission standards that are specified in §1054.101. Measure emissions

using the applicable steady-state test procedures described in subpart F of this part.

(b) DELETE,
REPLACE WITH:
Averaging, banking, and trading. You may generate or use emission credits under the averaging, banking, and trading (ABT) program for $HC+NO_X$ emissions and Particulate Matter emissions as described in Title 13, California Code of Regulations, Chapter 9, Article 1.

* * * * *

(e) DELETE,
REPLACE WITH:
Applicability for testing. The emission standards in Title 13, California Code of Regulations, Chapter 9, Article 1 apply to all testing, including certification, production-line, in-use, and new engine compliance testing.

§ 1054.105 What exhaust emission standards must my nonhandheld engines meet?

(a) DELETE,
REPLACE WITH:
Emission standards. Exhaust emissions from your engines may not exceed the emission standards in Title 13, California Code of Regulations, Chapter 9, Article 1, Section 2403. Measure emissions using the applicable steady-state test procedures described in subpart F of this part.

(b) DELETE,
REPLACE WITH:
Averaging, banking, and trading. You may generate or use emission credits under the averaging, banking, and trading (ABT) program for $HC+NO_X$ emissions and Particulate Matter emissions as described in Title 13, California Code of Regulations, Chapter 9, Article 1.

* * * * *

(e) DELETE,
REPLACE WITH:
Applicability for testing. The emission standards in Title 13, California Code of Regulations, Chapter 9, Article 1 apply to all testing, including certification, production-line, in-use, and new engine compliance testing.

§ 1054.107 What is the useful life period for meeting exhaust emission standards?

* * * * *

(a) (1) DELETE,
RELACE WITH:
The useful life period for exhaust requirements is the number of engine operating hours from Title 13, California Code of Regulations, Chapter 9, Article 1, Section 2404 that most closely matches the expected median in-use life of your engines. The median in-use life of your engine is the shorter of the following values:

(i) The median in-use life of equipment into which the engine is expected to be installed.

(ii) The median in-use life of the engine without being scrapped or rebuilt.

(2) DELETE.

(3) DELETE.

* * * * *

§ 1054.110 What evaporative emission standards must my handheld equipment meet?

DELETE,
REPLACE WITH:
All equipment must meet the evaporative emission requirements as specified in Title 13, California Code of Regulations, Chapter 15, Article 1. The evaporative emission requirements apply for handheld equipment over a useful life of five years.

§ 1054.112 What evaporative emission standards must my nonhandheld equipment meet?

DELETE,
REPLACE WITH:
All equipment must meet the evaporative emission requirements as specified in Title 13, California Code of Regulations, Chapter 15, Article 1. The evaporative emission requirements apply for nonhandheld equipment over a useful life of five years.

§ 1054.115 What other requirements apply?

* * * * *

(b) DELETE,
REPLACE WITH:
Adjustable parameters. Engines that have adjustable parameters must meet all the requirements of this part for any adjustment in the physically adjustable range. An operating parameter is not considered adjustable if you permanently seal it or if it is not normally accessible using ordinary tools. We may require that you set adjustable parameters to any specification within the adjustable ranges during any testing including certification testing, production-line testing, in-use testing, or new engine compliance testing.

(c) DELETE,
REPLACE WITH:
Altitude adjustments. Engines must meet applicable emission standards for valid tests conducted under the ambient conditions specified in 40 CRF 1065.520. Aside from engines that must meet the standards at or above barometric pressures or 96.0 kPa in the standard configuration and are not required to meet emission standards at lower barometric pressures, engines must meet applicable emission standards at all specified atmospheric pressures, except that for atmospheric pressures below 94.0 kPa you may rely on an altitude kit for all testing if you meet the requirements specified in §1054.205(r). If you rely on an altitude kit for certification, you must identify in the owners manual the altitude range for which you expect proper engine performance and emission control with and without the altitude kit; you must also state in the owners manual that operating the engine with the wrong engine configuration at a given altitude may increase its emissions and decrease fuel efficiency and performance. In your application for certification, identify the altitude above which you rely on an altitude kit to meet emission standards and describe your plan for making information and parts available such that you would reasonably expect that altitude kits would be widely used at all such altitudes.

* * * * *

§ 1054.120 What emission-related warranty requirements apply to me?

DELETE,
REPLACE WITH:
The requirements of this section and Title 13, CCR, Chapter 9, Article 1 apply to the manufacturer certifying with respect to exhaust emissions. See Title 13, CCR, Chapter 15, Article 1 for the warranty requirements related to evaporative emissions.

* * * * *

(b) (1) DELETE,
REPLACE WITH:
The minimum warranty period is two years.

(b) (2) DELETE.

(b) (3) DELETE.

(c) DELETE,
REPLACE WITH:
Components covered. The emission-related warranty covers all components whose failure would increase an engine's emissions of any regulated pollutant, including components listed in Title 13, California Code of Regulations, Chapters 9 and 15, and components from any other system you develop to control emissions. The emission-related warranty covers these components even if another company produces the component. Your emission-related warranty does not cover components whose failure would not increase an engine's emissions of any regulated pollutant.

(d) DELETE.

* * * * *

(f) (3) (i) DELETE,
REPLACE WITH:
If you have authorized service centers in all California population centers with a population of 100,000 or more based on the 2010 census, you may limit warranty repairs to these service providers.

(f) (3) (ii) DELETE,
REPLACE WITH:
You may limit warranty repairs to authorized service centers for owners located within 100 miles of an authorized service center. For owners located more than 100 miles from an authorized service center, you must state in your warranty that you will either pay for shipping costs to and from an authorized service center, provide for a service technician to come to the owner to make the warranty repair, or pay for the repair to be made at a local non-authorized service center.

(f) (3) (iii) DELETE,
REPLACE WITH:
You must have at least one authorized service center in California.

(f) (4) DELETE.

§ 1054.125 What maintenance instructions must I give to buyers?

DELETE,
REPLACE WITH:
Give the ultimate purchaser of each new engine written instructions for properly maintaining and using the engine, including the emission control system as

described in this section. The maintenance instructions also apply to service accumulation on your emission-data engines as described in §1054.245 and in 40 CFR part 1065. Note that for engines with a displacement of less than or equal to 80 cc you may perform maintenance on emission-data engines during service accumulation provided that exhaust emission tests are performed before and after the maintenance is performed.

* * * * *

(d) DELETE,
REPLACE WITH:
Noncritical emission-related maintenance. Subject to the provisions of this paragraph (d), you may schedule any amount of emission-related inspection or maintenance that is not covered by paragraph (a) of this section (i.e., maintenance that is neither explicitly identified as critical emission-related maintenance, nor that we approve as critical emission-related maintenance). Noncritical emission-related maintenance generally includes re-seating valves, removing combustion chamber deposits, or any other emission-related maintenance on the components we specify in Title 13, California Code of Regulations, Chapters 9 and 15 that is not covered in paragraph (a) of this section. You must state in the owner's manual that these steps are not necessary to keep the emission-related warranty valid. If operators fail to do this maintenance, this does not allow you to disqualify those engines from in-use testing or deny a warranty claim. Do not take these inspection or maintenance steps during service accumulation on your emission-data engines.

* * * * *

§ 1054.130 What installation instructions must I give to equipment manufacturers?

* * * * *

(b) (2) DELETE,
REPLACE WITH:
State: "Failing to follow these instructions when installing a certified engine in off-road equipment violates California law, subject to penalties as described in Title 13, California Code of Regulations."

* * * * *

(b) (4) DELETE,
REPLACE WITH:
Describe the steps needed to control evaporative emissions in accordance with Executive Order that you hold. Include instructions for connecting fuel lines as needed to prevent running loss emissions, if applicable. Such instructions must

include sufficient detail to ensure that running loss control will not cause the engine to exceed exhaust emission standards. For example, you may specify a maximum vapor flow rate under normal operating conditions. Also include notification that the installer must meet the requirements of §1054.112 and Title 13, California Code of Regulations, Chapter 15, Article 1.

* * * * *

(b) (7) DELETE,
REPLACE WITH:
State: "If you install the engine in a way that makes the engine's emission control information label hard to read during normal engine maintenance, you must place a duplicate label on the equipment, as described in Title 13, California Code of Regulations, Chapter 9, Article 1, Section 2404."

* * * * *

§ 1054.135 How must I label and identify the engines I produce?

DELETE,
REPLACE WITH:
The label shall meet the requirements specified in Section 2404, Title 13 of the California Code of Regulations.

§ 1054.140 What is my engine's maximum engine power and displacement?

* * * * *

(a) DELETE,
REPLACE WITH:
An engine configuration's maximum engine power is the maximum brake power point on the nominal power curve for the engine configuration, as defined in this section. Round the power value to the nearest 0.1 kilowatts for nonhandheld engines and to the nearest 0.01 kilowatts for handheld engines. The nominal power curve of an engine configuration is the relationship between maximum available engine brake power and engine speed for an engine, using the mapping procedures of 40 CFR part 1065, based on the manufacturer's design and production specifications for the engine. For handheld engines, we may allow manufacturers to base the nominal power curve on other mapping procedures. This information may also be expressed by a torque curve that relates maximum available engine torque with engine speed. Note that maximum engine power is based on engines and installed engine governors; equipment designs that further limit engine operation do not change maximum engine power.

* * * * *

§ 1054.145 Are there interim provisions that apply only for a limited time?

* * * * *

(a) DELETE.

(b) DELETE.

(c) DELETE.

(d) DELETE.

(e) DELETE.

(f) DELETE.

(g) DELETE.

(h) DELETE.

(i) DELETE.

(j) DELETE,
REPLACE WITH:
Continued use of California Exhaust Emission Standards and Test Procedures for 2005 through 2012 Small Off-Road Engines. You may use the test procedures for measuring exhaust emissions in the California Exhaust Emission Standards and Test Procedures for 2005 through 2012 Small Off-Road Engines instead of those in subpart F of this part for the 2013 through 2014 model years. This applies for certification, production-line, and in-use testing. You may continue to use data based on the test procedures in the California Exhaust Emission Standards and Test Procedures for 2005 through 2012 Small Off-Road Engines for engine families in 2014 and later model years, provided that we allow you to use carryover emission data under 40 CFR 1054.235(d) for your engine family. You may also use the test procedures for measuring exhaust emissions in the California Exhaust Emission Standards and Test Procedures for 2005 to 2012 Small Off-Road Engines for production-line testing with any engine family whose certification is based on testing with those procedures.

(k) DELETE.

* * * * *

(m) DELETE.

(n) DELETE.

(o) DELETE.

Subpart C—Certifying Emission Families

§ 1054.201 What are the general requirements for obtaining a certificate of conformity?

DELETE,
REPLACE WITH:
Engine manufacturers must certify their engines with respect to the exhaust emission standards in Title 13, CCR, Chapter 9, Article 1, Section 2403. Manufacturers of engines, equipment, or fuel-system components may need to certify their products with respect to evaporative emission standards as described in Title 13, CCR, Chapter 15, Article 1. The following general requirements apply for obtaining an Executive Order:

(a) DELETE,
REPLACE WITH:
You must send us a separate application for an Executive Order for each engine family. An Executive Order is not valid for any production after December 31 of the model year for which it is issued. If you certify with respect to both exhaust and evaporative emissions, you must submit separate applications.

* * * * *

(d) DELETE.

* * * * *

(h) DELETE.

ADD:
(i) The Executive Officer may request notification, prior to the initial model year submission of an engine manufacturer's certification application(s), of the engine manufacturer's intent to seek engine family certification (i.e., a letter of intent) so that the Executive Officer can adequately allocate resources required for reviewing such certification applications in a timely manner. Such letters of intent must provide the engine manufacturer's best estimate of general information for the applicable model-year certification, such as identification of each engine family, date of expected submission, etc.

§ 1054.205 What must I include in my application?

DELETE,
REPLACE WITH:
This section specifies the information that must be in your application, unless we ask you to include less information under §1054.201(c). We may require you to

provide additional information to evaluate your application. The provisions of this section apply to the manufacturer that is to be granted an Executive Order.

(a) DELETE,
REPLACE WITH:
Describe the engine family's specifications and other basic parameters of the engine's design and emission controls (i.e., catalyst specifications). List the fuel type on which your engines are designed to operate (for example, all-season gasoline). List each distinguishable engine configuration in the engine family.

* * * * *

(i) DELETE,
REPLACE WITH:
Include the maintenance and warranty instructions you will give to the ultimate purchaser of each new engine (see §§1054.120 and 1054.125). Describe your basis for meeting the warranty-assurance provisions in §1054.120(f). Describe your recall repair network if it is different than your warranty repair network.

* * * * *

(l) DELETE,
REPLACE WITH:
Identify the emission standards or FELs for the engine family. Include a statement indicating whether the manufacturer intends to include the engine family in a corporate average, and, if so, an estimate of the overall corporate average emissions for that model year.

* * * * *

(p) (1) DELETE,
REPLACE WITH:
Report all test results involving measurement of pollutants for which emission standards apply. Include test results from invalid tests and from any other tests, whether or not they were conducted according to the test procedures of subpart F of this part. We may ask you to send other information to confirm that your tests were valid under the requirements of this part; Title 13, CCR, Chapters 9 and 15; and 40 CFR 1065.

(2) DELETE,
REPLACE WITH:
Report measured CO_2, N_2O, and CH_4 as described in §1054.235.

* * * * *

ADD:

(q) (5) Information including but not limited to part numbers, technical specifications, schematics, and photographs of physical samples.

(r) DELETE,
REPLACE WITH:
Describe how your engines with a displacement of greater than 80 cc comply with emission standards at varying atmospheric pressures. Include a description of altitude kits you designed to comply with the requirements of §1054.115(c). Identify the part number of each component you describe. Identify the altitude range for which you expect proper engine performance and emission control with and without the altitude kit. State that your engines will comply with applicable emission standards throughout the useful life with the altitude kit installed according to your instructions. Describe any relevant testing, engineering analysis, or other information in sufficient detail to support your statement. In addition, describe your plan for making information and parts available such that you would reasonably expect that altitude kits would be widely used in the high-altitude counties. For example, engine owners should have ready access to information describing when an altitude kit is needed and how to obtain this service. Similarly, parts and service information should be available to qualified service facilities in addition to authorized service centers if that is needed for owners to have such altitude kits installed locally.

(s) DELETE.

* * * * *

(u) DELETE,
REPLACE WITH:
Unconditionally certify that all the engines in the engine family comply with the requirements of this part, other referenced parts of the CFR as incorporated and modified herein, California's Health and Safety Code, and CCR 2400-2409.

(v) DELETE,
REPLACE WITH:
Include good-faith estimates of California-directed production volumes. Include a justification for the estimated production volumes if they are substantially different than actual production volumes in earlier years for similar models. Also indicate whether you expect the engine family to contain only off-road engines, only stationary engines, or both.

(w) DELETE.

(x) DELETE,
REPLACE WITH:
Include the information required by other subparts of this part.

(y) DELETE,
REPLACE WITH:
Include other applicable information, such as information specified in this part related to requests for exemptions.

* * * * *

§ 1054.210 May I get preliminary approval before I complete my application?

DELETE.

§ 1054.220 How do I amend the maintenance instructions in my application?

* * * * *

§ 1054.225 How do I amend my application for certification to include new or modified engines or fuel systems or change an FEL?

* * * * *

(a) (3) DELETE.

* * * * *

(f) DELETE.

§ 1054.230 How do I select emission families?

(a) DELETE,
REPLACE WITH:
For purposes of certification, divide your product line into families of engines that are expected to have similar emission characteristics throughout their useful life as described in this section. Your engine family is limited to a single model year. For evaporative emissions, group engines into emission families as described in the California Code of Regulations, Chapter 15, Article 1.

* * * * *

(d) (1) DELETE.

(d) (2) DELETE.

* * * * *

§ 1054.235 What exhaust emission testing must I perform for my application for a certificate of conformity?

* * * * *

(a) DELETE,
REPLACE WITH:
Select an emission-data engine from each engine family for testing as described in 40 CFR 1065.401. Select a configuration that is most likely to exceed the $HC+NO_X$ standard. Configurations must be tested as they will be produced, including installed governors, if applicable.

* * * * *

(c) (3) DELETE,
REPLACE WITH:
For engines with adjustable parameters, manufacturers must test the engines at both extremes of the adjustment, as applicable.

* * * * *

(g) DELETE,
REPLACE WITH:
Measure $CO_2$and $CH_4$with each low-hour certification test using the procedures specified in 40 CFR part 1065 starting in the 2013 model year. Also measure N_2O with each low-hour certification test using the procedures specified in 40 CFR part 1065 starting in the 2013 model year for any engine family that depends on NOx aftertreatment to meet emission standards. Use the same units and modal calculations as for your other results to report a single weighted value for each constituent. Round the final values as follows:

(1) Round $CO_2$to the nearest 1 g/kW-hr.

(2) Round N_2O to the nearest 0.001 g/kW-hr.

(3) Round $CH_4$to the nearest 0.001 g/kW-hr.

ADD:
(h) The use of auxiliary fans for engine cooling must be indicated in the application for certification. The manufacturer must justify to the satisfaction of the Executive Officer in the application for certification the need for and use of such fans. The manufacturer must also demonstrate that the supplemental cooling resulting from the use of the fans is representative of in-use engine operation.

§ 1054.240 How do I demonstrate that my emission family complies with exhaust emission standards?

(a) DELETE,
REPLACE WITH:
For purposes of certification, your engine family is considered in compliance with the emission standards in §1054.101(a) if all emission-data engines representing that family have test results showing deteriorated emission levels at or below these standards. This includes all test points over the course of the durability demonstration. Note that your FELs are considered to be the applicable emission standards with which you must comply if you participate in the ABT program.

* * * * *

(c) DELETE,
REPLACE WITH:
Determine a deterioration factor to compare emission levels from the emission-data engine with the applicable emission standards. Section 1054.245 specifies how to test engines to develop deterioration factors that represent the expected deterioration in emissions over your engines' full useful life. Calculate a multiplicative deterioration factor as described in §1054.245. If the deterioration factor is less than one, use one. Specify the deterioration factor to one more significant figure than the emission standard.

* * * * *

§ 1054.245 How do I determine deterioration factors from exhaust durability testing?

DELETE,
REPLACE WITH:
(a) Small-volume engine manufacturers may, at their option, use deterioration factors (DF) for $HC+NO_x$ ($NMHC+NO_x$) and CO from Table 1 or Table 2 of this paragraph (a) or they may calculate deterioration factors for $HC+NO_x$ ($NMHC+NO_x$) and CO according to the process described in paragraph (d) of this section. For technologies that are not addressed in Table 1 or Table 2 of this paragraph (a), the manufacturer may ask the Executive Officer to assign a deterioration factor prior to the time of certification.

(b) Table 1 follows:

TABLE 1: ENGINES GREATER THAN 80 CC $HC+NO_x$ ($NMHC+NO_x$) AND CO ASSIGNED DETERIORATION FACTORS FOR SMALL VOLUME ENGINE MANUFACTURERS

Displacement Category	Side valve engines		Overhead valve engines		Engines with aftertreatment
	$HC+NO_x$ ($NMHC+NO_x$)	CO	$HC+NO_x$ ($NMHC+NO_x$)	CO	
>80 cc-<225 cc	2.1	1.1	1.5	1.1	DFs must be calculated using the formula in Subsection (d) below
≥ 225 cc	1.6	1.1	1.4	1.1	

(c) Table 2 follows:

TABLE 2. ENGINES AT OR BELOW 80 CC HC+NOx (NMHC+NOx) AND CO ASSIGNED DETERIORATION FACTORS FOR SMALL VOLUME ENGINE MANUFACUTURERS

Displacement category	Two-stroke engines[1]		Four-stroke engines		Engines with aftertreatment
	$HC+NO_x$ ($NMHC+NO_x$)	CO	$HC+NO_x$ ($NMHC+NO_x$)	CO	
0-80 cc, inclusive	1.1	1.1	1.5	1.1	DFs must be calculated using the formula in Subsection (d) below

[1] Two-stroke technologies to which these assigned deterioration factors apply include conventional two-strokes, compression wave designs, and stratified scavenging designs.

(d) Formula for calculating deterioration factors for engines with aftertreatment:

$$DF = [(NE * EDF) - (CC * F)]/(NE - CC)$$

Where:

DF = deterioration factor.
NE = new engine emission levels prior to the catalyst (g/kW-hr).
EDF = deterioration factor for engines without catalyst as shown in Table 1 or Table 2 of this paragraph.
CC = amount converted at 0 hours in g/kW-hr.
F = 0.8 for HC (NMHC), 1.0 for NOx, and 0.8 for CO for all classes of engines.

(e)(1) Manufacturers shall obtain an assigned DF or calculate a DF, as appropriate, for each regulated pollutant for all engine families. Such DF shall be used for certification, production line testing, and Selective Enforcement Auditing.

(2) For engines not using assigned deterioration factors from Table 1 or Table 2 of paragraph (a) of this section, deterioration factors shall be determined as follows:

(i) The new prototype engine must be emissions tested at zero hour (break-in) with all emission control systems (e.g., EGR, catalysts, etc.) installed.

(ii) The engine must be aged on the emissions durability cycle to the first test point. The manufacturer must choose its test points that are equally divided (same number of hours ± 2 hours). An emissions test is conducted at half the emissions durability period ± 2 hours.

(iii) The prototype engine must be emissions tested at each test point. Following testing the durability cycle must be continued to the next point.

(iv) Only specified maintenance may be performed during durability cycle testing. In addition, an emission test must be performed before and after the maintenance is performed.

(v) When the prototype engine has been aged on the durability cycle to the full emissions durability cycle, a final emissions test must be conducted.

(vi) For each pollutant, a line must be fitted to the data points treating the initial test as occurring at hour=0, and using the method of least-squares. The deterioration factor is the calculated emissions at the end of the emissions durability period divided by the calculated emissions at zero hours.

(vii) If the engine manufacturer conducts more than one test at a test point, the number of tests at every test point must be the same. All tests must be used in a linear regression analysis as separate points to determine the deterioration factor.

(viii) Additional engines identical to the original test engine may be tested with prior approval from the Executive Officer. In such cases, data collection must remain consistent for all test engines. The testing of multiple engines requires the determination of separate deterioration factors for each test engine. The official deterioration factor shall be the average of the separate deterioration factors for each test engine.

(ix) The product of the zero-hour (break-in) results from the engine multiplied by the deterioration factor is the emissions certification value for that engine family and pollutant. In the case of multiple zero-hour tests on a single engine, the engine manufacturer must select the last zero-hour test as the official zero-hour test upon which the deterioration factor is applied. If multiple engines are tested, the manufacturer must select the highest zero-hour result among the last zero-hour test of each engine as the official zero-hour test upon which the deterioration factor is applied.

(3) ARB may reject a DF if it has evidence that the DF is not appropriate for that engine family within 30 days of receipt from the manufacturer. The manufacturer must retain actual emission test data to support its choice of DF and furnish that data to the Executive Officer upon request. Manufacturers may request approval by the Executive Officer of alternative procedures for determining deterioration. Any submitted DF not rejected by ARB within 30 days shall be deemed to have been approved.

(4) Calculated deterioration factors may cover families and model years in addition to the one upon which they were generated if the manufacturer submits a justification acceptable to the Executive Officer in advance of certification that the affected engine families can be reasonably expected to have similar emission deterioration characteristics.

(5) Engine families that undergo running changes need not generate a new DF, if the manufacturer submits a justification acceptable to the Executive Officer concurrent with the running change that the affected engine families can be reasonably expected to have similar emission deterioration characteristics.

§ 1054.250 What records must I keep and what reports must I send to EPA?

(a) DELETE,
REPLACE WITH:
Send to the Chief, Mobile Source Operations Division, 9528 Telstar Avenue, El Monte, CA, 91731, information related to your California-directed production volumes as described in §1054.345. In addition, within 45 days after the end of the model year, you must send ARB a report describing information about engines you produced during the model year as follows:

(a) (1) DELETE,
REPLACE WITH:
State the total California and Federal production volume for each engine family.

(a) (2) DELETE.

(a) (3) DELETE.

(a) (4) DELETE.

* * * * *

§ 1054.255 What decisions may EPA make regarding my certificate of conformity?

(a) DELETE,
REPLACE WITH:
If we determine your application is complete and shows that the engine family meets all the requirements of 40 CFR part 1054, the California Health and Safety Code, and Title 13, California Code of Regulations, Chapters 9 and 15, we will issue an Executive Order for your engine family for that model year. We may make the approval subject to additional conditions.

(b) DELETE,

REPLACE WITH:
We may deny your application for certification if we determine that your engine family fails to comply with emission standards or other requirements of 40 CFR part 1054 or the California Health and Safety Code or Title 13, California Code of Regulations, Chapters 9 and 15. We will base our decision on all available information. If we deny your application, we will explain why in writing.

* * * * *

(c) (4) DELETE,
REPLACE WITH:
Deny us from completing authorized activities (see subsections (i) through (vi) below). This includes a failure to provide reasonable assistance.

(i) We may inspect your testing, manufacturing processes, storage facilities (including port facilities for imported engines and equipment or other relevant facilities), or records, as authorized by California law, to enforce the provisions of 40 CFR part 1054. Inspectors will have authorizing credentials and will limit inspections to reasonable times—usually, normal operating hours.

(ii) If we come to inspect, we may or may not have a warrant or court order.

(A) If we do not have a warrant or court order, you may deny us entry.

(B) If we have a warrant or court order, you must allow us to enter the facility and carry out the activities it describes.

(iii) We may seek a warrant or court order authorizing an inspection described in this section whether or not we first tried to get your permission to inspect.

(iv) We may select any facility to do any of the following:

(A) Inspect and monitor any aspect of engine or equipment manufacturing, assembly, storage, or other procedures, and any facilities where you do them.

(B) Inspect and monitor any aspect of engine or equipment test procedures or test-related activities, including test engine/equipment selection, preparation, service accumulation, emission duty cycles, and maintenance and verification of your test equipment's calibration.

(C) Inspect and copy records or documents related to assembling, storing, selecting, and testing an engine or piece of equipment.

(D) Inspect and photograph any part or aspect of engines or equipment and components you use for assembly.

(v) You must give us reasonable help without charge during an inspection authorized by California law, including but not limited to the Health and Safety Code. For example, you may need to help us arrange an inspection with the facility's managers, including clerical support, copying, and translation. You may also need to show us how the facility operates and answer other questions. If we ask in writing to see a particular employee at the inspection, you must ensure that he or she is present (legal counsel may accompany the employee).

(vi) If you have facilities in other countries, we expect you to locate them in places where local law does not keep us from inspecting as described in this section. We will not try to inspect if we learn that local law prohibits it, but we may suspend your certificate if we are not allowed to inspect.

* * * * *

(c) (7) DELETE,
REPLACE WITH:
Take any action that otherwise circumvents the intent of the California Health and Safety Code, or 40 CFR part 1054 or Title 13, California Code of Regulations, Chapters 9 and 15.

(d) DELETE,
REPLACE WITH:
We may void your certificate if you do not keep the records we require or do not give us information as required under 40 CFR part 1054 or the California Health and Safety Code, or Title 13, California Code of Regulations, Chapters 9 and 15.

* * * * *

Subpart D—Production-Line Testing

§1054.300
DELETE,
REPLACE WITH:
§1054.300 General provisions.
Upon the Executive Officer's request, the manufacturer must supply a reasonable number of production engines for testing and evaluation. These engines must be representative of typical production and supplied for testing at such time and place and for such reasonable periods as the Executive Officer may require. Manufacturers must comply with the production-line testing provisions as specified in Title 13, California Code of Regulations, Section 2407.

Subpart E—In-use Testing

§ 1054.401 General provisions.

* * * * *

Subpart F—Test Procedures

§ 1054.501 How do I run a valid emission test?

* * * * *

(b) (2) (ii) DELETE,
REPLACE WITH:
For engines with a displacement of greater than eighty cubic centimeters, you may use the blended fuel for certifying engines under this part without our advance approval. If you use the blended fuel for certifying a given engine family, you must also use it for production-line testing or any other testing you perform for that engine family under this part. If the certification of all your engine families in a given model year is based on test data collected using the blended fuel, we will also use the blended fuel for testing your engines. If the certification of some but not all of your engine families in a given model year is based on test data collected using the blended fuel, we may use the blended fuel or the specified gasoline test fuel for testing any of your engines.

* * * * *

(b) (3) (ii) DELETE,
REPLACE WITH:
Intake air temperature. Measure engine intake air temperature as described in 40 CFR 1065.125, and control it if necessary. For example, since the purpose of this requirement is to ensure that the measured air temperature is consistent with the intake air temperature that would occur during in-use operation at the same ambient temperature, do not cool the intake air and do not measure air temperature at a point where engine heat affects the temperature measurement.

* * * * *

ADD:
(b) (8) Engine service accumulation and stabilization procedure. Use the service accumulation procedure determined by the manufacturer for exhaust emission stabilizing of an engine, consistent with good engineering practice.

(i) The manufacturer determines, for each engine family, the number of hours at which the engine exhaust emission control system combination is stabilized for emission testing. However, this stabilization procedure may not exceed 12 hours. The manufacturer must maintain, and provide to the Executive Officer upon request, a record of the rationale used in making this determination. If the manufacturer can document that at some time prior to the full 12 hour service accumulation period the engine emissions are decreasing for the remainder of the 12 hours, the service accumulation may be completed at that time. The

manufacturer may elect to accumulate 12 hours on each test engine within an engine family without making this determination.

(ii) During service accumulation, the fuel and lubricants specified in 40 CFR 1065 must be used.

(iii) Engine maintenance during service accumulation is allowed only in accordance with 40 CFR 1065.

(9) Engine pre-test preparation.

(i) Drain and charge the fuel tank(s) with the specified test fuel to 50 percent of the tank's nominal capacity. If an external fuel tank is used, the engine fuel inlet system pressure must be typical of what the engine will see in use.

(ii) If you are using the raw gas sampling method, operate the engine on the dynamometer measuring the fuel consumption and torque before and after the emission sampling equipment is installed, including the sample probe.

(10) Analyzer pre-test procedures.

(i) If necessary, warm up and stabilize the analyzer(s) before calibrations are performed.

(ii) Replace or clean the filter elements and then leak check the system as required by 40 CRF 1065. If necessary, allow the heated sample line, filters and pumps to reach operating temperature.

(iii) Perform the following system checks:

(A) If necessary, check the sample line temperature. Heated FID sample line temperature must be maintained between 110°C and 230°C; a heated NOx sample line temperature must be maintained between 60°C and 230°C.

(B) Check that the system response time has been accounted for prior to sample collection data recording.

(C) A HC hang-up check is permitted.

(iv) Check analyzer zero and span before and after each test at a minimum. Further, check analyzer zero and span any time a range change is made or at the maximum demonstrated time span for stability for each analyzer used.

(11) Check system flow rates and pressures and reset, if necessary.

* * * * *

(c) (2) DELETE,
REPLACE WITH:
Describe in your application for certification any specially designed fixtures or other hardware if they are needed for proper testing of your engines. (Note: You do not need to specify the size or performance characteristics of engine dynamometers.) You must send us these fixtures or other hardware if we ask for them. We may waive the requirement of §1054.205(aa) to identify a test facility in the United States for such engine families as long as the projected California-directed production volume of all your engine families using the provisions of this paragraph (c)(2) is less than 5 percent of your total production volume from all engine families certified under this part 1054.

(d) DELETE,
REPLACE WITH:
Wintertime engines. You may test wintertime engines at the ambient temperatures specified in 40 CFR 1065.520, even though this does not represent in-use operation for these engines (40 CFR 1065.10(c)(1)). In this case, you may modify the test engine as needed to achieve intake temperatures that are analogous to in-use conditions. You may also test wintertime engines at reduced ambient temperatures as specified in 40 CFR 1051.505. Use the gasoline specified for low-temperature testing only if you test your engines at ambient temperatures below 20 °C.

§ 1054.505 How do I test engines?

(a) DELETE,
REPLACE WITH:
This section describes how to test engines under steady-state conditions. For engines with a displacement of less than or equal to eighty cubic centimeters you must perform tests with discrete-mode sampling. For engines with a displacement of greater than eighty cubic centimeters we allow you to perform tests with either discrete-mode or ramped-modal testing methods. You must use the same modal testing method for certification and all other testing you perform for an engine family. If we test your engines to confirm that they meet emission standards, we will use the modal testing method you select for your own testing. If you submit certification test data collected with both discrete-mode and ramped-modal testing (either in your original application or in an amendment to your application), either method may be used for subsequent testing. We may also perform other testing as allowed by the California's Health and Safety Code. Conduct duty-cycle testing as follows:

* * * * *

(a) (2) DELETE,
REPLACE WITH:

For ramped-modal testing, start sampling at the beginning of the first mode and continue sampling until the end of the last mode. Calculate emissions and cycle statistics the same as for transient testing as specified in 40 CFR part 1065. Unless we specify otherwise, you may simulate the governor for ramped-modal testing.

* * * * *

§ 1054.520 What testing must I perform to establish deterioration factors?

* * * * *

Subpart G—Special Compliance Provisions

§ 1054.601 What compliance provisions apply?

(a) DELETE,
REPLACE WITH:
Engine and equipment manufacturers, as well as owners, operators, and rebuilders of engines subject to the requirements of this part, and all other persons, must observe the provisions of this part and the provisions of California's Health and Safety Code.

* * * * *

(c) (1) DELETE,
REPLACE WITH:
You must label the engine as specified in Title 13, Chapter 9, Article 1, Section 2404.

* * * * *

§ 1054.610 What is the exemption for delegated final assembly?

DELETE.

§ 1054.612 What special provisions apply for equipment manufacturers modifying certified nonhandheld engines?

DELETE.

§ 1054.615 What is the exemption for engines certified to standards for Large SI engines?

DELETE.

§ 1054.620 What are the provisions for exempting engines used solely for competition?

DELETE.

§ 1054.625 What requirements apply under the Transition Program for Equipment Manufacturers?

DELETE.

§ 1054.626 What special provisions apply to equipment imported under the Transition Program for Equipment Manufacturers?

DELETE.

§ 1054.630 What provisions apply for importation of individual items for personal use?

DELETE.

§ 1054.635 What special provisions apply for small-volume engine and equipment manufacturers?

DELETE,
REPLACE WITH:
This section describes how we apply the special provisions in this part for small-volume engine and equipment manufacturers. Small-volume engine and equipment manufacturers may use assigned deterioration factors. See §1054.245.

§ 1054.640 What special provisions apply to branded engines?

* * * * *

§ 1054.645 What special provisions apply for converting an engine to use an alternate fuel?
DELETE,
REPLACE WITH:
An Executive Order is no longer valid for an engine if the engine is modified such that it is not in a configuration covered by the Executive Order. Such engines may need to be recertified as specified in 40 CFR part 1054 if the Executive Order is no longer valid for that engine.

DELETE.

§ 1054.650 What special provisions apply for adding or changing governors?

* * * * *

(b) DELETE.

§ 1054.655 What special provisions apply for installing and removing altitude kits?
DELETE,
REPLACE WITH:

An action for the purpose of installing or modifying altitude kits and performing other changes to compensate for changing altitude is not considered a prohibited act as long as it is done consistent with the manufacturer's instructions.

§ 1054.660 What are the provisions for exempting emergency rescue equipment?
DELETE,
REPLACE WITH:
Fire and police departments and other entities that specialize in emergency response may purchase emergency equipment powered by a non-California certified engine under the provisions specified in Title 13, Chapter 9, Article 1, Section 2403(f).

§ 1054.690 What bond requirements apply for certified engines?
DELETE.

Subpart H—Averaging, Banking and Trading for Certification

§1054.701 General Provisions.

DELETE,
REPLACE WITH:
Each manufacturer must comply with all provisions of the averaging, banking, and trading program outlined in Title 13, California Code of Regulations, Sections 2408-2409, for each engine family participating in that program.

Subpart I—Definitions and Other Reference Information

§ 1054.801 What definitions apply to this part?
DELETE,
REPLACE WITH:
The following definitions apply to this part. The definitions apply to all subparts unless we note otherwise. All undefined terms have the meaning California's Health and Safety Code gives to them. The definitions follow:

Adjustable parameter DELETE,
REPLACE WITH:
Adjustable parameter means any device, system, or element of design that someone can adjust (including those which are difficult to access) and that, if adjusted, may affect emissions or engine performance during emission testing or normal in-use operation.

* * * * *

Alcohol-fueled engine DELETE.

Amphibious vehicle DELETE.

Applicable emission standard or *applicable standard* DELETE,
REPLACE WITH:
Applicable emission standard or *applicable standard* means an emission standard to which an engine (or equipment) is subject. Additionally, if an engine (or equipment) has been or is being certified to another standard or FEL, *applicable emission standard* means the FEL or other standard to which the engine (or equipment) has been or is being certified.

* * * * *

ADD:
Certificate of Conformity means an Executive Order issued in accordance with the California Health and Safety Code, Division 26, Part 5 chapters 1 and 2.

Certification DELETE,
REPLACE WITH:
Certification means, with respect to new small off-road engines, obtaining an executive order for an engine family complying with the small off-road engine emission standards and requirements specified in the California Code of Regulations, Title 13, chapter 9, Sections 2400-2409.

Certified emission level DELETE.

Class I DELETE.

Class II DELETE.

Class III DELETE.

Class IV DELETE.

Class V DELETE.

Clean Air Act DELETE.

Cold-weather equipment DELETE.

Crankcase emissions DELETE.

* * * * *

Date of manufacture DELETE.

Days DELETE,
REPLACE WITH:
Days means calendar days unless otherwise specified. For example, when we specify working days we mean calendar days, excluding weekends and California state holidays.

Designated Compliance Officer DELETE,
REPLACE WITH:
Designated Compliance Officer means the Executive Officer of the Air Resources Board or a designee of the Executive Officer.

Designated Enforcement Officer DELETE.

* * * * *

Deterioration factor DELETE,
REPLACE WITH:
Deterioration factor means the relationship between emissions at the end of useful life and emissions at the low-hour test point (see §§1054.240 and 1054.245), expressed as the ratio of emissions at the end of useful life to emissions at the low-hour test point.

* * * * *

Dry weight DELETE.

* * * * *

Emission control system DELETE.

* * * * *

Engine DELETE,
REPLACE WITH:
Engine as used in this part, refers to small off-road engine.

* * * * *

Engine manufacturer DELETE.

ADD:
EPA means Air Resources Board.

* * * * *

Equipment manufacturer DELETE,
REPLACE WITH:
Equipment manufacturer means a manufacturer of equipment with an engine . All such equipment manufacturing entities under the control of the same person are considered to be a single equipment manufacturer.

Evaporative DELETE,
REPLACE WITH:
Evaporative means relating to fuel emissions controlled by Title 13, California Code of Regulations, Chapter 15, Article 1. This generally includes emissions that result from permeation of fuel through the fuel-system materials or from ventilation of the fuel system.

Excluded DELETE.

ADD:
Executive Order means an order issued by the Executive Officer of the Air Resources Board or his or her delegate certifying engines for sale in California.

Exempted DELETE.

* * * * *

Family emission limit (FEL) DELETE,
REPLACE WITH:
Family emission limit (FEL) means an emission level declared by the manufacturer that will be used in the ABT program. The family emission level will

take the place of an otherwise applicable emission standard. The family emission limit must be expressed to the same number of decimal places as the emission standard it replaces. The family emission limit serves as the emission standard for the engine family (exhaust) or emission family (evaporative) with respect to all required testing.

* * * * *

Fuel line DELETE.

* * * * *

Good engineering judgment DELETE.

Handheld DELETE,
REPLACE WITH:
Handheld means equipment that contains an engine with a displacement of less than 80cc.

* * * * *

Integrated equipment manufacturer DELETE.

* * * * *

Manufacturer DELETE.

Marine engine DELETE.

Marine generator engine DELETE.

Marine vessel DELETE.

* * * * *

Maximum test torque DELETE.

Model year DELETE.

Motor vehicle DELETE.

New nonroad engine DELETE.

New nonroad equipment DELETE.

Noncompliant engine or noncompliant equipment DELETE.

Nonconforming engine or nonconforming equipment DELETE.

* * * * *

Nonintegrated equipment manufacturer DELETE.

Nonmethane hydrocarbon DELETE,
REPLACE WITH:
Nonmethane hydrocarbon (NMHC) means the sum of all hydrocarbon species except methane. Refer to §1065.660 for NMHC determination.

* * * * *

Nonroad DELETE.

Nonroad engine DELETE,
REPLACE WITH:
Nonroad engine means a small off-road engine as defined in the California Code of Regulations, Title 13, Chapter 9, Section 2401.

* * * * *

Permeation emissions DELETE.

Phase 1 DELETE.

Phase 2 DELETE.

Phase 3 DELETE.

* * * * *

Pressurized oil system DELETE.

* * * * *

Rated-speed equipment DELETE
REPLACE WITH:
Rated-speed equipment means equipment in which the installed engine is intended for operation at a rated speed that is nominally 3600 rpm or higher.

Recreational application DELETE.

* * * * *

Revoke DELETE.

* * * * *

Running loss emissions DELETE.

* * * * *

Small-volume emission family DELETE.

Small-volume engine manufacturer DELETE,
REPLACE WITH:
Small-volume engine manufacturer means any engine manufacturer whose total production of small off-road engines slated for sale in California are projected at the time of certification of a given model year to be nor more than 500 engines.

Small-volume equipment manufacturer DELETE.

* * * * *

Structurally integrated nylon fuel tank DELETE.

Subchapter U DELETE.

Suspend DELETE.

* * * * *

Tethered gas cap DELETE.

* * * * *

Total hydrocarbon DELETE,
REPLACE WITH:
Total hydrocarbon (THC) means the combined mass of organic compounds measured by the specified procedure for measuring total hydrocarbon, expressed as a hydrocarbon with a hydrogen-to-carbon mass ratio of 1.85:1.
Total hydrocarbon equivalent DELETE,
REPLACE WITH:
Total hydrocarbon equivalent (THCE) means the sum of the carbon mass contributions of non-oxygenated hydrocarbons, alcohols and aldehydes, or other organic compounds that are measured separately as contained in a gas sample, expressed as exhaust hydrocarbon from petroleum-fueled engines. The hydrogen-to-carbon ratio of the equivalent hydrocarbon is 1.85:1.

* * * * *

Ultimate purchaser DELETE,
REPLACE WITH:
Ultimate purchaser means, with respect to any new small off-road equipment or new small off-road engine, the first person who in good faith purchases such new off-road equipment or new off-road engine for purposes other than resale.

United States DELETE.

Upcoming model year DELETE.

U.S.-directed production volume DELETE.

Useful life DELETE,
REPLACE WITH:
Useful life means the period during which the engine and equipment are designed to properly function in terms of power output and intended function, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. It is the period during which an off-road engine must comply with all applicable emission standards. If an engine has no hour meter, the specified number of hours does not limit the period during which an in-use engine is required to comply with emission standards unless the degree of service accumulation can be verified separately.

* * * * *

Vessel DELETE.

Void DELETE.

* * * * *

We (us, our) DELETE:
REPLACE WITH:
We (us, our) means the Air Resources Board and any authorized representatives.

* * * * *

§ 1054.805 What symbols, acronyms, and abbreviations does this part use?

* * * * *

§ 1054.815 What provisions apply to confidential information?
DELETE,

REPLACE WITH:
(a) Clearly show what you consider confidential by marking, circling, bracketing, stamping, or some other method.

(b) We will handle your confidential information as described in Title 17, California Code of Regulations, Section 91000-91022.

(c) If you send us information without claiming it is confidential, we may make it available to the public without further notice to you.

§ 1054.820 How do I request a hearing?
DELETE,
REPLACE WITH:
The hearing procedure set forth in Subchapter 1.25, Title 17, California Code of Regulations, Section 60040, et seq. apply to this subpart.

ADD:
§ 1054.821 Right of entry and access.

(a) Any engine manufacturer affected by these regulations, upon receipt of prior notice must admit or cause to be admitted during operating hours any ARB Enforcement Officer that has presented proper credentials to any of the following:

(1) Any facility where tests or procedures or activities connected with such tests or procedures are or were performed.

(2) Any facility where any new small off-road engine is present and is being, has been, or will be tested.

(3) Any facility where a manufacturer constructs, assembles, modifies, or builds-up an engine into a certification engine that will be tested for certification.

(4) Any facility where any record or other document relating to any of the above is located.

(b) Upon admission to any facility referred to in paragraph (c)(1) of this Section, any ARB Enforcement Officer must be allowed:

(1) To inspect and monitor any part or aspect of such procedures, activities, and testing facilities, including, but not limited to, monitoring engine preconditioning, emissions tests and break-in, maintenance, and engine storage procedures.

(2) To verify correlation or calibration of test equipment; and,

(3) To inspect and make copies of any such records, designs, or other documents; and,

(4) To inspect and/or photograph any part or aspect of any such certification engine and any components to be used in the construction thereof.

(c) To permit an ARB determination whether production small off-road engines conform in all material respects to the design specifications that apply to those engines described in the Executive Order certifying such engines and to standards prescribed herein. Engine manufacturers must, upon receipt of prior notice, admit any ARB Enforcement Officer, upon presentation of credentials, to:

(1) Any facility where any document design, or procedure relating to the translation of the design and construction of engines and emission related components described in the application for certification or used for certification testing into production engines is located or carried on; and,

(2) Any facility where any small off-road engines to be introduced into commerce are manufactured or assembled.

(3) Any California retail outlet where any small off-road engine is sold.

(d) On admission to any such facility referred to in this Section, any ARB Enforcement Officer must be allowed:

(1) To inspect and monitor any aspects of such manufacture or assembly and other procedures;

(2) To inspect and make copies of any such records, documents or designs; and,

(3) To inspect and photograph any part or aspect of any such new small off-road engines and any component used in the assembly thereof that are reasonably related to the purpose of the Enforcement Officer's entry.

(e) Any ARB Enforcement Officer must be furnished by those in charge of a facility being inspected with such reasonable assistance as may be necessary to discharge any function listed in this paragraph. Each applicant for or recipient of certification is required to cause those in charge of a facility operated for its benefit to furnish such reasonable assistance without charge to the ARB irrespective of whether or not the applicant controls the facility.

(f) The duty to admit or cause to be admitted any ARB Enforcement Officer applies whether or not the applicant owns or controls the facility in question and applies both to domestic and foreign engine manufacturers and facilities. The ARB will not attempt to make any inspections that it has been informed that local

law forbids. However, if local law makes it impossible to insure the accuracy of data generated at a facility, no informed judgment that an engine is certifiable or is covered by an Executive Order can properly be based on the data. It is the responsibility of the engine manufacturer to locate its testing and manufacturing facilities in jurisdictions where this situation will not arise.

(g) For purposes of this Section:

(1) "Presentation of credentials" means a display of a document designating a person to be an ARB Enforcement Officer.

(2) Where engine, component, or engine storage areas or facilities are concerned, "operating hours" means all times during which personnel are at work in the vicinity of the area or facility and have access to it.

(3) Where facilities or areas other than those covered by paragraph (g)(2) of this Section are concerned, "operating hours" means all times during which an assembly line is in operation or during which testing, maintenance, break-in procedure, production or compilation of records, or any other procedure or activity is being conducted related to certification testing, translation of designs from the test stage to the production stage, or engine manufacture or assembly.

(4) "Reasonable assistance" includes, but is not limited to, providing clerical, copying, interpretation and translation services; making personnel available upon request to inform the ARB Enforcement Officer of how the facility operates and to answer questions; and performing requested emissions tests on any engine that is being, has been, or will be used for certification testing. Such tests must be nondestructive, but may require appropriate break-in. The engine manufacturer must be compelled to cause the personal appearance of any employee at such a facility before an ARB Enforcement Officer, upon written request from the Executive Officer for the appearance of any employee of a facility, and service of such request upon the engine manufacturer. Any such employee who has been instructed by the engine manufacturer to appear will be entitled to be accompanied, represented, and advised by counsel.

§ 1054.825 What reporting and recordkeeping requirements apply under this part?
DELETE,
REPLACE WITH:
The following items illustrate the kind of reporting and recordkeeping we require for engines and equipment regulated under this part:

* * * * *

(a) (1) DELETE.

(a) (2) DELETE.

(a) (3) DELETE.

(a) (4) DELETE.

(a) (5) DELETE.

* * * * *

(a) (8) DELETE.

(b) DELETE.

* * * * *

(d) DELETE.

Appendix II to Part 1054—Duty Cycles for Laboratory Testing

* * * * *

APPENDIX I

PROPOSED TEST PROCEDURES
(Part 1065)

Small Off-Road Engines

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Adopt incorporated "California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines" (40 CFR, Part 1065) to read:

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State of California
AIR RESOURCES BOARD

CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR NEW 2013 AND LATER SMALL OFF-ROAD ENGINES

ENGINE-TESTING PROCEDURES (PART 1065)

Adopted: [insert date of adoption]

NOTE: This document incorporates by reference portions of Title 40 of the Code of Federal Regulations (CFR) Part 1065 – Engine-Testing Procedures, Subparts A through K inclusive, as amended June 28, 2011; and, the internally referenced sections of Title 40 CFR, Parts 60, 80, 86, 90, 1054, and 1068. Sections that have been included in their entirety are set forth with the section number and title. California provisions that replace specific federal language provisions are denoted by the words "DELETE" for the federal language and "REPLACE WITH" or "ADD" for the California language. The symbols "* * * * *" and "..." mean that the remainder of the CFR text for a specific section is not shown in these procedures but has been incorporated by reference, with only the printed text changed. CFR sections that are not listed are not part of California's test procedures. If there is any conflict between the provisions of this document and the California Health and Safety Code, Division 26, or Title 13 of the California Code of Regulations (CCR), the Health and Safety Code and Title 13 apply.

This document is all newly adopted text.

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CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR NEW 2013 AND LATER SMALL OFF-ROAD ENGINES

The following provisions of Part 1065, Title 40, Code of Federal Regulations, as promulgated by the United States Environmental Protection Agency on the date listed, are adopted and incorporated herein by this reference for 2013 model year and later small off-road engines as the California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines, except as altered or replaced by the provisions set forth below.

PART 1065 – ENGINE-TESTING PROCEDURES

SOURCE: 76 FR 37977, June 28, 2011, unless otherwise noted.

Subpart A – Applicability and General Provisions

§ 1065.1 Applicability.

* * * * *

(a) DELETE,
REPLACE WITH:
(a) (1) This part applies to 2013 and later model year small off-road engines regulated under Title 13, California Code of Regulations, Chapter 9, Article 1, and subject to the emission standards in § 2403(b)(1) of that Article. These provisions do not apply to engines and equipment that fall within the scope of the preemption of Section 209(e)(1)(A) of the Federal Clean Air Act, as amended, and as defined by regulation of the Environmental Protection Agency.

(2) Every new small off-road engine that is manufactured for sale, sold, offered for sale, introduced or delivered or imported into California for introduction into commerce and that is subject to any of the standards prescribed herein is required to be covered by an Executive Order issued pursuant to Article 1, Chapter 9, Title 13, California Code of Regulations, including these Test Procedures.

* * * * *

(d) DELETE,
REPLACE WITH:
Paragraph (a) of this section identifies the parts of the CFR that define emission standards and other requirements for particular types of engines. In this part, we refer

to each section of the Article 1, Chapter 9, Title 13, California Code of Regulations, and the incorporated CFR part 1054, generically as the "standard-setting part."

* * * * *

(g) DELETE,
REPLACE WITH:
For additional information regarding these test procedures, visit our Web site at http://www.arb.ca.gov/msprog/offroad/sore/sore.htm

§ 1065.2 Submitting information to ARB under this part.

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§ 1065.5 Overview of this part 1065 and its relationship to the standard-setting part.

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§ 1065.10 Other procedures.

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§ 1065.12 Approval of alternate procedures.

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§ 1065.15 Overview of procedures for laboratory and field testing.

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§ 1065.20 Units of measure and overview of calculations.

* * * * *

§ 1065.25 Recordkeeping.

* * * * *

Subpart B – Equipment Specifications

§ 1065.101 Overview.

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§ 1065.110 Work inputs and outputs, accessory work, and operator demand.

* * * * *

§ 1065.120 Fuel properties and fuel temperature and pressure.

* * * * *

§ 1065.122 Engine cooling and lubrication.

(a) DELETE,
REPLACE WITH:
The use of auxiliary fans for engine cooling must be indicated in the application for certification. The manufacturer must detail the use of such fans and demonstrate that the supplemental cooling resulting from the use of the fans is representative of in-use engine operation. The records must be maintained by the manufacturer and must be made available to the Executive Officer upon request.

(b) DELETE

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§ 1065.125 Engine intake air.

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§ 1065.127 Exhaust gas recirculation.

* * * * *

§ 1065.130 Engine exhaust.

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(g) DELETE

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§ 1065.140 Dilution for gaseous and PM constituents.

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§ 1065.145 Gaseous and PM probes, transfer lines, and sampling system components.

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§ 1065.150 Continuous sampling.

* * * * *

§ 1065.170 Batch sampling for gaseous and PM constituents.

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§ 1065.190 PM-stabilization and weighing environments for gravimetric analysis.

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§ 1065.225 Intake-air flow meter.

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§ 1065.230 Raw exhaust flow meter.

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§ 1065.240 Dilution air and diluted exhaust flow meters.

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§ 1065.245 Sample flow meter for batch sampling.

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§ 1065.248 Gas divider.

* * * * *

CO and CO_2 Measurements

§ 1065.250 Nondispersive infra-red analyzer.

* * * * *

Hydrocarbon Measurements

§ 1065.260 Flame-ionization detector.

* * * * *

§ 1065.265 Nonmethane cutter.

* * * * *

§ 1065.267 Gas chromatograph.

* * * * *

NO_x and N_2O Measurements

§ 1065.270 Chemiluminescent detector.

* * * * *

§ 1065.272 Nondispersive ultraviolet analyzer.

* * * * *

§ 1065.275 N_2O measurement devices.

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O_2 Measurements

§ 1065.280 Paramagnetic and magnetopneumatic O_2 detection analyzers.

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§ 1065.284 Zirconia (ZrO_2) analyzer.

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§ 1065.307 Linearity verification.

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* * * * *

§ 1065.309 Continuous gas analyzer system-response and updating-recording verification – for gas analyzers continuously compensated for other gas species.

* * * * *

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§ 1065.325 Intake-flow calibration.

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* * * * *

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* * * * *

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* * * * *

§ 1065.644 Vacuum-decay leak rate.

* * * * *

§ 1065.645 Amount of water in an ideal gas.

* * * * *

§ 1065.650 Emission calculations.

* * * * *

ADD:
(i) For PM testing, engine manufacturers must use the particulate sampling test procedure specified in this part 1065 or any similar procedure that has been approved by the Executive Officer. For two-stroke engines, engine manufacturers may, in lieu of testing, determine PM emissions through the following equation:

$$PM_{est} = \frac{HC}{\text{Fuel to oil ratio}}$$

Where HC = weighted hydrocarbons in g/kW-hr, and
Fuel to oil ratio = the fuel to oil ratio used in the test engine.

Engine manufacturers may report this estimate as PM_{est}, and indicate that the PM emissions were estimated as per this paragraph.

§ 1065.655 Chemical balances of fuel, intake air, and exhaust.

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§ 1065.659 Removed water correction.

* * * * *

§ 1065.660 THC, NMHC, and CH_4 determination.

* * * * *

§ 1065.665 THCE and NMHCE determination.

* * * * *

§ 1065.667 Dilution air background emission correction.

* * * * *

§ 1065.670 NO_x intake-air humidity and temperature corrections.

* * * * *

§ 1065.672 Drift correction.

* * * * *

§ 1065.675 CLD quench verification calculations.

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§ 1065.690 Buoyancy correction for PM sample media.

* * * * *

§ 1065.695 Data requirements.

* * * * *

Subpart H –Engine Fluids, Test Fuels, Analytical Gases and Other Calibration Standards

§ 1065.701 General requirements for test fuels.

(a) DELETE,
REPLACE WITH:

(a) Certification test fuel.

(1) The certification test fuel used for emission testing must be consistent with the fuel specifications as outlined in the California Code of Regulations, title 13, §1960.1, and the "California Exhaust Emission Standards and Test Procedures for 2001 – 2014 Model Passenger Cars, Light Duty Trucks, and Medium-Duty Vehicles", as last amended [insert latest amendment date], and as incorporated by reference herein. The test fuel specification should remain consistent from batch to batch. If a particular engine requires a different octane fuel, test records should indicate the fuel used.

(2) For 2019 and later gasoline-fueled engines: The certification test fuel for emission testing must be consistent with the fuel specifications as outlined in title 13, section 1961.2 and the "California Exhaust Emission Standards and Test Procedures for 2015 and Subsequent Model Passenger Cars, Light Duty Trucks, and Medium Duty Vehicles," adopted [insert adoption date], and incorporated by reference herein. The test fuel specifications must remain consistent from batch to batch.

(3) For 2013 – 2018 model-year gasoline-fueled engines, the manufacturer has the option to use the certification test fuel specified in §1065.701(a)(2).

(4) Alcohol-based fuels. Alcohol-based fuels must be allowed for emission test purposes when the appropriate emission standards with respect to such fuels are a part of these provisions. Such fuels must be as specified in either §1065.701(a)(1) or §1065.701(a)(2), as applicable.

(b) DELETE,
REPLACE WITH:
With Executive Officer approval, the certifying entity may use other test fuels so long as they do not affect the demonstration of compliance.

* * * * *

(f) DELETE,
REPLACE WITH:

(f) Test fuels – service accumulation and aging.

(1) Gasoline.

(i) Gasoline representative of commercial gasoline generally available through retail outlets must be used in service accumulation and aging for gasoline fueled, spark ignition engines. As an alternative, the certification test fuels specified under either §1054.501(b)(2)(ii)(A) or §1054.501(b)(2)(ii)(B), as applicable, may be used for engine service accumulation and aging.

(ii) The octane rating of the gasoline used for service accumulation and aging must be no higher than 4.0 Research Octane Numbers above the minimum recommended by the engine manufacturer when a certification fuel is not used for service accumulation, and must have a minimum sensitivity of 7.5 Octane Numbers. Sensitivity is the Research Octane Number minus the Motor Octane Number.

(iii) The Reid Vapor Pressure of a gasoline used for service accumulation and aging must be characteristic of the engine fuel during the season in which the service accumulation takes place in the outdoors, or must be characteristic of the engine fuel appropriately suited to the ambient conditions of an indoor test cell in which the entire service accumulation takes place.

(2) Alternative fuels.

(i) Liquefied petroleum gas meeting the ASTM D1835 (11/10/1997) or NGPA HD-5 (1970) specifications must be used for service accumulation.

(ii) Natural gas representative of commercial natural gas that is available locally to the manufacturer's test site may be used in service accumulation. The manufacturer must provide the Executive Officer with detail of how the commercial natural gas differs from the certification test fuel specifications.

* * * * *

§ 1065.703 Distillate diesel fuel.

DELETE

§ 1065.705 Residual and intermediate residual fuel.

DELETE

§ 1065.710 Gasoline.

DELETE

§ 1065.715 Natural gas.

DELETE

§ 1065.720 Liquefied petroleum gas.

DELETE

§ 1065.740 Lubricants.

* * * * *

ADD:
(c) During all engine tests, the engine shall employ a lubricating oil consistent with the engine manufacturer's specifications for that particular engine. These specifications shall be recorded and declared in the certification application.

§ 1065.745 Coolants.

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§ 1065.750 Analytical gases.

* * * * *

§ 1065.790 Mass standards.

* * * * *

Subpart I – Testing with Oxygenated Fuels

§ 1065.801 Applicability.

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§ 1065.805 Sampling system.

* * * * *

§ 1065.845 Response factor determination.

* * * * *

§ 1065.850 Calculations.

* * * * *

Subpart J – Field Testing and Portable Emission Measurement Systems

§ 1065.901 Applicability.

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§ 1065.905 General provisions.

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§ 1065.910 PEMS auxiliary equipment for field testing.

* * * * *

§ 1065.915 PEMS instruments.

* * * * *

§ 1065.920 PEMS calibrations and verifications.

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§ 1065.925 PEMS preparation for field testing.

* * * * *

§ 1065.930 Engine starting, restarting, and shutdown.

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§ 1065.935 Emission test sequence for field testing.

* * * * *

§ 1065.940 Emission calculations.

* * * * *

Subpart K – Definitions and Other Reference Information

§ 1065.1001 Definitions.

ADD:
The definitions in Section 2401, Chapter 9, Title 13 of the California Code of Regulations, 40 CFR 1054.801, and 1068.30 apply with the following additions:

* * * * *

Act DELETE.

Adjustable parameter DELETE,
REPLACE WITH:
Adjustable parameter means any device, system, or element of design that someone can adjust (including those which are difficult to access) and that, if adjusted, may affect emissions or engine performance during emission testing or normal in-use operation. This includes, but is not limited to, parameters related to injection timing and fueling rate. You may ask us to exclude a parameter that is difficult to access if it cannot be adjusted to affect emissions without significantly degrading engine performance, or if you otherwise show us that it will not be adjusted in a way that affects emissions during in-use operation.

* * * * *

Aftertreatment DELETE,
REPLACE WITH:
Aftertreatment means relating to a catalytic converter, particulate filter, thermal reactor, or any other system, component, or technology mounted downstream of the exhaust valve (or exhaust port) whose design function is to decrease emissions in the engine exhaust before it is exhausted to the environment. Exhaust-gas recirculation (EGR), turbochargers, and oxygen sensors are not aftertreatment.

* * * * *

Applicable standard DELETE,
REPLACE WITH:
Applicable emission standard or *applicable standard* means an emission standard to which an engine (or equipment) is subject. Additionally, if an engine (or equipment) has been or is being certified to another standard or FEL, *applicable emission standard* means the FEL or other standard to which the engine (or equipment) has been or is being certified.

* * * * *

Brake power DELETE,
REPLACE WITH:
Brake power means the usable power output of the engine, not including power required to fuel, lubricate, or heat the engine, circulate coolant to the engine, or to operate aftertreatment devices.

* * * * *

Calibration DELETE,
REPLACE WITH:
Calibration means the set of specifications and tolerances specific to a particular design, version, or application of a component or assembly capable of functionally describing its operation over its working range.

* * * * *

ADD:
Certificate of Conformity means an Executive Order issued in accordance with the California Health and Safety Code, Division 26, Part 5.

Certification DELETE,
REPLACE WITH:
Certification means, with respect to new small off-road engines, obtaining an executive order for an engine family complying with the small off-road engine emission standards and requirements specified in the California Code of Regulations, Title 13, Chapter 9, Sections 2400-2409.

* * * * *

Designated Compliance Officer DELETE,
REPLACE WITH:
Designated Compliance Officer means the Executive Officer of the Air Resources Board, or a designee of the Executive Officer.

* * * * *

Discrete-mode DELETE,
REPLACE WITH:
Discrete-mode means relating to the discrete-mode type of steady-state test described in §1054.505.

* * * * *

Engine DELETE,
REPLACE WITH:
Engine as used in this part, refers to small off-road engine.

* * * * *

ADD:
EPA means Air Resources Board.

ADD:
Executive Order means an order issued by the Executive Officer of the Air Resources Board or his or her delegate certifying engines for sale in California.

* * * * *

Fuel type DELETE,
REPLACE WITH:
Fuel type means a general category of fuels such as gasoline or natural gas. There can be multiple grades within a single fuel type, such as low-temperature or all-season gasoline.

Good engineering judgment DELETE.

* * * * *

Hydrocarbon DELETE,
REPLACE WITH:
Hydrocarbon (HC) means the hydrocarbon group on which the emission standards are based for each fuel type, as described in subpart B of 40 CFR 1054.

* * * * *

Manufacturer DELETE.

* * * * *

Nonroad engine DELETE,
REPLACE WITH:
Nonroad engine means a small off-road engine as defined in the California Code of Regulations, Title 13, Chapter 9, Section 2401.

* * * * *

Ramped-modal DELETE,
REPLACE WITH:
Ramped-modal means ramped-modal type of steady-state test, as described in 40 CFR 1054.

* * * * *

ADD:
Small volume engine manufacturer means any engine manufacturer whose total production of small off-road engines slated for sale in California are projected at the time of certification of a given model year to be no more than 500 engines.

* * * * *

Steady-state DELETE,
REPLACE WITH:
Steady-state means relating to emission tests in which engine speed and load are held at a finite set of essentially constant values. Steady-state tests are either discrete-mode tests or ramped-modal tests.

* * * * *

Test sample DELETE,
REPLACE WITH:
Test sample means the collection of engines selected from the population of an emission family for emission testing. This may include testing for certification, production-line testing, or in-use testing.

* * * * *

United States DELETE.

* * * * *

Useful life DELETE,
REPLACE WITH:
Useful life means the period during which the engine and equipment are designed to properly function in terms of power output and intended function, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. It is the period during which an off-road engine must comply with

all applicable emission standards. If an engine has no hour meter, the specified number of hours does not limit the period during which an in-use engine is required to comply with emission standards unless the degree of service accumulation can be verified separately.

* * * * *

We (us, our) DELETE,
REPLACE WITH:
We (us, our) means the Executive Officer of the Air Resources Board or a designee of the Executive Officer.

* * * * *

§ 1065.1005 Symbols, abbreviations, acronyms, and units of measure.

* * * * *

§ 1065.1010 Reference materials.

* * * * *

APPENDIX J

PROPOSED TEST PROCEDURES

Part I – C

(Parts 1039/1065/1068)

(2008 – 2010 Model Years)

Tier 4 Off-Road Compression-Ignition Engines

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State of California

AIR RESOURCES BOARD

California Exhaust Emission Standards and Test Procedures for New 2008-2010 Tier 4 Off-Road Compression-Ignition Engines

PART I-C

Adopted: October 20, 2005

Amended: (Date of amendment)

NOTE: This document incorporates by reference 40 Code of Federal Regulations (CFR) part 1039, subparts A, B, C, D, E, F, G, H, and I, including Appendix I, II, III, IV, V, and VI to part 1039, as amended July 13, 2005, 40 CFR Part 1065, Subparts A, B, C, D, E, F, G, H, I, J, and K, as amended July 13, 2005, 40 CFR Part 1068, Subparts A, B, C, D, E, F, and G, including Appendix A to Subpart E and Appendix I and II to part 1068, as amended July 13, 2005, and the internally referenced subparts of 40 CFR Part 85, 40 CFR Part 86, and 40 CFR Part 89. This is an original document and all language contained herein is set forth in standard type. Incorporated sections that have been included in their entirety are set forth with the section number and title. California provisions that replace specific federal provisions are denoted by the words "DELETE" for the federal language and "REPLACE WITH" or "ADD" for the California language. The symbols "* * * * *" and "..." mean that the remainder of the CFR text for a specific section, although not shown, has been incorporated into these test procedures by reference, unchanged. CFR sections that are not listed are not part of the test procedures. If there is any conflict between the provisions of this document and the California Health and Safety Code, Division 26, or Title 13 of the California Code of Regulations (CCR), the Health and Safety Code and Title 13 apply.

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State of California

AIR RESOURCES BOARD

California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines

PART I-E

Adopted: (Date of adoption)

NOTE: This document incorporates by reference 40 Code of Federal Regulations (CFR) Part 1065, Subparts A, B, C, D, E, F, G, H, I, J, and K, as amended June 28, 2011, and the subparts of 40 CFR Part 60, 40 CFR Part 85, 40 CFR Part 86, 40 CFR Part 89, 40 CFR Part 92, and 40 CFR Part 1033 that are internally referenced within 40 CFR Part 1065. This is an original document newly incorporated by reference in Title 13, California Code of Regulations, Section 2421(a)(4)(B); therefore, all language contained herein is set forth in standard type. Incorporated sections that have been included in their entirety are set forth with the section number and title. California provisions that replace specific federal provisions are denoted by the words "DELETE" for the federal language and "REPLACE WITH" or "ADD" for the California language. The symbols " * * * * * " and "..." mean that the remainder of the CFR text for a specific section, although not shown, has been incorporated into these test procedures by reference, unchanged. CFR sections that are not listed are not part of these California test procedures. If there is any conflict between the provisions of this document and the California Health and Safety Code, Division 26, or Title 13 of the California Code of Regulations (CCR), the Health and Safety Code and Title 13 apply.

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CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR NEW 2011 AND LATER TIER 4 OFF-ROAD COMPRESSION-IGNITION ENGINES

The following provisions of Part 1065, Title 40, Code of Federal Regulations, as promulgated by the United States Environmental Protection Agency on the date listed, are adopted and incorporated herein by this reference for 2011 model year and later off-road compression-ignition engines as the California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-E, except as altered or replaced by the provisions set forth below.

PART 1065 – ENGINE-TESTING PROCEDURES

SOURCE: 76 FR 37977.

Subpart A – Applicability and General Provisions

§ 1065.1 Applicability.

(a)(1) DELETE,

REPLACE WITH:

(a)(1) Reserved.

(a)(2) DELETE,

REPLACE WITH:

(a)(2) Reserved.

(a)(3) DELETE,

REPLACE WITH:

(a)(3) Land-based off-road compression-ignition engines regulated under Title 13, CCR, Chapter 9, Article 4, and subject to the emission standards in § 2423(b)(1)(B) of that Article.

(a)(4) DELETE,

REPLACE WITH:

(a)(4) Reserved.

(a)(5) DELETE,

REPLACE WITH:

(a)(5) Reserved.

(a)(6) DELETE,

REPLACE WITH:

(a)(6) Reserved.

(a)(7) DELETE,

REPLACE WITH:

(a)(7) Reserved.

(a)(8) DELETE,

REPLACE WITH:

(a)(8) Reserved.

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(g) DELETE.

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§ 1065.650 Emission calculations.

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§ 1065.655 Chemical balances of fuel, intake air, and exhaust.

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§ 1065.659 Removed water correction.

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§ 1065.660 THC, NMHC, and CH_4 determination.

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§ 1065.665 THCE and NMHCE determination.

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§ 1065.667 Dilution air background emission correction.

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§ 1065.670 NO_x intake-air humidity and temperature corrections.

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§ 1065.672 Drift correction.

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§ 1065.675 CLD quench verification calculations.

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§ 1065.690 Buoyancy correction for PM sample media.

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§ 1065.695 Data requirements.

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Subpart H – Engine Fluids, Test Fuels, Analytical Gases and Other Calibration Standards

§ 1065.701 General requirements for test fuels.

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(b) DELETE,

REPLACE WITH:

With Executive Officer approval, the certifying entity may use other test fuels so long as they do not affect the demonstration of compliance.

* * * * *

§ 1065.703 Distillate diesel fuel.

* * * * *

ADD:

(d) The Executive Officer may allow other fuel specifications, such as California diesel fuel, so long as they do not affect the demonstration of compliance.

§ 1065.705 Residual and intermediate residual fuel.

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§ 1065.710 Gasoline.

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§ 1065.715 Natural gas.

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§ 1065.720 Liquefied petroleum gas.

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§ 1065.740 Lubricants.

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§ 1065.745 Coolants.

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§ 1065.750 Analytical gases.

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§ 1065.790 Mass standards.

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Subpart I – Testing with Oxygenated Fuels

§ 1065.801 Applicability.

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§ 1065.805 Sampling system.

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§ 1065.845 Response factor determination.

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§ 1065.850 Calculations.

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Subpart J – Field Testing and Portable Emission Measurement Systems

§ 1065.901 Applicability.

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§ 1065.905 General provisions.

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§ 1065.910 PEMS auxiliary equipment for field testing.

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§ 1065.915 PEMS instruments.

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§ 1065.920 PEMS Calibrations and verifications.

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§ 1065.925 PEMS preparation for field testing.

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§ 1065.930 Engine starting, restarting, and shutdown.

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§ 1065.935 Emission test sequence for field testing.

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§ 1065.940 Emission calculations.

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Subpart K – Definitions and Other Reference Information

§ 1065.1001 Definitions.

ADD:

40 CFR part 1039 or Part 1039 means Part 1039 and applicable subparts of the California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, PART I-D, when referenced in unrevised (i.e., " * * * * * * ") sections. When referenced in revised sections, the term

40 CFR part 1039 refers to the federal regulations of the same title, last amended on June 28, 2011.

ADD:

40 CFR part 1065 or Part 1065 means Part 1065 and applicable subparts of the California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, PART I-E, when referenced in

unrevised (i.e., " * * * * * * ") sections. When referenced in revised sections, the term 40 CFR part 1065 refers to the federal regulations of the same title, last amended on June 28, 2011.

ADD:

40 CFR part 1068 or Part 1068 means Part 1068 and applicable subparts of the California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, PART I-F, when referenced in

unrevised (i.e., " * * * * * * ") sections. When referenced in revised sections, the term 40 CFR part 1068 refers to the federal regulations of the same title, last amended on June 28, 2011.

* * * * *

Designated Compliance Officer DELETE.

REPLACE WITH:

Designated Compliance Officer means the Executive Officer of the Air Resources Board, or a designee of the Executive Officer.

* * * * *

ADD:

ADDENDUM: The definitions in §1039.801 of the California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, PART I-D, apply.

§ 1065.1005 Symbols, abbreviations, acronyms, and units of measure.

* * * * *

§ 1065.1010 Reference materials.

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APPENDIX M

PROPOSED TEST PROCEDURES

Part I – F (Part 1068)

(2011 and Later Model Years)

Tier 4 Off-Road Compression-Ignition Engines

State of California

AIR RESOURCES BOARD

California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines

PART I-~~C~~F

Adopted: October 20, 2005

Amended: (Date of amendment)

NOTE: The source for this document is Part 1068 of the "California Exhaust Emission Standards and Test Procedures for New 2008 and Later Tier 4 Off-Road Compression Ignition Engines, Part I-C" (Part I-C), adopted October 20, 2005. Part 1039 and Part 1065 of those test procedures will be updated in separate documents titled "California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression Ignition Engines, Part I-D" (Part I-D), and "California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off Road Compression Ignition Engines, Part I-F" (Part I-F), respectively. The proposed modifications to this document are, in large part, incorporated directly or by reference from 40 Code of Federal Regulations (CFR) part 1068, subparts A, B, C, D, E, F, and G, including Appendix I and II to part 1068, last amended June 28, 2011, and the subparts of 40 CFR Part 60, 40 CFR Part 85, 40 CFR Part 86, 40 CFR Part 89, 40 CFR Part 92, and 40 CFR Part 1033 that are internally referenced within 40 CFR Part 1068. This document is incorporated by reference in Title 13, California Code of Regulations, Section 2421(a)(4)(B); therefore all language is printed in a style to indicate changes from the existing provisions. All existing language is indicated by plain type. All additions to language are indicated by underlined text and deletions are indicated by ~~strikeout~~. California provisions that replace specific federal provisions are denoted by the words "DELETE" for the federal language and "REPLACE WITH" or "ADD" for the California language. Only those portions containing the suggested modifications from the existing provisions are included. All other portions remain unchanged and are indicated by the symbol " * * * * * " for reference. If there is any conflict between the provisions of this document and the California Health and Safety Code, Division 26, or Title 13 of the California Code of Regulations (CCR), the Health and Safety Code and Title 13 apply.

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CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR NEW 200811 AND LATER TIER 4 OFF-ROAD COMPRESSION-IGNITION ENGINES, Part I-F

The following provisions of ~~Part 1039, Part 1065, and~~ Part 1068, Title 40, Code of Federal Regulations (CFR), as ~~proposed~~ promulgated and last amended by the United States Environmental Protection Agency on ~~the date listed~~ June 28, 2011, are ~~adopted and~~ incorporated herein by this reference into the existing California test procedures for 2008 model year and later off-road compression-ignition engines, hereafter known as the "California Exhaust Emission Standards and Test Procedures for New 200811 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-F," except as altered or replaced by the provisions set forth below. All proposed changes indicated by the notation " * * * * * * " or by ~~strikeout~~/underline refer to the existing 2008 and Later California Test Procedures, Part I-C, as previously adopted by the Air Resources Board on October 20, 2005. References to other 40 CFR parts and sections refer to parts and sections incorporated in this or other ARB Test Procedures unless otherwise indicated.

PART 1068 – GENERAL COMPLIANCE PROVISIONS FOR ~~NONROAD~~ OFF-ROAD COMPRESSION-IGNITION ENGINE PROGRAMS

SOURCE: California Exhaust Emission Standards and Test Procedures for New 2008 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-C, Adopted October 20, 2005, predicated upon the requirements of 67 FR 68427, November 8, 2002, amended July 13, 2005, unless otherwise noted.

Subpart A – Applicability and Miscellaneous Provisions

§ 1068.1 Does this part apply to me?

* * * * *

{New section} ADD:

§ 1068.2 How does this part apply for engines and how does it apply for equipment?

(a) See Title 13, Division 3, Chapter 9, Article 4, of the California Code of Regulations to determine if engine-based and/or equipment-based standards apply. (Note: Some equipment is subject to engine-based standards for exhaust emission and equipment-based standards for evaporative emissions.)

(b) The provisions of this part apply differently depending on whether the engine or equipment is required to be certified.

(1) Subpart A and subpart B of this part apply to engines and equipment, without regard to which is subject to certification requirements in Title 13, Division 3, Chapter 9, Article 4, of the California Code of Regulations.

(2) Subparts C, D, and E of this part apply to the engines or to the equipment, whichever is subject to certification requirements in Title 13, Division 3, Chapter 9, Article 4, of the California Code of Regulations.

(3) Subpart F of this part generally applies to the engines or to the equipment, whichever is subject to standards under Title 13, Division 3, Chapter 9, Article 4, of the California Code of Regulations. However, since subpart F of this part addresses in-use engines and equipment (in which the engine is installed in the equipment), the requirements in Subpart F do not always distinguish between engines and equipment.

(c) For issues related to testing, read the term "engines/equipment" to mean engines subject to engine-based testing and equipment for equipment subject to equipment-based testing; otherwise, read the term "engines/equipment" to mean engines for sources subject to engine-based standards and equipment for sources subject to equipment-based standards.

(d) When we use the term engines (rather than engines/equipment), read it to mean engines without regard to whether the source is subject to engine-based standards or testing. When we use the term equipment (rather than engines/equipment), read it to mean equipment without regard to whether the source is subject to equipment-based standards or testing. (Note: The definition of "equipment" in §1068.30 includes the engine.)

(e) The terminology convention described in this section is not intended to limit our authority or your obligations under the California Health and Safety Code, Division 26, and corresponding regulations, except where the context indicates otherwise.

§ 1068.5 How must manufacturers apply good engineering judgment?

(a) You must use good engineering judgment for decisions related to any requirements under this chapter. This includes your applications for certification, any testing you do to show that your certification, production-line, and in-use engines/equipment comply with requirements that apply to them, and how you select, categorize, determine, and apply these requirements.

* * * * *

§ 1068.10 What provisions apply to confidential information?

* * * * *

§ 1068.15 ~~Who is authorized to represent the Air Resources Board?~~ What general provisions apply for Air Resources Board decision-making?

* * * * *

§ 1068.20 May ARB enter my facilities for inspections?

DELETE,
REPLACE WITH:

(a) Any engine/equipment manufacturer affected by these regulations, upon receipt of prior notice must admit or cause to be admitted during operating hours any ARB Enforcement Officer that has presented proper credentials to any of the following:

(1) Any facility where tests or procedures or activities connected with such tests or procedures are or were performed.

(2) Any facility where any new off-road compression-ignition engine/equipment is present and is being, has been, or will be tested.

(3) Any facility where a manufacturer constructs, assembles, modifies, or builds-up an engine into a certification engine that will be tested for certification.

(4) Any facility where any record or other document relating to any of the above is located.

(b) Upon admission to any facility referred to in paragraph (c)(1) of this Section, any ARB Enforcement Officer must be allowed:

(1) To inspect and monitor any part or aspect of such procedures, activities, and testing facilities, including, but not limited to, monitoring engine preconditioning, emissions tests and break-in, maintenance, and ~~engine~~ storage procedures.

(2) To verify correlation or calibration of test equipment; and,

(3) To inspect and make copies of any such records, designs, or other documents; and,

(4) To inspect and/or photograph any part or aspect of any such certification engine/equipment and any components to be used in the construction thereof.

(c) To permit an ARB determination whether production off-road compression-ignition engines/equipment conform in all material respects to the design specifications that apply to those engines/equipment described in the Executive Order certifying such engines and to standards prescribed herein. Engine/equipment manufacturers must, upon receipt of prior notice, admit any ARB Enforcement Officer, upon presentation of credentials, to:

(1) Any facility where any document design, or procedure relating to the translation of the design and construction of engines/equipment and emission related components described in the application for certification or used for certification testing into production engines/equipment is located or carried on; and,

(2) Any facility where any off-road compression-ignition engines/equipment to be introduced into commerce are manufactured or assembled.

(3) Any California retail outlet where any off-road compression-ignition engine/equipment is sold.

(d) On admission to any such facility referred to in this Section, any ARB Enforcement Officer must be allowed:

(1) To inspect and monitor any aspects of such manufacture or assembly and other procedures;

(2) To inspect and make copies of any such records, documents or designs; and,

(3) To inspect and photograph any part or aspect of any such new off-road compression-ignition engines/equipment and any component used in the assembly thereof that are reasonably related to the purpose of the Enforcement Officer's entry.

(e) Any ARB Enforcement Officer must be furnished by those in charge of a facility being inspected with such reasonable assistance as may be necessary to discharge any function listed in this paragraph. Each applicant for or recipient of certification is required to cause those in charge of a facility operated for its benefit to furnish such reasonable assistance without charge to the ARB irrespective of whether or not the applicant controls the facility.

(f) The duty to admit or cause to be admitted any ARB Enforcement Officer applies whether or not the applicant owns or controls the facility in question and applies both to domestic and foreign engine manufacturers and facilities. The ARB will not attempt to make any inspections that it has been informed that local law forbids. However, if local law makes it impossible to insure the accuracy of data generated at a facility, no informed judgment that an engine is certifiable or is covered by an Executive Order can properly be based on the data. It is the responsibility of the engine/equipment manufacturer to locate its testing and manufacturing facilities in jurisdictions where this situation will not arise.

(g) For purposes of this Section:

(1) "Presentation of credentials" means a display of a document designating a person to be an ARB Enforcement Officer.

(2) Where engine/equipment, component, or ~~engine~~ storage areas or facilities are

concerned, "operating hours" means all times during which personnel are at work in the vicinity of the area or facility and have access to it.

(3) Where facilities or areas other than those covered by paragraph (g)(2) of this Section are concerned, "operating hours" means all times during which an assembly line is in operation or during which testing, maintenance, break-in procedure, production or compilation of records, or any other procedure or activity is being conducted related to certification testing, translation of designs from the test stage to the production stage, or engine/equipment manufacture or assembly.

(4) "Reasonable assistance" includes, but is not limited to, providing clerical, copying, interpretation and translation services; making personnel available upon request to inform the ARB Enforcement Officer of how the facility operates and to answer questions; and performing requested emissions tests on any engine that is being, has been, or will be used for certification testing. Such tests must be nondestructive, but may require appropriate break-in. The engine/equipment manufacturer must be compelled to cause the personal appearance of any employee at such a facility before an ARB Enforcement Officer, upon written request from the Executive Officer for the appearance of any employee of a facility, and service of such request upon the engine/equipment manufacturer. Any such employee who has been instructed by the engine/equipment manufacturer to appear will be entitled to be accompanied, represented, and advised by counsel.

§ 1068.25 What information must I give to ARB?

* * * * *

(b) DELETE,
REPLACE WITH:
Manufacturers subject to the requirements of this part must establish and maintain records, perform tests, make reports and provide additional information that the Executive Officer may reasonably require under the California Health and Safety Code, Division 26, and corresponding regulations. This also applies to engines or equipment that are exempt from emission standards. Manufacturers must keep required records for eight years unless otherwise directed.

(c) ADD:
(c) Manufacturers are responsible for statements and information in the applications they provide for certification or any other requests or reports. If a manufacturer provides statements or information to another party for submission to ARB, the manufacturer is responsible for these statements and information as if it had submitted them to ARB directly. For example, knowingly submitting false information to someone else for inclusion in an application for certification would be deemed to be a submission of false information in violation of the California Health and Safety Code, Division 26, and corresponding regulations.

§ 1068.27 May ARB conduct testing with my production engines/equipment?

{Entire section text} DELETE,
REPLACE WITH:
If we request it, you must make a reasonable number of production-line engines or pieces of production-line equipment available for a reasonable time so we can test or inspect them for compliance with the requirements of this ~~chapter~~ part.

§ 1068.30 What definitions apply to this part?

{Introductory text} DELETE,
REPLACE WITH:
The definitions in ~~40 CFR~~ §§1039.801 and 1065.1001 of the California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, Parts 1-D and 1-F, respectively, ~~as modified,~~ apply with the following substitutions, revisions, and additions:

40 CFR part 1039 DELETE,
REPLACE WITH:
40 CFR part 1039 or Part 1039 means Part 1039 and applicable subparts ~~contained in these 2008 and Later Test procedures~~ of the California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, PART I-D, when referenced in unrevised (i.e., " * * * * * * ") sections. When referenced in revised sections, the term 40 CFR part 1039 refers to the federal regulations of the same title, last amended on June 28, 2011.

ADD:
40 CFR part 1065 or Part 1065 means Part 1065 and applicable subparts of the California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, PART I-E, when referenced in unrevised (i.e., " * * * * * * ") sections. When referenced in revised sections, the term 40 CFR part 1065 refers to the federal regulations of the same title, last amended on June 28, 2011.

40 CFR part 1068 DELETE,
REPLACE WITH:
40 CFR part 1068 or Part 1068 means Part 1068 and applicable subparts ~~contained in these 2008 and Later Test procedures~~ of the California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, PART I-F, when referenced in unrevised (i.e., " * * * * * * ") sections. When referenced in revised sections, the term 40 CFR part 1068 refers to the federal regulations of the same title, last amended on June 28, 2011.

* * * * *

ADD:
Date of manufacture means one of the following:

(1) For engines, the date on which the crankshaft is installed in an engine block, with the following exceptions:

(i) Reserved.

(ii) Manufacturers may assign a date of manufacture at a point in the assembly process later than the date otherwise specified under this definition. For example, a manufacturer may use the build date printed on the label or stamped on the engine as the date of manufacture.

(2) For equipment, the date on which the engine is installed, unless otherwise specified in Title 13, Division 3, Chapter 9, Article 4, of the California Code of Regulations. Manufacturers may alternatively assign a date of manufacture later in the assembly process.

* * * * *

ADD:
Engine/equipment and engines/equipment mean engine(s) and/or equipment depending on the context. Specifically these terms mean the following:

(1) Engine(s) when only engine-based standards apply.

(2) Engine(s) for testing issues when engine-based testing applies.

(3) Engine(s) and equipment when both engine-based and equipment-based standards apply.

(4) Equipment when only equipment-based standards apply.

(5) Equipment for testing issues when equipment-based testing applies.

Equipment DELETE,
REPLACE WITH:
Equipment means ~~one of the following things:~~
(1) Any vehicle, vessel, or other type of equipment that is subject to the requirements of this part or that uses an engine that is subject to the requirements of this part. An installed engine is part of the equipment, or

(2) Fuel-system components that are subject to an equipment-based standard under this chapter. Installed fuel-system components are part of the engine.

* * * * *

ADD:

Exempted means relating to engines/equipment that are not required to meet otherwise applicable standards. Exempted engines/equipment must conform to regulatory conditions specified for an exemption in this part 1068 or in Title 13, Division 3, Chapter 9, Article 4, of the California Code of Regulations. Exempted engines/equipment not required to comply with the otherwise applicable requirements of Title 13, Division 3, Chapter 9, Article 4, (e.g., certification, reporting, warranty, etc.) of the California Code of Regulations or the applicable test procedures are still deemed to be "subject to" the standards of Title 13, Division 3, Chapter 9, Article 4, of the California Code of Regulations. Engines/equipment exempted with respect to a certain tier of standards may be required to comply with an earlier tier of standards as a condition of the exemption; for example, engines exempted with respect to Tier 3 standards may be required to comply with Tier 1 or Tier 2 standards.

* * * * *

Nonroad engine DELETE,
REPLACE WITH:
Nonroad engine means: an off-road engine as defined in §1039.801 of the California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, Part 1-D.

* * * * *

ADD:
Revoke means to terminate the Executive Order or an exemption for a family. If we revoke an Executive Order or exemption, you must apply for a new Executive Order or exemption before continuing to introduce the affected engines/equipment into California commerce. This does not apply to engines/equipment you no longer possess.

* * * * *

ADD:
United States, when referenced in unrevised sections, generally means California, or within the jurisdiction of the California Air Resources Board, unless indicated otherwise by the context of the section.

* * * * *

ADD:
Void means to invalidate an Executive Order or an exemption ab initio. If we void an Executive Order or withdraw an exemption, all the engines/equipment introduced into California commerce under that family for that model year are considered noncompliant, and you are liable for all engines/equipment introduced into California commerce under the Executive Order and may face civil or criminal penalties or both. This applies equally to all engines/equipment in the family, including engines/equipment introduced into California commerce before we voided the Executive Order. If we void an

exemption, all the engines/equipment introduced into California commerce under that exemption are considered uncertified (or nonconforming), and you are liable for engines/equipment introduced into California commerce under the exemption and may face civil or criminal penalties or both. You may not introduce into California commerce any additional engines/equipment using the voided Executive Order or exemption.

* * * * *

§ 1068.35 What symbols, acronyms, and abbreviations does this part use?

* * * * *

{New section} ADD:
§1068.45 General labeling provisions.

The labeling provisions in Title 13, California Code of Regulations, §2424 apply.

Subpart B – Prohibited Actions and Related Requirements

§ 1068.101 What general actions does this regulation prohibit?

* * * * *

(b)(7) ADD:
(b)(7) Labeling.

(i) You may not remove or alter an emission control information label or other required permanent label except as specified in this paragraph (b)(7) or otherwise allowed by this chapter. Removing or altering an emission control information label is a violation of paragraph (b)(1) of this section. However, it is not a violation to remove a label in the following circumstances:

(A) The engine is destroyed, is permanently disassembled, or otherwise loses its identity such that the original title to the engine is no longer valid.

(B) The regulations specifically direct you to remove the label. For example, see §1068.235.

(C) The part on which the label is mounted needs to be replaced. In this case, you must have a replacement part with a duplicate of the original label installed by the certifying manufacturer or an authorized agent, except that the replacement label may omit the date of manufacture if applicable. Labels must be permanently attached to parts that will not normally be replaced, except for replacements in unusual circumstances, such as damage in a collision or other accident.

(D) The original label is incorrect, provided that it is replaced with the correct label from the certifying manufacturer or an authorized agent. This allowance to replace incorrect labels does not affect whether the application of an incorrect original label is a violation.

(ii) Removing or altering a temporary or removable label contrary to the provisions of this paragraph (b)(7)(ii) is a violation of paragraph (b)(1) of this section.

(A) For labels identifying temporary exemptions, you may not remove or alter the label while the engine/equipment is in an exempt status. The exemption is automatically revoked for each engine/equipment for which the label has been removed.

(B) For temporary or removable consumer information labels, only the ultimate purchaser may remove the label.

(iii) You may not apply a false emission control information label. You also may not manufacture, sell, provide, distribute, or offer to sell false labels. The application, manufacture, sale, provision, distribution, or offer for sale of false labels is a violation of this section (such as paragraph (a)(1) or (b)(2) of this section). Note that applying an otherwise valid emission control information label to the wrong engine is considered to be applying a false label.

* * * * *

{New section} ADD:

§ 1068.103 What are the provisions related to the duration and applicability of Executive Orders?

(a) Engines/equipment covered by an Executive Order are limited to those that are produced during the period specified in the certificate and conform to the specifications described in the certificate and the associated application for certification. For the purposes of this paragraph (a), "specifications" includes any conditions or limitations identified by the manufacturer or ARB. For example, if the application for an Executive Order specifies certain engine configurations, the Executive Order does not cover any configurations that are not specified. We may ignore any information provided in the application that we determine is not relevant to a demonstration of compliance with applicable regulations, such as your projected production volumes in many cases.

(b) Unless Title 13, Division 3, Chapter 9, Article 4, of the California Code of Regulations specifies otherwise, determine the production period corresponding to each Executive Order as specified in this paragraph (b). In general, the production period is the manufacturer's annual production period identified as a model year.

(1) For engines/equipment subject to emission standards based on model years, the first day of the annual production period can be no earlier than January 2 of the calendar year preceding the year for which the model year is named, or the earliest date of manufacture for any engine/equipment in the engine family, whichever is later. The

last day of the annual production period can be no later than December 31 of the calendar year for which the model year is named or the latest date of manufacture for any engine/equipment in the engine family, whichever is sooner.

(2) Reserved.

(c) An Executive Order will not cover engines/equipment you produce with a date of manufacture earlier than the date you submit the application for certification for the family. You may start to produce engines/equipment after you submit an application for certification and before the effective date of an Executive Order, subject to the following conditions:

(1) The engines/equipment must conform in all material respects to the engines/equipment described in your application. Note that if we require you to modify your application, you must ensure that all engines/equipment conform to the specifications of the modified application.

(2) The engines/equipment may not be sold, offered for sale, introduced into commerce, or delivered for introduction into California commerce before the effective date of the Executive Order.

(3) You must notify us in your application for certification that you plan to use the provisions of this paragraph (c) and when you intend to start production. If Title 13, Division 3, Chapter 9, Article 4, of the California Code of Regulations specifies mandatory testing for production-line engines, you must start testing as directed in Title 13, Division 3, Chapter 9, Article 4, of the California Code of Regulations based on your actual start of production, even if that occurs before we approve your certification. You must also agree to give us full opportunity to inspect and/or test the engines/equipment during and after production. For example, we must have the opportunity to specify selective enforcement audits as allowed by Title 13, Division 3, Chapter 9, Article 4, of the California Code of Regulations as if the engines/equipment were produced after the effective date of the Executive Order.

(4) Reserved.

(d) Engines/equipment with a date of manufacture after December 31 of the calendar year for which a model year is named are not covered by the Executive Order for that model year. You must submit an application for a new Executive Order demonstrating compliance with applicable standards even if the engines/equipment are identical to those built before December 31.

(e) The flexible approach to naming the annual production period described in paragraph (b)(1) of this section is intended to allow you to introduce new products at any point during the year. This is based on the expectation that production periods generally run on consistent schedules from year to year. You may not use this flexibility

to arrange your production periods such that you can avoid annual certification as exemplified in 1068.103(f) below.

(f) An engine is generally assigned a model year based on its date of manufacture, which is typically based on the date the crankshaft is installed in the engine (see §1068.30). You may not circumvent the provisions of §1068.101(a)(1) by stockpiling engines with a date of manufacture before new or changed emission standards take effect by deviating from your normal production and inventory practices. (For purposes of this paragraph (f), normal production and inventory practices means those practices you typically use for similar families in years in which emission standards do not change. We may require you to provide us routine production and inventory records that document your normal practices for the preceding eight years.) For most engines you should plan to complete the assembly of an engine of a given model year within the first week after the end of the model year if new emission standards start to apply in that model year. For special circumstances it may be appropriate for your normal business practice to involve more time. For engines with per-cylinder displacement below 2.5 liters, we would consider it to be a violation to complete the assembly of an engine of a given model year more than 30 days after the end of the model year for that engine family if new emission standards start to apply in that year. For example, in the case where new standards apply in the 2010 model year, and your normal production period is based on the calendar year, you must complete the assembly of all your 2009 model year engines before January 31, 2010, or an earlier date consistent with your normal production and inventory practices. For engines with per-cylinder displacement at or above 2.5 liters, this time may not exceed 60 days. Note that for the purposes of this paragraph (f), an engine shipped under §1068.261 is deemed to be a complete engine. Note also that §1068.245 allows flexibility for additional time in unusual circumstances. Note finally that disassembly of complete engines and reassembly (such as for shipment) does not affect the determination of model year; the provisions of this paragraph (f) apply based on the date on which initial assembly is complete.

§ 1068.105 What other provisions apply to me specifically if I manufacture equipment needing certified engines?

* * * * *

(a) DELETE,
REPLACE WITH:
(a) Transitioning to new engine-based standards. If new engine-based emission standards apply in a given model year, your equipment in that ~~model~~ calendar year must have engines that are certified to the new standards, except that you may continue to use up ~~your~~ normal inventories of earlier engines that were built before the date of the new or changed standards. For purposes of this paragraph (a), normal inventory applies for engines you possess and engines from your engine supplier's inventory. For example, if your normal inventory practice is to keep on hand a one-month supply of engines based on your upcoming production schedules, and a new tier of standards starts to apply for the 2015 model year, you may order engines ~~based on~~ consistent

with your normal inventory requirements late in the engine manufacturer's 2014 model year and install those engines in your equipment, regardless of the date of installation. Also, if your model year starts before the end of the calendar year preceding new standards, you may use engines from the previous model year for those units you produce before January 1 of the year that new standards apply. If emission standards for the engine do not change in a given model year, you may continue to install engines from the previous model year without restriction. (or any earlier model year for which the same standards apply. You may not circumvent the provisions of §1068.101(a)(1) by stockpiling engines that were built before new or changed standards take effect. Similarly, you may not circumvent the provisions of §1068.101(a)(1) by knowingly installing engines that were stockpiled by engine suppliers in violation of §1068.103(f). Note that this allowance does not apply for equipment subject to equipment-based standards.

(b) DELETE:
REPLACE WITH:
(b) Installing engines or certified components. The provisions in §1068.101(a)(1) generally prohibit you from introducing into California commerce any new equipment that includes engines not covered by an Executive Order. In addition, you must follow the engine manufacturer's emission-related installation instructions. For example, you may need to constrain where you place an exhaust aftertreatment device or integrate into your equipment models a device for sending visual or audible signals to the operator. Not meeting the manufacturer's emission-related installation instructions is a violation of one or more of the prohibitions of §1068.101~~(b)(1)~~. See §1068.261 for special provisions that apply when the engine manufacturer delegates final assembly of emission controls to you.

* * * * *

(d) DELETE,

§ 1068.110 What other provisions apply to engines/equipment in service?

(a) DELETE,
REPLACE WITH:
(a) Aftermarket parts and service. As the ~~engine~~ certifying manufacturer, you may not require anyone to use your parts or service to maintain or repair an engine or a piece of equipment, unless we approve this in your application for certification. It is a violation of the applicable provisions of the California Health and Safety Code, Division 26, and corresponding regulations for anyone to manufacture ~~an engine or vehicle~~ any part if one of its main effects is to reduce the effectiveness of the emission controls. See §1068.101(b)(2).

(b) DELETE,
REPLACE WITH:

(b) Certifying aftermarket parts. The manufacturer or rebuilder of an aftermarket engine/equipment part shall be required to certify according to the requirements of Title 13, CCR, Chapter 4, Article 2. The aftermarket part rebuilder or manufacturer must keep all records showing how the part affects emissions, and shall provide this information to the Executive Officer within 30 calendar days upon request.

* * * * *

(e) DELETE,
REPLACE WITH:
(e) Warranty and maintenance. Owners are responsible for properly maintaining their engines/equipment; however, owners may make warranty claims against the manufacturer for all expenses related to diagnosing and repairing or replacing emission-related parts, as described in §1068.115. Manufacturers may ask to limit diagnosis and repair to authorized service facilities, provided this does not limit their ability to meet their warranty obligations under §1068.115. The warranty period begins when the ~~engine~~ equipment is first placed into service. See the Title 13, Division 3, Chapter 9, Article 4, of the California Code of Regulations standard-setting part for specific requirements. It is a violation of the applicable provisions of the California Health and Safety Code, Division 26, and corresponding regulations for anyone to disable emission controls; see §1068.101(b)(1) and Title 13, Division 3, Chapter 9, Article 4, of the California Code of Regulations.

§ 1068.115 When must manufacturers honor emission-related warranty claims?

* * * * *

{All occurrences of "engine" and "engines" through (b)(2)} DELETE,
REPLACE WITH:
"engine/equipment" or "engines/equipment" respective.

* * * * *

(b)(6) DELETE,
REPLACE WITH:
(b)(6) The use of any fuel that is commonly available where the ~~engine~~ equipment operates unless your written maintenance instructions state that this fuel would harm the ~~engine's~~ equipment's emission control system and operators can readily find the proper fuel.

§ 1068.120 What requirements must I follow to rebuild engines?

(a) DELETE,
REPLACE WITH:
(a) This section describes the steps to take when rebuilding engines to avoid violating the tampering prohibition in §1068.101(b)(1). These requirements apply to anyone

rebuilding an engine subject to this part, but the recordkeeping requirements in paragraphs (j) and (k) of this section apply only to businesses. For maintenance or service that is not rebuilding, including any maintenance related to evaporative emission controls, you may not make changes that might increase emissions of any regulated pollutant, but you do not need to keep any records.

* * * * *

(c) DELETE,
REPLACE WITH:
(c) [Reserved]

* * * * *

(e) DELETE,
REPLACE WITH:
(e) If the rebuilt engine remains installed or is reinstalled in the same piece of equipment, you must rebuild it to the original configuration ~~or another certified configuration of the same or later model year.~~, except as allowed by this paragraph (e). You may rebuild it to a different certified configuration of the same or later model year. You may also rebuild it to a certified configuration from an earlier model year as long as the earlier configuration is as clean or cleaner than the original configuration. For purposes of this paragraph (e), "as clean or cleaner" means one of the following:

(1) For engines not certified with a Family Emission Limit for calculating credits for a particular pollutant, this means that the same emission standard applied for both model years. This includes supplemental standards such as Not-to-Exceed standards.

(2) For engines certified with a Family Emission Limit for a particular pollutant, this means that the configuration to which the engine is being rebuilt has a Family Emission Limit for that pollutant that is at or below the standard that applied to the engine originally, and is at or below the original Family Emission Limit.

(f) DELETE,
REPLACE WITH:
(f) ~~If the rebuilt engine replaces~~ A rebuilt engine may replace another certified engine in a piece of equipment~~, you must rebuild it~~ only if the engine was rebuilt to a certified configuration ~~of the same~~ meeting equivalent or more stringent emission standards. Note that a certified configuration would generally include more than one model year ~~as, or a later~~. A rebuilt engine being installed that is from the same model year ~~than, the engine you are replacing.~~ or a newer model year than the engine being replaced meets this requirement. The following examples illustrate the provisions of this paragraph (f):

(1) In most cases, you may use a rebuilt Tier 2 engine to replace a Tier 1 engine or another Tier 2 engine.

(2) You may use a rebuilt Tier 1 engine to replace a Tier 2 engine if the two engines differ only with respect to model year or other characteristics unrelated to emissions since such engines would be considered to be in the same configuration. This may occur if the Tier 1 engine had emission levels below the Tier 2 standards or if the Tier 2 engine was certified with a Family Emission Limit for calculating emission credits.

(3) You may use a rebuilt engine that originally met the Tier 1 standards without certification, as provided under §1068.265, to replace a certified Tier 1 engine. This may occur for engines produced under a Transition Program for Equipment Manufacturers such as that described in §1039.625.

(4) You may never replace a certified engine with an engine rebuilt to a configuration that does not meet ARB or U.S. EPA emission standards. Note that a configuration is considered to meet ARB or U.S. EPA emission standards if it was previously certified or was otherwise shown to meet emission standards.

* * * * *

(j)(1) DELETE,
REPLACE WITH:
(j)(1) Identify the hours of operation (or mileage, as appropriate) at the time of rebuild. These may be noted as approximate values if the engine has no hour meter (or odometer).

* * * * *

§ 1068.125 What happens if I violate the regulations?

* * * * *

Subpart C – Exemptions and Exclusions

§ 1068.201 Does ARB exempt or exclude any engines/equipment from the prohibited acts?

* * * * *

{All occurrences of "engine" and "engines" (a) through (f)} DELETE,
REPLACE WITH:
"engine/equipment" or "engines/equipment" respective.

* * * * *

(h) DELETE,
REPLACE WITH:
(h) You may ask us to modify the administrative requirements for the exemptions described in this subpart or in subpart D of this part. We may approve your request if we determine that such approval is consistent with the intent of this part. For example, waivable administrative requirements might include some reporting requirements, but would not include any eligibility requirements or use restrictions.

(i) DELETE,
REPLACE WITH:
(i) If you want to take an action with respect to an exempted or excluded engine /equipment that is prohibited by the exemption or exclusion, such as selling it, you need to certify the engine/equipment. We will issue an Executive Order if you send us an application for certification showing that you meet all the applicable requirements from Title 13, Division 3, Chapter 9, Article 4, of the California Code of Regulations and pay the appropriate fee. ~~Also, in some cases~~ Alternatively, we may allow ~~manufacturers~~ you to include in an existing certified engine family those engines/equipment you modify ~~the engine as needed (or otherwise demonstrate) to make it~~ be identical to engines /equipment already covered by ~~a~~ the Executive Order. We would base such an approval on our review of any appropriate documentation. These engines/equipment must have emission control information labels that accurately describe their status.

§ 1068.210 What are the provisions for exempting test engines/equipment?

(a) DELETE,
REPLACE WITH:
(a) We may exempt engines ~~that are not exempted under other sections of this part~~ that you will use for research, investigations, studies, demonstrations, or training. Note that you are not required to get an exemption under this section for engines that are exempted under other provisions of this part, such as the manufacturer-owned exemption in §1068.215.

* * * * *

{All occurrences of "engine" and "engines" (c) through (d)(5)(vi)} DELETE,
REPLACE WITH:
"engine/equipment" or "engines/equipment" respective.

* * * * *

(e)(3) DELETE,
REPLACE WITH:
(e)(3) Add a permanent, legible label, ~~written in block letters in English,~~ to ~~a readily visible part of each~~ all engines/equipment exempted ~~engine. This label must include~~ under this section, consistent with Title 13, California Code of Regulations, §2424, with at least the following items:

* * * * *

(e)(3)(iii) DELETE,
REPLACE WITH:
(e)(3)(iii) Engine displacement, ~~engine~~ family identification ~~(as applicable)~~, and model year of the engine/equipment (as applicable), or whom to contact for further information.

(e)(3)(vi) DELETE,
REPLACE WITH:
(e)(3)(vi) ~~The statement~~ One of these statements (as applicable):

(A) "THIS ENGINE IS EXEMPT ~~UNDER 40 CFR 1068.210 OR 1068.215~~ FROM CALIFORNIA EMISSION STANDARDS AND RELATED REQUIREMENTS."

(B) "THIS EQUIPMENT IS EXEMPT FROM CALIFORNIA EMISSION STANDARDS AND RELATED REQUIREMENTS."

The combining of similar federal statements and/or citations with California statements and/or citations on these labels is permitted with Executive Officer approval.

* * * * *

(e)(5) DELETE,
REPLACE WITH:
(e)(5) Tell us the final disposition of the engines/equipment.

§ 1068.215 What are the provisions for exempting manufacturer-owned engines/equipment?

(a) DELETE,
REPLACE WITH:
(a) You are eligible for the exemption for manufacturer-owned engines/equipment only if you are ~~a certificate holder~~ the certifying manufacturer of record.

(b) DELETE,
REPLACE WITH:
(b) By provision of the California Health and Safety Code, Division 24, Part 5, Chapter 1, § 43014, a manufacturer may request the Executive Officer to issue an experimental permit for a nonconforming engine/equipment under the ownership and control of the manufacturer for the purposes of developing products, assessing production methods, or promoting engines/equipment in the marketplace. The engine/equipment shall not be loaned, leased, or sold to generate revenue, either by itself or for an engine installed in a piece of equipment.

(c) DELETE,

REPLACE WITH:
(c) To use this exemption, you must do three things:

(1) Establish, maintain, and keep adequately organized and indexed information on ~~each~~ all exempted ~~engine~~ engines/equipment, including the engine/equipment identification number, the use of the engine/equipment on exempt status, and the final disposition of any engine/equipment removed from exempt status.

(2) Let us access these records, as described in §1068.20.

(3) Add a permanent~~, legible~~ label~~, written in block letters in English,~~ to ~~a readily visible part of each~~ all engines/equipment exempted ~~engine. This label must include~~ under this section, consistent with Title 13, California Code of Regulations, §2424, with at least the following items:

(i) The label heading "EMISSION CONTROL INFORMATION".

(ii) Your corporate name and trademark.

(iii) ~~Engine displacement, engine~~ Family identification ~~(as applicable),~~ and model year of the engine/equipment (as applicable), or whom to contact for further information.

(iv) ~~The statement~~ One of these statements (as applicable):

(A) "THIS ENGINE IS COVERED BY AN EXPERIMENTAL PERMIT AND IS EXEMPT FROM MEETING CALIFORNIA EMISSION REQUIREMENTS.". ~~The referencing of similar federal requirements in combination with California references under this provision is permitted.~~

(B) "THIS EQUIPMENT IS EXEMPT FROM CALIFORNIA EMISSION STANDARDS AND RELATED REQUIREMENTS."

The combining of similar federal statements and/or citations with California statements and/or citations on these labels is permitted with Executive Officer approval.

§ 1068.220 What are the provisions for exempting display engines/equipment?

* * * * *

{All occurrences of "engine" and "engines" (a) through (d)} DELETE,
REPLACE WITH:
"engine/equipment" or "engines/equipment" respective.

(e) DELETE,
REPLACE WITH:

(e) To use this exemption, you must add a permanent, ~~legible~~ label, ~~written in block letters in English,~~ to ~~a readily visible part of each~~ all engines/equipment exempted ~~engine. This label must include~~ under this section, consistent with Title 13, California Code of Regulations, §2424, with at least the following items:

(1) The label heading "EMISSION CONTROL INFORMATION".

(2) Your corporate name and trademark.

(3) Engine displacement, ~~engine~~ family identification ~~(as applicable)~~, and model year of the engine/equipment (as applicable), or whom to contact for further information.

(4) ~~The statement~~ One of these statements (as applicable):

(i) "THIS ENGINE IS EXEMPT ~~UNDER 40 CFR 1068.220~~ FROM CALIFORNIA EMISSION STANDARDS AND RELATED REQUIREMENTS."

(ii) "THIS EQUIPMENT IS EXEMPT FROM CALIFORNIA EMISSION STANDARDS AND RELATED REQUIREMENTS."

The combining of similar federal statements and/or citations with California statements and/or citations on these labels is permitted with Executive Officer approval.

* * * * *

§ 1068.225 What are the provisions for exempting engines/equipment for national security?

Entire section DELETE,
REPLACE WITH:
The federal provisions in Title 40, Code of Federal Regulations, §1068.225 (76 FR 37977, June 28, 2011) apply.

§ 1068.230 What are the provisions for exempting engines/equipment for export?

* * * * *

§ 1068.235 What are the provisions for exempting engines/equipment used solely for competition?

(a) DELETE,
REPLACE WITH:
(a) New engines/equipment you produce that are used solely for competition are generally excluded from emission standards. See Title 13, Division 3, Chapter 9, Article 4, of the California Code of Regulations s for specific provisions where applicable.

(b) DELETE,
REPLACE WITH:
(b) If you modify ~~an engine~~ any engines/equipment after ~~it has~~ they have been placed into service in California so ~~it~~ they will be used solely for competition, ~~it is~~ they are exempt without request. This exemption applies only to the prohibition in §1068.101(b)(1) and is valid only as long as the engine/equipment is used solely for competition. You may not use the provisions of this paragraph (b) to circumvent the requirements that apply to the sale of new competition engines under Title 13, Division 3, Chapter 9, Article 4, of the California Code of Regulations.

(c) DELETE,
REPLACE WITH:
(c) If you modify ~~an engine~~ any engines/equipment under paragraph (b) of this section, you must destroy the original emission labels. If you loan, lease, sell, or give ~~one~~ any of these engines/equipment to someone else, you must tell the new owner (or operator, if applicable) in writing that ~~it~~ they may be used only for competition.

§ 1068.240 What are the provisions for exempting new replacement engines?

* * * * *

(c) DELETE,
REPLACE WITH:
(c) If the replacement engine ~~being replaced~~ is built to a configuration that was not ~~certified~~ subject to any emission standards under ~~this chapter~~ 13 CCR 2423, add a permanent label with your corporate name and trademark and the following language:

"THIS ENGINE DOES NOT COMPLY WITH CALIFORNIA OFF-ROAD EMISSION REQUIREMENTS. SALE OR INSTALLATION OF THIS ENGINE FOR ANY PURPOSE OTHER THAN AS A REPLACEMENT ENGINE FOR AN ENGINE MANUFACTURED PRIOR TO JANUARY 1, [Insert appropriate year reflecting when the earliest tier of emission standards began to apply to engines of that size and type] ~~IS~~ MAY BE A VIOLATION OF CALIFORNIA LAW SUBJECT TO CIVIL PENALTY."

Beginning January 1, 2013, the following additional information shall also be included on the emission control label:

ENGINE POWER:	{insert the advertised power of the specific engine configuration or the applicable power category for the engine family in kilowatts}
DATE OF MANUFACTURE:	{insert the engine build date per §1068.30}"

In lieu of including "Engine Power" or "Date of Manufacture" on the emissions control label, manufacturers may provide this information on a supplemental label attached to the engine in accordance with the provisions of this part and 13 CCR 2424.

The referencing of similar federal requirements in combination with California references under this provision is permitted.

(d) DELETE,
REPLACE WITH:
(d) If the replacement engine ~~being replaced~~ is built to a configuration that was ~~certified~~ subject to emission standards under 13 CCR 2423 ~~less stringent than those in effect when you produce the replacement engine~~, add a permanent label with your corporate name and trademark and the following language:

"THIS ENGINE COMPLIES WITH CALIFORNIA OFF-ROAD ~~AND U.S. EPA NONROAD~~ EMISSION REQUIREMENTS FOR ~~[Insert~~ [Identify the appropriate ~~year reflecting when the applicable tier of~~ emission standards (by model year, tier, or emission levels) for the replaced engine ~~began to apply~~] ENGINES UNDER 13 CCR 2423(j) ~~AND 40 CFR 1068.240~~. SELLING OR INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER THAN TO REPLACE AN ~~OFF-ROAD ENGINE BUILT BEFORE JANUARY 1 [Insert~~ [Identify the appropriate ~~year reflecting when the next tier of~~ emission standards (by model year, tier, or emission levels) for the replaced engine ~~began to apply~~] OFF-ROAD ENGINE MAY BE A VIOLATION OF CALIFORNIA ~~AND FEDERAL~~ LAW SUBJECT TO CIVIL PENALTY."

Beginning January 1, 2013, the following additional information shall also be included on the emission control label:

ENGINE POWER:	{insert the certified power in kilowatts of the specific engine configuration, if applicable, otherwise insert advertised power in kilowatts}
REFERENCE FAMILY NAME:	{insert the engine family name of the replacement engine as recorded in the Executive Order for the engine family to which the replacement engine was originally certified}
DATE OF MANUFACTURE:	{insert the engine build date per §1068.30}"

In lieu of including "Engine Power," Reference Family Name," or "Date of Manufacture" on the emissions control label, manufacturers may provide this information on a supplemental label attached to the engine in accordance with the provisions of this part and 13 CCR 2424. Manufacturers may alternately state the applicable power category in kilowatts for the certified engine family on the emission control or supplemental label when indicating "Engine Power."

Additionally, manufacturers may indicate the "Emissions Tier" of the replacement engine on the emissions control or supplemental label instead of the "Reference Family Name." For the purpose of this section, "Emissions Tier" is the emissions standard designation (e.g., Tier 1, Tier 2, Tier 3, Tier 4i, Tier 4f) of the engine recorded in the Executive Order for the engine family to which the replacement engine was originally certified. Certified power means the configuration-specific power of the replacement engine as originally identified in the application for certification of the reference engine family (see §1039.205(a)). Advertised power means engine power as stated by the manufacturer in sales literature.

The referencing of similar federal requirements in combination with California references under this provision is permitted.

* * * * *

§ 1068.245 What temporary provisions address hardship due to unusual circumstances?

(a) DELETE,
REPLACE WITH:
(a) After considering the circumstances, we may permit you to introduce into California commerce engines ~~or~~/equipment that do not comply with emission-related requirements for a limited time if all the following conditions apply:

(a)(1) DELETE,
REPLACE WITH:
(a)(1) Unusual circumstances that are clearly outside your control ~~and that could not have been avoided with reasonable discretion~~ prevent you from meeting requirements from this ~~chapter~~ part.

* * * * *

(a)(3) through (f) DELETE,
REPLACE WITH:
(a)(3) ~~Not having the exemption will jeopardize the solvency of your company.~~

~~(4)~~ No other allowances are available under the regulations in this chapter to avoid the impending violation, including the provisions of §1068.250.

(4) Not having the exemption will jeopardize the solvency of your company

(b) If your unusual circumstances are only related to compliance with the model-year provisions of §1068.103(f), we may grant hardship under this section without a demonstration that the solvency of your company is in jeopardy as follows:

(1) You must demonstrate that the conditions specified in paragraphs (a)(1) through (3) of this section apply.

(2) Your engines/equipment must comply with standards and other requirements that would have applied if assembly were completed on schedule.

(3) You may generally request this exemption only for engines/equipment for which assembly has been substantially completed; you may not begin assembly of any additional engines/equipment under this exemption after the cause for delay has occurred. We may make an exception to this general restriction for secondary engine manufacturers.

(4) As an example, if your normal production process involves purchase of partially complete engines and a supplier fails to deliver all the ordered engines in time for your assembly according to your previously established schedule as a result of a fire at its factory, you may request that we treat those engine as if they had been completed on the original schedule. Note that we would grant relief only for those engines where you had a reasonable basis for expecting the engines to be delivered on time based on past performance and terms of purchase.

~~(b)~~(c) To apply for an exemption, you must send the Executive Officer or his/her designee a written request as soon as possible before you are in violation. In your request, show that you meet all the conditions and requirements in paragraph (a) of this section.

~~(c)~~(d) Include in your request a plan showing how you will meet all the applicable requirements as quickly as possible.

~~(d)~~(e) You must give us other relevant information if we ask for it.

~~(e)~~(f) We may include reasonable additional conditions on an approval granted under this section, including provisions to recover or otherwise address the lost environmental benefit or paying fees to offset any economic gain resulting from the exemption. For example, in the case of multiple tiers of emission standards, we may require that you meet the standards from the previous tier whether or not your hardship is granted under paragraph (b) of this section.

~~(f)~~(g) Add a permanent~~, legible~~ label~~, written in block letters in English,~~ to ~~a readily visible part of each engine~~ all engines/equipment exempted under this section~~. This label must include~~, consistent with the labeling provisions in Title 13, California Code of Regulations, §2424, with at least the following items:

(1) The label heading "EMISSION CONTROL INFORMATION".

(2) Your corporate name and trademark.

(3) Engine displacement (in liters~~), rated power~~, or cubic centimeters), certified engine power if available, otherwise advertised power or power category (as applicable), and model year of the engine/equipment, (as applicable); or whom to contact for further information.

(4) ~~One of the following statements:~~ A statement describing the engine's status as an exempted engine:

(i) If the engine/equipment does not meet any emission standards~~:~~, add one of the following statements:

(A) "THIS ENGINE IS EXEMPT ~~UNDER 40 CFR 1068.245~~ UNDER 13 CCR 2423(f) FROM EMISSION STANDARDS AND RELATED REQUIREMENTS."~~.~~

(B) "THIS EQUIPMENT IS EXEMPT UNDER 13 CCR 2423(f) FROM EMISSION STANDARDS AND RELATED REQUIREMENTS."

The combining of similar federal statements and/or citations with California statements and/or citations on these labels is permitted with Executive Officer approval.

(ii) If the engines/equipment meets alternate emission standards as a condition of an exemption under this section, we may specify a different statement to identify the alternate emission standards.

§ 1068.250 What are the provisions for extending compliance deadlines for small volume manufacturers and small businesses under hardship?

* * * * *

(k) DELETE,
REPLACE WITH:
(k) Add a permanent~~, legible~~ label~~, written in block letters in English, to a readily visible part of each engine~~ to all engines/equipment exempted under this section~~. This label must include~~, consistent with the labeling provisions in Title 13, California Code of Regulations, §2424, with at least the following items:

(1) The label heading "EMISSION CONTROL INFORMATION".

(2) Your corporate name and trademark.

(3) Engine displacement (in liters~~), rated power~~, or cubic centimeters), certified engine power if available, otherwise advertised power or power category (as applicable), and model year of the engine/equipment (as applicable); or whom to contact for further information.

(4) ~~One of the following statements:~~ A statement describing the engine's status as an exempted engine:

(i) If the engine/equipment does not meet any emission standards~~:~~, add one of the following statements:

(A) "THIS ENGINE IS EXEMPT UNDER ~~40 CFR 1068.250~~ 13 CCR 2423(f) FROM EMISSION STANDARDS AND RELATED REQUIREMENTS."~~.~~

(B) "THIS EQUIPMENT IS EXEMPT UNDER 13 CCR 2423(f) FROM EMISSION STANDARDS AND RELATED REQUIREMENTS."

The combining of similar federal statements and/or citations with California statements and/or citations on these labels is permitted with Executive Officer approval.

(ii) If the engine/equipment meets alternate emission standards as a condition of an exemption under this section, we may specify a different statement to identify the alternate emission standards.

§ 1068.255 What are the provisions for exempting engines and components for hardship for equipment manufacturers and secondary engine manufacturers?

* * * * *

(b) DELETE,
REPLACE WITH:
(b) Engine exemption. As an engine manufacturer, you may produce nonconforming engines for the equipment we exempt in paragraph (a) of this section. You do not have to request this exemption for your engines, but you must have written assurance from equipment manufacturers that they need a certain number of exempted engines under this section. ~~Add a permanent, legible label, written in block letters in English, to a readily visible part of each exempted engine. This label must include at least the following items:~~ Label engines as follows, consistent with the labeling provisions in Title 13, California Code of Regulations, §2424:

(1) Engines. Add a permanent label to all engines/equipment exempted under this section with at least the following items:

~~(1)~~(i) The label heading "EMISSION CONTROL INFORMATION".

~~(2)~~(ii) Your corporate name and trademark.

~~(3)~~(iii) Engine displacement (in liters~~), rated power,~~ or cubic centimeters), certified engine power if available, otherwise advertised power or power category (as applicable), and model year of the engine/equipment, or whom to contact for further information.

~~(4) One of the following statements:~~
(iv) If the engine does not meet any emission standards: "THIS ENGINE IS EXEMPT UNDER 13 CCR 2423(f) FROM EMISSION STANDARDS AND RELATED REQUIREMENTS.". ~~The referencing of similar federal requirements in combination with California references under this provision is permitted.~~

~~(ii) If the engine meets alternate emission standards as a condition of an exemption under this section:~~
~~"THIS ENGINE COMPLIES WITH U.S. EPA NONROAD EMISSION REQUIREMENTS UNDER 40 CFR 1068.255.".~~

The combining of similar federal statements and/or citations with California statements and/or citations on these labels is permitted with Executive Officer approval. Additionally, if the engine meets alternate emission standards as a condition of an exemption under this section, we may specify a different statement to identify the alternate emission standards.

(2) [Reserved].

* * * * *

{New section} ADD:
§ 1068.260 What general provisions apply for selling or shipping engines that are not yet in their certified configuration?

Except as specified in paragraph (e) of this section, all new engines in California are presumed to be subject to the prohibitions of §1068.101, which generally require that all new engines be in a certified configuration before being introduced into California commerce. All emission-related components generally need to be installed on an engine for such an engine to be in its certified configuration. This section specifies clarifications and exemptions related to these requirements for engines. The provisions of this section apply for engine-based standards.

(a) The provisions of this paragraph (a) apply for emission-related components that cannot practically be assembled before shipment because they depend on equipment design parameters.

(1) You do not need an exemption to ship an engine that does not include installation or assembly of certain emission-related components, if those components are shipped along with the engine. For example, you may generally ship aftertreatment devices along with engines rather than installing them on the engine before shipment. We may require you to describe how you plan to use this provision.

(2) You may ask us at the time of certification for an exemption to allow you to ship your engines without emission-related components. If we allow this, we may specify

conditions that we determine are needed to ensure that shipping the engine without such components will not result in the engine being operated outside of its certified configuration. See paragraph (d) of this section for additional provisions that apply in certain circumstances.

(b) You do not need an exemption to ship engines without specific components if they are not emission-related components identified in Appendix I of this part. For example, you may generally ship engines without radiators needed to cool the engine.

(c) If you are the certifying manufacturer of record, partially complete engines shipped between two of your facilities are exempt, subject to the provisions of this paragraph (c), as long as you maintain ownership and control of the engines until they reach their destination. We may also allow this where you do not maintain actual ownership and control of the engines (such as hiring a shipping company to transport the engines), but only if you demonstrate that the engines will be transported only according to your specifications. See §1068.261(b) for the provisions that apply instead of this paragraph (c) for the special case of integrated manufacturers using the delegated-assembly exemption. Notify us of your intent to use this exemption in your application for an Executive Order, if applicable. Your exemption is effective when we grant you an Executive Order. You may alternatively request an exemption in a separate submission; for example, this would be necessary if you will not be the certifying manufacturer of record for the engines in question. We may require you to take specific steps to ensure that such engines are in a certified configuration before reaching the ultimate purchaser. Note that since this is a temporary exemption, it does not allow you to sell or otherwise distribute to ultimate purchasers an engine in an uncertified configuration. Note also that the exempted engine remains new and subject to emission standards (see definition of "exempted" in §1068.30) until its title is transferred to the ultimate purchaser or it otherwise ceases to be new.

(d) See §1068.261 for delegated-assembly provisions in which certifying manufacturers of record introduce into U.S. commerce engines that are not yet equipped with certain emission-related components.

(e) Engines used in hobby vehicles are not presumed to be engines subject to the prohibitions of §1068.101. Hobby vehicles are reduced-scale models of vehicles that are not capable of transporting a person. Some gas turbine engines are subject to the prohibitions of §1068.101, but we do not presume that all gas turbine engines are subject to these prohibitions. Other engines that do not have a valid Executive Order or exemption when introduced into U.S. commerce are presumed to be engines subject to the prohibitions of §1068.101 unless we determine that such engines are excluded from the prohibitions of §1068.101.

(f) While we presume that new non-hobby engines are subject to the prohibitions of §1068.101, we may determine that a specific engine is not subject to these prohibitions based on information you provide or other information that is available to us. For example, the provisions of this part 1068 and the standard-setting parts provide for

exemptions in certain circumstances. Also, some engines are subject to separate prohibitions under subchapter C instead of the prohibitions of §1068.101 (see for example, §89.1003).

§ 1068.260 DELETE,
REPLACE WITH:
§ 1068.2601 What ~~general~~ provisions apply for selling or shipping certified engines that are not yet in their certified configuration?

{Entire section text} DELETE,
REPLACE WITH:
This section describes an exemption that allows certifying manufacturers of record to sell or ship engines that are missing certain emission-related components if those components will be installed by an equipment manufacturer. This section does not apply to equipment subject to equipment-based standards. See the standard-setting part to determine whether and how the provisions of this section apply. This exemption is temporary as described in paragraph (f) of this section.

(a) Shipping an engine separately from an aftertreatment component that you have specified as part of its certified configuration will not be a violation of the prohibitions in §1068.101(a)(1) ~~, if you do all the following:~~ subject to the provisions in this section.

(b) If you manufacture engines and install them in equipment you also produce, you must take steps to ensure that your facilities, procedures, and production records are set up to ensure that equipment and engines are assembled in their proper certified configurations. For example, you may demonstrate compliance with the requirements of this section by maintaining a database showing how you pair aftertreatment components with the appropriate engines such that the final product is in its certified configuration.

(c) If you include the price of all aftertreatment components in the price of the engine and ship the aftertreatment components directly to the equipment manufacturer, or arrange for separate shipment by the component manufacturer to the equipment manufacturer, all the following conditions apply:

(1) Apply for and receive an Executive Order for the engine and its emission control system before shipment ~~–~~ as described in the standard-setting part. For an existing Executive Order, amend the application for certification by describing your plans to use the provisions of this section as described in paragraph (c)(8) of this section.

(2) Provide installation instructions in enough detail to ensure that the engine will be in its certified configuration if someone follows these instructions. Provide the installation instructions in a timely manner, generally directly after you receive an order for shipping engines or earlier. If you apply removable labels as described in paragraph (c)(7)(i) of this section, include an instruction for the equipment manufacturer to remove the label after installing the appropriate aftertreatment component.

(3) Have a contractual agreement with ~~an~~ the equipment manufacturer obligating the equipment manufacturer to complete the final assembly of the engine so it is in its certified configuration when ~~installed in the equipment.~~ final assembly is complete. This agreement must also obligate the equipment manufacturer to provide the affidavits ~~and cooperate with the audits~~ required under paragraph ~~(a)(6)~~ (c)(4) of this section.

~~(4) Include the cost of all aftertreatment components in the cost of the engine.~~

~~(5) Ship the aftertreatment components directly to the equipment manufacturer, or arrange for separate shipment by the component manufacturer to the equipment manufacturer.~~

~~(6)~~(4) Take appropriate additional steps to ensure that all engines will be in ~~their~~ a certified configuration when installed by the equipment manufacturer. At a minimum ~~do the following:~~

~~(i),~~ you must obtain annual affidavits from every equipment manufacturer to ~~whom~~ which you sell engines under this section. Include engines that you sell ~~through~~ to distributors or dealers. The affidavits must list the part numbers of the aftertreatment devices that equipment manufacturers install on each engine they purchase from you under this section and include confirmation that the number of aftertreatment devices received were sufficient for the number of engines involved.

~~(ii) If you sell more than 50~~

(5) [Reserved]

(6) Keep records to document how many engines ~~per~~ you produce under this exemption. Also, keep records to document your contractual agreements under paragraph (c)(3) of this section. Keep all these records for five years after the end of the applicable model year ~~under this~~ and make them available to us upon request.

(7) Make sure the engine has the emission control information label we require under the standard-setting part. Include additional labeling using one of the following approaches:

(i) Apply an additional removable label in a way that makes it unlikely that the engine will be installed in equipment other than in its certified configuration. The label must identify the engine as incomplete and include a clear statement that failing to install the aftertreatment device, or otherwise failing to bring the engine into its certified configuration, is a violation of federal law subject to civil penalty.

(ii) Add the statement "DELEGATED ASSEMBLY" to the permanent emission control information label. You may alternatively add the abbreviated statement "DEL ASSY" if there is not enough room on the label.

(8) Describe the following things in your application for certification:

(i) How you plan to use the provisions of this section.

(ii) A detailed plan for auditing equipment manufacturers, as described in paragraph (d)(3) of this section, if applicable.

(iii) All other steps you plan to take under paragraph (c)(4) of this section.

(9) If one of your engines produced under this section is selected for production-line testing or a selective enforcement audit, you must arrange to get a randomly selected aftertreatment component from either the equipment manufacturer or the equipment manufacturer's supplier. You may keep an inventory of these randomly selected parts, consistent with good engineering judgment and the intent of this section. You may obtain such aftertreatment components from any point in the normal distribution from the aftertreatment component manufacturer to the equipment manufacturer. Keep records describing how you randomly selected these aftertreatment components, consistent with the requirements specified in the standard-setting part.

(10) Note that for purposes of importation, you may itemize your invoice to identify separate costs for engines and aftertreatment components that will be shipped separately. A copy of your invoice from the aftertreatment manufacturer may be needed to avoid payment of importation duties for the engine that also include the value of aftertreatment components.

(d) If you do not include the price of all aftertreatment components in the price of the engine, you must meet all the conditions described in paragraphs (c)(1) through (9) of this section, with the following additional provisions:

(1) The contractual agreement described in paragraph (c)(3) of this section must include a commitment that the equipment manufacturer will do the following things:

(i) Purchase the aftertreatment components you have specified in your application for certification and keep records to document these purchases.

(ii) Cooperate with the audits described in paragraph (d)(3) of this section.

(2) You must have written confirmation that the equipment manufacturer has ordered the appropriate type of aftertreatment components for an initial shipment of engines under this section. For the purpose of this paragraph (d)(2), initial shipment means the first shipment of engines that are subject to new or more stringent emissions standard (or the first shipment of engines using the provisions of this section) to a given equipment manufacturer for a given engine family. For the purpose of this paragraph (d)(2), you may treat as a single engine family those engine families from different model years that differ only with respect to model year or other characteristics unrelated

to emissions. You must receive the written confirmation within 30 days after shipment. If you do not receive written confirmation within 30 days, you may not ship any more engines from that engine family to that equipment manufacturer until you have the written confirmation. Note that it may be appropriate to obtain subsequent written confirmations to ensure compliance with this section, as described in paragraph (c)(4) of this section.

(3) You must perform or arrange for audits of equipment manufacturers as follows:

(i) If you sell engines to 16 or more equipment manufacturers under the provisions of this section, you must annually ~~audit~~ perform or arrange for audits of four equipment manufacturers to whom you sell engines under this section. To select individual equipment manufacturers, divide all the affected equipment manufacturers into quartiles based on the number of engines they buy from you; select a single equipment manufacturer from each quartile each model year. Vary the equipment manufacturers ~~you audit~~ selected for auditing from year to year, though you may repeat an audit in a later model year if you find or suspect that a particular equipment manufacturer is not properly installing aftertreatment devices.

(ii) If you sell engines to fewer than 16 equipment manufacturers under the provisions of this section, ~~you may instead~~ set up a plan to ~~audit~~ perform or arrange for audits of each equipment manufacturer on average once every four model years. ~~Audits~~

(iii) Starting with the 2019 model year, if you sell engines to fewer than 40 equipment manufacturers under the provisions of this section, you may ask us to approve a reduced auditing rate. We may approve an alternate plan that involves audits of each equipment manufacturer on average once every ten model years as long as you show that you have met the auditing requirements in preceding years without finding noncompliance or improper procedures.

(iv) To meet these audit requirements, you or your agent must ~~involve~~ at a minimum inspect the assembling ~~companies' facilities, companies'~~ procedures, and production records to monitor their compliance with your instructions, ~~must include investigation of~~ investigate some assembled engines, and ~~must~~ confirm that the number of aftertreatment devices shipped were sufficient for the number of engines produced. ~~Where an equipment manufacturer is not located in the United States, you may conduct the audit at a distribution or port facility in the United States. You must keep records of these audits for five years after the end of the model year and provide a report to us describing any uninstalled or improperly installed aftertreatment components. Send us these reports within 90 days of the audit, except as specified in paragraph (d) of this section.~~

~~(iii) If you sell up to 50 engines per model year under this section, you must conduct audits as described in paragraph (a)(6)(ii) of this section or propose an alternative plan for ensuring that equipment manufacturers properly install aftertreatment devices.~~

~~(iv) If you produce engines and use them to produce equipment under the provisions of this section, you must take steps to ensure that your facilities, procedures, and production records are set up to ensure compliance with the provisions of this section, but you may meet your auditing responsibilities under this paragraph (a)(6) by maintaining a database showing how you pair aftertreatment components with the appropriate engines.~~

~~(7) Describe the following things in your application for certification:~~

~~(i) How you plan to use the provisions of this section.~~

~~(ii) A detailed plan for auditing equipment manufacturers, as described in paragraph (a)(6) of this section.~~

~~(iii) All other steps you plan to take under paragraph (a)(6) of this section.~~

~~(8) Keep records to document how many engines you produce under this exemption. Also,~~

(v) You must keep records ~~to document your contractual agreements under paragraph (a)(3) of this section. Keep all~~ of these ~~records~~ audits for five years after the end of the applicable model year ~~and make them available to us upon request~~.

~~(9) Make sure the engine has the emission control information label we require under the standard setting~~

(e) The following provisions apply if you ship engines without air filters or other portions of the air intake system that are specifically identified by part. ~~Apply an additional temporary label number~~ (or ~~tag in a way that makes it unlikely that the engine will be installed in equipment~~ other ~~than~~ specific part reference) in the application for certification such that the shipped engine is not in its certified configuration. ~~The label or tag must identify the~~ You do not need an exemption under this section to ship engines without air intake system components if you instead describe in your installation instructions how equipment manufacturers should use components meeting certain functional specifications.

(1) If you are using the provisions of this section to ship an engine without aftertreatment, apply all the provisions of this section to ensure that each engine ~~as incomplete and include a clear statement that failing to install the aftertreatment device, or otherwise bring the engine into~~, including its intake system, is in its certified configuration, ~~is~~ before it reaches the ultimate purchaser.

(2) If you are not using the provisions of this section to ship an engine without aftertreatment, shipping an engine without air-intake components that you have specified as part of its certified configuration will not be a violation of ~~federal law subject to civil penalty~~ the prohibitions in §1068.101(a) if you follow the provisions specified in

paragraph (b) or paragraphs (c)(1) through (9) of this section. We may require you to perform audits as specified in paragraph (d)(3) of this section should we have reason to suspect you have employed the provisions of this section improperly.

~~(b) An engine you produce under this section becomes new when it is fully assembled, except for aftertreatment devices, for the first time. Use this date to determine the engine's model year.~~

~~(c)~~(f) Once the equipment manufacturer takes possession of an engine exempted under this section and the engine reaches the point of final equipment assembly, the exemption expires and the engine is subject to all the prohibitions in ~~40 CFR 1068.101.~~ §1068.101. Note that the engine's model year does not change based on the date the equipment manufacturer adds the aftertreatment device and/or air filter under this section.

~~(d)~~(g) You may use the provisions of this section for engines you sell to a distributor as described in this paragraph (g) using one of the following approaches:

(1) You may sell engines through a distributor if you comply with the provisions of paragraph (d) of this section with respect to the equipment manufacturer.

(2) You may treat the distributor as the equipment manufacturer as described in this paragraph (g)(2) for all applicable requirements and prohibitions, except that flexibility engine allocations normally afforded to equipment manufacturers under the provisions in §§1039.625 and 1039.626 would not apply, unless the distributor also qualifies as an equipment manufacturer under §1039.625. Such distributors must bring engines into their final certified configuration. Such distributors must bring engines into their final certified configuration. This may include shipping the engine with the appropriate aftertreatment device and/or air filter, but without completing the assembly with all the components. The exemptions expire for such engines when the distributor no longer has control of them.

(h) You must notify us within 15 days if you find from an audit or another source that engines produced under this section are not in a certified configuration at the point of final assembly or that an equipment manufacturer has otherwise failed to meet its obligations under this section. If this occurs, send us a report describing the circumstances related to the noncompliance within 75 days after you notify us.

~~(e)~~(i) We may suspend, revoke, or void an exemption under this section, as follows:

(1) We may suspend or revoke your exemption for ~~the entire engine family if we determine that~~ a specific equipment manufacturer if any of the engines are not in ~~their~~ a certified configuration after installation in ~~the equipment, or if you fail~~ that manufacturer's equipment, or if we determine that the equipment manufacturer has otherwise failed to comply with the requirements of this section. We may also suspend or revoke your exemption for other engine families with respect to the equipment manufacturer unless

you demonstrate that the noncompliance is limited to a specific engine family. You may not use this exemption for future shipments to the affected equipment manufacturer without taking action beyond the minimum steps specified in this section, such as performing on-site audits.

(2) We may suspend or revoke your exemption for the entire engine family if we determine that you have failed to comply with the requirements of this section. If we ~~suspend or revoke~~ make an adverse decision with respect to the exemption for any of your engine families under this paragraph ~~(d)~~(i), this exemption will not apply for future certificates unless you ~~demonstrate~~ convince us that the factors causing the ~~nonconformity~~ noncompliance do not apply to the other engine families. We may ~~suspend or revoke the exemption for shipments to a single facility where final assembly occurs~~ also set additional conditions beyond the provisions specified in this section.

~~(2)~~(3) We may void your exemption for the entire engine family if you intentionally submit false or incomplete information or fail to keep and provide to EPA the records required by this section. Note that all records and reports required under this section (whether generated by the engine manufacturer, equipment manufacturer, or others) are subject to the prohibition in §1068.101(a)(2), which prohibits the submission of false or incomplete information. For example, the affidavits required by this section are considered a submission.

~~(f)~~(j) Engine manufacturers are liable for the in-use compliance, including misbuilds, of any engine that is exempt under this section.

~~(g)~~(k) It is a violation of the California Health and Safety Code, Division 26, and corresponding regulations and §1068.101(a)(1) for any person to ~~complete assembly of the~~ introduce into California commerce a previously exempted engine, including as part of a piece of equipment, without complying fully with the installation instructions.

* * * * *

§ 1068.265 What provisions apply to engines/equipment that are conditionally exempted from certification?

* * * * *

Subpart D – Imports

§ 1068.301 What general provisions apply?

{Entire section text} DELETE,
REPLACE WITH:
The provisions in Title 40, Code of Federal Regulations, §1068 Subpart D (76 FR 37977, June 28, 2011) apply for equipment introduced into commerce in California, but produced outside the United States. ARB may seek independent enforcement action

against manufacturers for violations of this subpart D per the provisions of California Health and Safety Code, Division 26, and corresponding regulations, which may include civil penalties and/or the revoking of Executive Orders.

§ 1068.305 How do I get an exemption or exclusion for imported engines/equipment?

{Entire section text} DELETE,
REPLACE WITH:
The provisions in §1068.301 apply.

* * * * *

(e) ADD:
~~(f)~~(e) For any engine whose destination is California, send the completed form to the Executive Officer of the Air Resources Board.

§ 1068.310 What are the exclusions for imported engines/equipment?

{Entire section text} DELETE,
REPLACE WITH:
The provisions in §1068.301 apply.

§ 1068.315 What are the permanent exemptions for imported engines/equipment?

{Entire section text} DELETE,
REPLACE WITH:
The provisions in §1068.301 apply.

§ 1068.320 How must I label an imported engine with a permanent exemption?

DELETE:

§ 1068.325 What are the temporary exemptions for imported engines/equipment?

{Entire section text} DELETE,
REPLACE WITH:
The provisions in §1068.301 apply.

§ 1068.330 DELETE.

§ 1068.335 What are the penalties for violations?

{Entire section text} DELETE,
REPLACE WITH:
The provisions in §1068.301 apply.

* * * * *

ADD:
(c) Under § 43017 of the California Health and Safety Code, the Air Resources Board may enjoin any violation of any provision of Subpart D of this part 1068.

§ 1068.360 What restrictions apply to assigning a model year to imported engines and equipment?

{Entire section text} DELETE,
REPLACE WITH:
The provisions in §1068.301 apply.

Subpart E – Selective Enforcement Auditing

§ 1068.401 What is a selective enforcement audit?

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§ 1068.405 What is in a test order?

* * * * *

§ 1068.410 How must I select and prepare my engines?

* * * * *

(e)(1) DELETE,
REPLACE WITH:
(e)(1) ~~We may adjust or require you to adjust idle speed outside the physically adjustable range as needed until the engine has stabilized emission levels (see paragraph (f) of this section). We may ask you for information needed to establish an alternate minimum idle speed.~~ [Reserved]

* * * * *

(f) DELETE,
REPLACE WITH:
(f) Stabilizing emission levels. (1) Before you test production-line engines, you may operate the engine to stabilize the emission levels. Using good engineering judgment, operate your engines in a way that represents the way production engines will be used. You may operate each engine for no more than the greater of two periods:

(~~1~~i) 50 hours.

(2ii) The number of hours you operated your emission-data engine for certifying the engine family (see 40 CFR part 1065, subpart E, 76 FR 37977, June 28, 2011, 2010).

(2) [Reserved]

* * * * *

§ 1068.415 How do I test my engines?

* * * * *

(d) DELETE,
REPLACE WITH:
(d) Accumulate service on test engines at a minimum rate of 6 hours per engine during each 24-hour period. The first 24-hour period for service accumulation begins when you finish preparing an engine for testing. The minimum service accumulation rate does not apply on weekends or holidays. You may ask us to approve a lower service accumulation rate. We may require you to accumulate hours more rapidly than the minimum rate, as appropriate. Plan your service accumulation to allow testing at the rate specified in paragraph (c) of this section. Select engine operation for accumulating operating hours on your test engines to represent normal in-use engine operation for the engine family.

* * * * *

§ 1068.420 How do I know when my engine family fails an SEA?

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§ 1068.425 What happens if one of my production-line engines exceeds the emission standards?

* * * * *

§ 1068.430 What happens if an engine family fails an SEA?

* * * * *

(c) DELETE,
REPLACE WITH:
(c) ~~Up to 15 days after we suspend the certificate for an engine family, y~~ You may ask for a hearing to determine whether the tests and sampling methods were proper (see subpart G of this part)~~.~~ up to 15 days after we suspend the Executive Order for a family. If we agree ~~before a hearing~~ that we used erroneous information in deciding to suspend the Executive Order before a hearing is held, we will reinstate the Executive Order.

§ 1068.435 May I sell engines from an engine family with a suspended Executive Order?

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§ 1068.440 How do I ask ARB to reinstate my suspended Executive Order?

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§ 1068.445 When may ARB revoke my Executive Order under this subpart and how may I sell these engines again?

* * * * *

§ 1068.450 What records must I send to ARB?

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§ 1068.455 What records must I keep?

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Appendix A to Subpart E of Part 1068-Plans for Selective Enforcement Auditing

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Subpart F – Reporting Defects and Recalling Engines/Equipment

§ 1068.501 How do I report emission-related defects?

{Entire section text} DELETE,
REPLACE WITH:
The provisions in Title 40, Code of Federal Regulations, §1068.501 (76 FR 37977, June 28, 2011) apply.

§ 1068.505 How does the recall program work?

* * * * *

§ 1068.510 How do I prepare and apply my remedial plan?

* * * * *

§ 1068.515 How do I mark or label repaired engines/equipment?

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§ 1068.520 How do I notify affected owners?

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§ 1068.525 What records must I send to ARB?

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§ 1068.530 What records must I keep?

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§ 1068.535 How can I do a voluntary recall for emission-related problems?

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Subpart G – Hearings

§ 1068.601 What are the procedures for hearings?

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Appendix I to Part 1068 – Emission-Related Components

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Appendix II to Part 1068 – Emission-Related Parameters and Specifications

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APPENDIX N

PROPOSED TEST PROCEDURES

Large Spark-Ignition Engines

(2007 and Later Model Years; Part 1065/1068)

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State of California

AIR RESOURCES BOARD

CALIFORNIA EXHAUST AND EVAPORATIVE EMISSION STANDARDS AND TEST PROCEDURES FOR NEW 2007 AND LATER OFF-ROAD LARGE SPARK-IGNITION ENGINES

(Test Procedures 1065 and 1068)

Adopted: March 2, 2007

Amended: <insert applicable amendment date>

NOTE: This document incorporates by reference 40 Code of Federal Regulations (CFR) Part 1065 – Engine-Testing Procedures, Subparts A, B, C, D, E, F, G, H, I, J, and K, as amended July 13, 2005, 40 CFR Part 1068, Subparts A, B, C, D, E, F, and G, including Appendix A to Subpart E and Appendix I and II to part 1068, as amended July 13, 2005, and the internally referenced subparts of 40 CFR Part 85, 40 CFR Part 86, and 40 CFR Part 1048. Sections that have been included in their entirety are set forth with the section number and title. California provisions that replace specific federal language provisions are denoted by the words "DELETE" for the federal language and "REPLACE WITH" or "ADD" for the California language. The symbols "* * * * *" and "..." mean that the remainder of the CFR text for a specific section is not shown in these procedures but has been incorporated by reference, with only the printed text changed. CFR sections that are not listed are not part of the test procedures. If there is any conflict between the provisions of this document and the California Health and Safety Code, Division 26, or Title 13 of the California Code of Regulations (CCR), the Health and Safety Code and Title 13 apply.

CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR NEW 2007 AND LATER OFF-ROAD LARGE SPARK-IGNITION ENGINES

The following provisions of Part 1065, and Part 1068, Title 40, Code of Federal Regulations, as proposed by the United States Environmental Protection Agency on the date listed, are adopted and incorporated herein by this reference for 2007 model year and later off-road large spark-ignition engines as the California Exhaust Emission Standards and Test Procedures for New 2007 and Later Off-Road Large Spark-Ignition Engines, except as altered or replaced by the provisions set forth below.

PART 1065 – ENGINE-TESTING PROCEDURES

SOURCE: 70 FR 40516, July 13, 2005, unless otherwise noted.

* * * * *

Subpart H –Engine Fluids, Test Fuels, Analytical Gases and Other Calibration Standards

§ 1065.701 General requirements for test fuels.

(a) (1) Except as allowed in (2), ~~I~~if the engine is a gasoline-fueled large spark-ignition engine, then the test fuel used shall be consistent with the fuel specifications as outlined in the "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," as adopted August 5, 1999, and last amended August 4, 2005, and incorporated by reference herein. The California fuel specifications are contained in the California Code of Regulations, Title 13, Chapter 5, Article 1, Sections 2260-2272. If the engine is tested using the U.S. EPA test fuel, consistent with the fuel specifications as outlined in Title 40 Code of Federal Register, Part 1065, subpart H, the manufacturer shall demonstrate that the emission test results complies with these Test Procedures.

(2) For 2013-2018 model-year gasoline-fueled, large spark-ignition engines, the manufacturer has the option to use the fuel specified in (a)(3).

(3) For 2019 and later gasoline-fueled, large spark-ignition engines: The certification test fuel for exhaust emission testing must be consistent with the fuel specifications as outlined in title 13, section 1961.2 and the "California Exhaust Emission Standards and Test Procedures for 2015 and Subsequent Model Passenger Cars, Light Duty Trucks, and Medium Duty Vehicles," adopted <insert adoption date>, and incorporated by reference herein. The test fuel specifications should remain consistent from batch to batch.

~~(2)~~(4) If the engine is not a gasoline-fueled large spark-ignition engine, then the test fuel used shall be consistent with the fuel specifications as outlined in the "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium- Duty Vehicles," as adopted August 5, 1999, and last amended August 4, 2005, and incorporated by reference herein. The California fuel specifications are contained in the California Code of Regulations, Title 13, Chapter 5, Article 3, Sections 2290-2293.5. If the engine is tested using the U.S. EPA test fuel, consistent with the fuel specifications as outlined in Title 40 Code of Federal Register, Part 1065, subpart H, the manufacturer shall demonstrate that the emission test results complies with these Test Procedures.

* * * * *

§ 1065.710 Gasoline.

* * * * *

(b) Up to and including the 2012 model year, ~~T~~there are two grades of gasoline specified for use as a test fuel. If the standard-setting part requires testing with fuel appropriate for low temperatures, use the test fuel specified for low-temperature testing. Otherwise, use the test fuel specified for general testing. The two grades are specified in Table 1 of this section.

* * * * *

APPENDIX O

PROPOSED TEST PROCEDURES

Large Spark-Ignition Engines

(2010 and Later Model Years; Part 1048)

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State of California

AIR RESOURCES BOARD

CALIFORNIA EXHAUST AND EVAPORATIVE EMISSION STANDARDS AND TEST PROCEDURES FOR NEW 2010 AND LATER OFF-ROAD LARGE SPARK-IGNITION ENGINES

(2010 and Later Test Procedure 1048)

Adopted: March 2, 2007

Amended: November 21, 2008

Amended: [insert applicable amendment date]

NOTE: This document incorporates by reference Title 40, Code of Federal Regulations (CFR), Part 1048 – **CONTROL OF EMISSIONS FROM NEW, LARGE NONROAD SPARK-IGNITION ENGINES**, Subparts A, B, C, F, G, H, and I, including Appendix I and II to Part 1048 as amended on July 13, 2005 (Federal Register, Volume 70, pages 40465 through 40486), and the internally referenced subparts of 40 CFR Part 86, 40 CFR Part 1065, and 40 CFR Part 1068. Sections that have been included in their entirety are set forth with the section number and title. California provisions that replace specific federal provisions are denoted by the words "DELETE" for the federal language and "REPLACE WITH" or "ADD" for the California regulations. The symbols "* * * * *" and "..." mean that the remainder of the CFR text for a specific section, which is not shown in these regulations, has been included by reference, with only the printed text changed. Federal regulations that are not listed are not part of the California regulations. Text in *Italics* is provided as rationale for replacement language. This document is all newly adopted text. *[The italicized text in brackets describes the purpose of the California provisions.]*

NOTE: This document is printed in a style to indicate changes from the existing provisions. All existing language is indicated by plain type. All additions to language are indicated by underlined text. All deletions to language are indicated by strikeout. Only those sections containing the suggested modifications from the existing language are included. All other portions remain unchanged and are indicated by the symbol "* * * * *" for reference.

PART 1048 – CONTROL OF EMISSIONS FROM NEW, LARGE NONROAD SPARK-IGNITION ENGINES

* * * * *

Subpart B—Emission Standards and Related Requirements

§1048.101 What exhaust emission standards must my engines meet?

* * * * *

(e) Fuel tTypes and Test Fuel.

(1) Fuel tTypes

* * * * *

(2) Test Fuel.
(A) Except as outlined in (B), lif the engine is a gasoline-fueled large spark-ignition engine, then the test fuel used shall be consistent with the fuel specifications as outlined in the "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," as of January 1, 2006 (last amended August 4, 2005) incorporated by reference in Section 1961(d), Title 13, CCR). The California fuel specifications are contained in the California Code of Regulations, Title 13, Chapter 5, Article 1, Sections 2260-2272. If the engine is tested using the U.S. EPA test fuel, consistent with the fuel specifications as outlined in Title 40 Code of Federal Register, Part 1065, subpart H, the manufacturer shall demonstrate that the emission test results complies with these Test Procedures.

(B) For 2013-2018 model-year gasoline-fueled, large spark-ignition engines, the manufacturer has the option to use the fuel specified in (e)(2)(C).

(C) For 2019 and later gasoline-fueled, large spark-ignition engines: The certification test fuel for exhaust emission testing must be consistent with the fuel specifications as outlined in title 13, section 1961.2 and the "California Exhaust Emission Standards and Test Procedures for 2015 and Subsequent Model Passenger Cars, Light Duty Trucks, and Medium Duty Vehicles," adopted <insert date of adoption>, and incorporated by reference herein. The test fuel specifications should remain consistent from batch to batch.

(B)(D) If the engine is not a gasoline-fueled large spark-ignition engine, then the test fuel used shall be consistent with the fuel specifications as outlined in the "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," as of January 1, 2006 (last amended August 4, 2005) incorporated by reference in Section 1961(d), Title 13, CCR). The California fuel specifications are contained in the California Code of

Regulations, Title 13, Chapter 5, Article 3, Sections 2290- 2293.5. If the engine is tested using the U.S. EPA test fuel, consistent with the fuel specifications as outlined in Title 40 Code of Federal Register, Part 1065, subpart H, the manufacturer shall demonstrate that the emission test results complies with these Test Procedures.

~~(C)~~(E) During all engine tests, the engine shall employ a lubricating oil consistent with the engine manufacturer's specifications for that particular engine. These specifications shall be recorded and declared in the certification application.

APPENDIX P

PROPOSED TEST PROCEDURES

New Off-Highway Recreational Vehicles and Engines

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State of California

AIR RESOURCES BOARD
CALIFORNIA EXHAUST EMISSIONS STANDARDS AND TEST PROCEDURES FOR 1997 AND LATER OFF-HIGHWAY RECREATIONAL VEHICLES AND ENGINES

Adopted: May 26, 1995

Amended: October 22, 1999

Amended: June 1, 2007

Amended: <insert date of amendment here>

NOTE: This document incorporates by reference, with noted modifications, sections of Subparts E and F, Part 86, Title 40, Code of Federal Regulations, and sections of Subparts B, C, F, and I, Part 1051, Title 40, Code of Federal Regulations. California provisions which replace specific federal provisions are denoted by the words "DELETE" for the federal language and "REPLACE WITH" or "ADD" for the new California language. The symbols "* * * * *" and "..." mean that the federal text that immediately follows the symbols is unchanged and incorporated by reference into the California Standards and Test Procedures. Sections of the federal regulations which are not listed are not part of the California Standards and Test Procedures.

This Document is printed in a style to indicate changes from the existing provisions. All existing language is indicated by plain type. All additions to language are indicated by underline. All deletions to language are indicated by strikeout.

CALIFORNIA EXHAUST EMISSIONS STANDARDS AND TEST PROCEDURES FOR 1997 AND LATER OFF-HIGHWAY RECREATIONAL VEHICLES AND ENGINES

The following provisions of Subpart E and F, Part 86, Title 40, Code of Federal Regulations, as adopted or amended by the U. S. Environmental Protection Agency on the date listed are adopted and incorporated herein by this reference as the California Exhaust Emission Standards and Test Procedures for 1997 and Later Off-Highway recreational vehicles and engines, except as altered or replaced by the provisions set forth below.

PART 86, CONTROL OF EMISSIONS FROM NEW AND IN-USE HIGHWAY VEHICLES AND ENGINES

Subpart E, General Provisions for Emission Regulations for 1978 and Later New Motorcycles

SOURCE: 42 FR 1126, Jan. 5, 1977, unless otherwise noted.

* * * * *

Subpart F -- Emission Regulations for 1978 and Later New Motorcycles; Test Procedures

* * * * *

86.513 - 90 Fuel and engine lubricant specifications. 54 FR 14544, Apr. 11, 1989.

(a) DELETE

REPLACE WITH:

(a)(1)(i) Gasoline having the following specifications will be used by the Administrator in exhaust emission testing. Gasoline having the following specifications or substantially equivalent specifications approved by the Administrator, shall be used by the manufacturer for emission testing except that the octane specifications do not apply.

* * * * *

(ii) Additionally for the 2013-2018 model-year off-highway recreational vehicles, the manufacturer has the option to use the fuel specified in (a)(2) below.

(2) For 2019 and later model-year off-highway recreational vehicles: The certification test fuel for exhaust emission testing must be consistent with the fuel specifications as outlined in title 13, section 1961.2 and the "California Exhaust Emission Standards and Test Procedures for 2015 and Subsequent Model Passenger Cars, Light Duty Trucks, and Medium Duty Vehicles," adopted <insert date of adoption>, and incorporated by reference herein. The test fuel specifications should remain consistent from batch to batch.

* * * * *

APPENDIX Q

PROPOSED TEST PROCEDURES

Recreational Marine Spark-Ignition Engines

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State of California

AIR RESOURCES BOARD

CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR 2001 AND LATER SPARK-IGNITION MARINE ENGINES

Adopted: October 21, 1999

Amended: June 5, 2002

Amended: September 22, 2006

Amended: June 5, 2009

Last Amended: <insert date of amendment>

NOTE: This document is printed in a style to indicate changes from the existing provisions. All existing language is indicated by plain type. All additions to language are indicated by underlined text. All deletions to language are indicated by strikeout. Only those sections containing the suggested modifications from the existing language are included. All other portions remain unchanged and are indicated by the symbol "* * * * *" for reference.

CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES

FOR 2001 AND LATER SPARK-IGNITION MARINE ENGINES

* * * * *

Part III. Emission Test Equipment Provisions.

* * * * *

44. Lubricating Oil and Test Fuel.

* * * * *

(b) Test fuels – certification.

(1) Petroleum-based fuels.

(i) The manufacturer must use gasoline having the specifications or substantially equivalent specifications approved by the Executive Officer, as specified in Table 8-1 below for exhaust emission testing of gasoline fueled engines. As an alternative, the manufacturer may use the fuel specifications as outlined in the California Code of Regulations, Title 13, section 1960.1, and the latest amendment of the "California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles", incorporated herein by reference. The test fuel specification in either case should remain consistent from batch to batch. The specification range of the fuel to be used under this paragraph must be reported in accordance with Part I, section 14(b)(2)(vi).

* * * * *

(ii) Additionally for the 2013-2018 model-year spark-ignition marine engines, the manufacturer has the option to use the fuel specified in (b)(2) below.

(2) For 2019 and later model-year spark-ignition marine engines: The certification test fuel for exhaust emission testing must be consistent with the fuel specifications as outlined in title 13, section 1961.2 and the "California Exhaust Emission Standards and Test Procedures for 2015 and Subsequent Model Passenger Cars, Light Duty Trucks, and Medium Duty Vehicles," adopted <insert adopted date>, and incorporated by reference herein. The test fuel specifications should remain consistent from batch to batch.

* * * * *

APPENDIX R

TECHNICAL SUPPORT DOCUMENT FOR PROPOSED AMENDMENTS RELATED TO TIER 4 OFF-ROAD COMPRESSION-IGNITION ENGINE REGULATIONS

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Detailed Descriptions of Proposed Amendments: Tier 4 Off-Road CI Engines

I. DEFINITIONS

This section provides background on key terms that staff is proposing for incorporation or modification in to the California off-road diesel regulations and/or test procedures.

- 2011 and Later Test Procedures:

In keeping with the precedence for incorporating test procedures and defining a standardized abbreviation for them in the definition section §2421 of the off-road diesel regulation, staff's proposal assigns the updated test procedures titled "California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression Ignition Engines, Parts I-D, I-E, and I-F," to new subparagraph (a)(4)(B) as the 2011 and Later Test Procedures. The previous version of the test procedures are relocated to new subparagraph (a)(4)(A), previously just (a)(4), and retitled to indicate model year-limited applicability through the 2010 model year (i.e., 2008-2010 Test Procedures).

- Constant Speed Engine:

Staff proposes to align with the federal definition of "constant speed engine/operation" in 40 CFR, part 1039.801. The new definition more accurately describes the normal operation of a constant speed engine, including a more realistic allowance for fluctuating engine speed under changing loads. The revised definition is appended to the existing definitions of "constant speed engine" in new subparagraph (a)(15)(C) with referenced applicability to 2011 and later model year engines,

- Date of Manufacture or Build Date:

The proposal aligns with the federal definition of "date of manufacture" described in 40 CFR, part 1068.30 to standardize the assignment of engine build dates. Further, the use of the term in §2423(j)(1) of the regulation to characterize the type of power to be included on the emissions label for replacement engines necessitates the creation of a new definition for "Date of Manufacture" in §2421(a)(19). All subsequent definitions are renumbered to preserve alphabetical order.

- Carryover:

Staff proposes to align with the federal definition of "carryover' in 40 CFR, part 1039.801 to ensure uniform criteria for the application of data from previous model year engine families.

II. EMISSION STANDARDS

- Proposed Alternate Tier 4 NMHC+NOx standards and FEL Caps.

Table R - II.A; Tier 4 Exhaust Emission Standards
(grams per kilowatt-hour)

MAXIMUM ENGINE POWER	MODEL YEAR	TYPE	PM	NMHC+ NOX	NMHC	NOX	CO
			grams per kilowatt-hour				
56≤kW<75	2012-2014	PHASE-IN	0.02	-	0.19	0.40	5.0
		PHASE-OUT		4.7	-	-	
		or/ ALT NOX		-	0.19	3.4	
		or/ ALT NOX+NMHC		3.5	-	-	
	2015 and later	FINAL		-	0.19	0.40	
75≤kW<130	2012-2014	PHASE-IN	0.02	-	0.19	0.40	5.0
		PHASE-OUT		4.0	-	-	
		or/ ALT NOX		-	0.19	3.4	
		or/ ALT NOX+NMHC		3.5	-	-	
	2015 and later	FINAL		-	0.19	0.40	
130≤kW≤560	2011-2013	PHASE-IN	0.02	-	0.19	0.40	3.5
		PHASE-OUT		4.0	-	-	
		or/ ALT NOX		-	0.19	2.0	
		or/ ALT NOX+NMHC		2.1	-	-	
	2014 and later	FINAL		-	0.19	0.40	

- Proposed ALT NOx FEL Cap Applicability

Table R - II.B; Tier 4 Family Emission Limit (FEL) Caps

MAXIMUM ENGINE POWER	FEL TYPE	MODEL YEAR	PM	NOX	NMHC+ NOX
			grams per kilowatt-hour		
56≤kW<75	Phase-in	2012-2014	0.04	0.80	-
	Phase-out			-	7.5
	Alternate NOx Std	2012-2013	0.04	3.0	-
		2012-2014		4.4	
	Alternate NOx+NMHC Std	2012-2013/2014	0.04	-	4.7
	Primary	2014/2015 and later	0.04	0.80	-
	ALT 20% PM	2012-2015	0.40		-
	ALT 20% NOX	2012-2015		4.4	-
	ALT 20% NOx+NMHC Std	2012-2015	-	-	4.7
	ALT 5%	2016 and later	0.40	4.4	-
75≤kW<130	Phase-in	2012-2014	0.04	0.80	-
	Phase-out			-	6.6
	Alternate NOx Std	2012-2013		3.0[7]	-
		2012-2014		3.8	-
	Alternate NOx+NMHC Std	2012-2013/2014		-	4.0
	Primary	2014/2015 and later		0.80	-
	ALT 20% PM	2012-2015	0.30		-
	ALT 20% NOX	2012-2015		3.8	-
	ALT 20% NOx+NMHC Std	2012-2015	-	-	4.0
	ALT 5%	2016 and later	0.30	3.8	-
130≤kW≤560	Phase-in	2011-2013	0.04	0.80	-
	Phase-out			-	6.6/6.4
	Alternate NOx Std	2011-2013		2.7	-
	Alternate NOx+NMHC Std	2011-2013		-	4.0
	Primary	2014 and later		0.80	-
	ALT 20% PM	2011-2014	0.20		-
	ALT 20% NOX	2011-2014		3.8	-
	ALT 20% NOx+NMHC Std	2012-2015	-	-	4.0
	ALT 5%	2015 and later	0.20	3.8	-

III. DIFFERENCES BETWEEN CALIFORNIA AND FEDERAL REGULATIONS

A. PROPOSED NEW NON-ALIGNMENT REQUIREMENTS

1. Replacement Engine Labeling

Staff proposes to include additional information on replacement engine labels to assist ARB's in-use off-road diesel modernization programs that rely on accurate power and emissions performance information to ensure the calculation of appropriate fleet emission averages. In addition to the proposed harmonized statement of compliance in §2423(j)(1) of the regulations and §1068.240 of the Test Procedures, the new California label would also include "engine power," "reference family name," and "date of manufacture." These additional parameters would provide end-users with the information necessary to accurately register their engines and equipment, and would greatly enhance the ability of ARB's field inspectors to enforce the regulations. Federal regulations do not include a similar requirement because U.S. EPA does not currently regulate in-use off-road engines, making knowledge of these parameters less critical outside of California.

2. Preliminary Approval

Staff proposes not to align with a U.S. EPA amendment to §1039.210 that gives manufacturers the assurance that preliminary approvals (i.e., those given prior to the approval of a manufacturer's certification application) will not usually be reversed apart from the discovery of new information contrary to the findings that resulted in the preliminary approval. Rather than to provide potentially specious global assurances, staff prefers to continue the practice of working with industry on a case-by-case basis to provide direction on certification requirements and options prior to application. Ultimately, however, it is the manufacturer's responsibility to ensure that it has met the letter of the law regarding certification requirements. The issuance of an Executive Order, after reviewing an application for certification, is, and should remain, the official means for granting binding approval.

3. Untracked Replacement Engine Provision

Staff proposes not to align with an amendment to §1068.240 permitting a small number of replacement engines to be exempt from tracking requirements (e.g., labels). As noted above in the discussion for replacement engine labeling, properly labeled engines are extremely important for the correct implementation and enforcement of California's in-use off-road fleet modernization programs. Even a small number of engines without labels could hamper registration and enforcement efforts sufficiently to compromise the effectiveness of those programs and the emission reduction benefits associated with them. This is not

as large a concern federally because U.S. EPA does not regulate in-use off-road engines like California.

4. Engine Definition

Staff proposes not to align with U.S. EPA's definition of an engine as an engine block with an installed crankshaft, nor U.S. EPA's definition of a partially complete engine as defined in §1068.240. Rather, staff chooses to remain flexible in its interpretation of what constitutes an engine, generally, an assemblage of systems and components that are capable of providing power and generating emissions. Nevertheless, the lack of a generic and formal "engine" definition is not necessary for compliance with the California regulation or any portion of the incorporated Test Procedures. The California regulations already provide for the labeling and final assembly of partially complete (or ""incomplete") engines in §2423(l). This section, as noted below in the discussion on the rebuild labeling prohibition and supplemental label requirement is already a departure from federal requirements and would not support the federal definition of a partially complete engine.

B. PRIOR NON-ALIGNMENT REQUIREMENTS

Flexibility Engine Labeling
ARB requires the inclusion of a reference engine family name on the emission control label of flexibility engines to aid in the verification of emission levels by field inspectors

Flexibility Engine Executive Orders
ARB requires that engines produced for use in flexibility equipment be covered by an Executive Order.

Rebuild Labeling Prohibition and Supplemental Label Requirement
ARB adopted a new §2423(l) during the previous amendment of the off-road diesel regulations that clarifies the categorization of remanufactured engines as a subset of rebuilt engines, thereby subject to the same requirements as rebuilt engines, and specifies labeling content for the different types of rebuilt engines.

Extension of Replacement Engine Reporting Requirements
ARB clarified that when replacing a California certified off-road diesel engine, equipment manufacturers are generally required to use the cleanest engines available. This interpretation of existing language differs from U.S. EPA's interpretation which states that the replacement engine must be "at least as clean" as the engine it replaces.

In-Use Compliance/Recall Program

ARB maintained the independent authority of California to investigate and recall engines found to be in violation of the regulations apart from U.S. EPA, if necessary.

APPENDIX S

Summary & Rationale

Small Off-Road Engine Regulations

- Title 13, California Code of Regulations
- Test Procedures

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Summary and Rationale for Proposed Regulations

Section 2403. Exhaust Emission Standards and Test Procedures–Small Off-Road Engines.

This purpose of this section is to identify the exhaust and evaporative emission standards, and to incorporate by reference the required test procedures to be used for demonstrating compliance with the applicable emission standards of the small off-road engine category, which are necessary to control the hydrocarbon, carbon monoxide, and oxides of nitrogen emissions from these sources.

(b)(2)(B) The purpose of this subsection is to exclude manufacturers of Blue Sky Engines from the averaging, banking, and trading provisions, as well as enabling manufacturers of zero-emission engines to certify as Blue Sky Engines. Guidance for obtaining zero-emission engine certification is also provided. The proposed amendment is necessary in order to clarify the most recent amendment date to these test procedure documents.

(d) The purpose of this subsection is to identify and incorporate by reference the test procedures applicable for small off-road engines, which are necessary to control the hydrocarbon, carbon monoxide and oxide of nitrogen emissions from these sources. The proposed amendment is necessary in order to modify the applicability date of the existing test procedure and introduces the new test procedures for 2013 and later small off-road engines.

Section 2407. New Engine Compliance and Production Line Testing–New Small Off-Road Engine Selection, Evaluation, and Enforcement Action.

(a)(7) The purpose of this subsection is to identify the applicable test procedures for conducting compliance and production line testing. The proposed amendment is necessary to order to modify the applicability date of the existing test procedure and introduces the new test procedures for 2013 and later small off-road engines.

California Exhaust Emission Standards and Test Procedures for 2005-2012 Small Off-Road Engines

The purpose of this test procedure is to identify the exhaust emission standards and test procedures applicable for small off-road engines, which is necessary to control the hydrocarbon, carbon monoxide, and oxide of nitrogen emissions from these sources.

Staff proposes to retire the existing "California Exhaust Emission Standards and Test Procedures for New 2005 and Later Small Off-Road Engines," by retitling them as the "California Exhaust Emission Standards and Test Procedures for New 2005-2012 Small Off-Road Engines." The applicability of the current test procedures will then be limited to engines through the 2012 model year.

The proposed amendment is necessary in order to rename the existing test procedure document to distinguish its applicability, and incorporate this test procedure by reference in to section 2403, title 13, California Code of Regulations.

Summary and Rationale for Proposed Regulatory Amendments

California Exhaust Emission Standards and Test Procedures For New 2013 and Later Small Off-Road Engines; Engine-Testing Procedures (Part 1054).

The purpose of this Part 1054 is to identify the exhaust emission test procedures applicable for small off-road engines and equipment. Staff is proposing to align the small off-road engine and equipment exhaust emission test procedures with U.S. EPA's Part 1054, as last amended November 8, 2010. A summary and rationale is provided below for the sections and subsections that are being incorporated into the Small Off-Road Engines regulations. Some sections were changed from the original text of Part 1054.

Subpart A – Overview and Applicability

The purpose of Subpart A is to provide a general overview of Part 1054 and to specify its applicability to SORE.

§1054.1 Does this part apply for my engines and equipment?

§1054.1 (a) The purpose of this subsection is to identify the engines and equipment that are affected by these regulations.

§1054.1 (a) (1) The purpose of this subsection is to lay out the exhaust emission requirements.

§1054.1 (a) (2) The purpose of this subsection is to explain that small off-road equipment evaporative emission standards and regulations remain as specified in to Title 13, CCR, Chapter 15, rather than as U.S. EPA's evaporative emission requirements.

§1054.1 (a) (3) The purpose of this subsection is to state the model year with which these requirements become effective.

§1054.1 (a) (4) The purpose of this subsection is to inform stakeholders how the small off-road engine regulations relate to emergency rescue equipment.

§1054.1 (c) The purpose of this subsection is to inform stakeholders that the existing test procedures are effective until the proposed test procedures go into effect.

In general, the proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy

additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.2 Who is responsible for compliance?

§1054.2 The purpose of this section is to define who "you" is throughout the Part, as well as to whom the certification requirements are applicable. Specifically, "you" would be the certifying manufacturer.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.10 How is this part organized?

§1054.10 (a) The purpose of this subsection is to describe what is in Subpart A which is to give an overview of regulatory requirements.

§1054.10 (b) The purpose of this subsection is to describe what is in Subpart B which is to describe the emission standards and other requirements that need to be met to certify engines.

§1054.10 (c) The purpose of this subsection is to describe what is in Subpart C which describes how to apply for an Executive Order.

§1054.10 (d) The purpose of this subsection is to describe what is in Subpart D which gives general provisions for testing production-line engines.

§1054.10 (e) The purpose of this subsection is to describe what is in Subpart E which describes general provisions for testing in-use engines.

§1054.10 (f) The purpose of this subsection is to describe what is in Subpart F which describes how to test your engines.

§1054.10 (g) The purpose of this subsection is to describe what is in Subpart G which describes requirements, prohibitions, and other provisions that apply to manufacturers.

§1054.10 (i) The purpose of this subsection is to describe what is in Subpart I which contains definitions and reference information.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.15 Do any other CFR parts apply to me?

§1054.15 (b) The purpose of this subsection is to explain the purpose of Part 1065, and Subpart F of Part 1054, which are to describe procedures and equipment specifications for testing engines to measure exhaust emissions and determine whether or not the engines meet the exhaust emission standards.

§1054.15 (d) The purpose of this subsection is catch all other references that may be made in this Part 1054 so that they are officially included into this document

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.20 What requirements apply to my equipment?

§1054.20 (a) The purpose of this subsection is to state that all applicable standards apply with the engine and fuel systems installed.

§1054.20 (b) The purpose of this subsection is to state that all small off-road equipment are subject to Title 13, CCR, regulations for both exhaust and evaporative emissions.

§1054.20 (c) The purpose of this subsection is to state that label requirements are found in Title 13, CCR.

§1054.20 (d) The purpose of this subsection is to state that equipment and fuel systems meet the evaporative emission requirements in Title 13, CCR.

§1054.20 (e) The purpose of this subsection is to state that emission-related installation instructions from the certifying manufacturer must be adhered to, as stated in the California regulations.

In general, the proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy

additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§ 1054.30 Submission of information.

§1054.30 (a) The purpose of this subsection is to indicate the various requirements to record data or other information, as required in Title 13, CCR.

§1054.30 (b) The purpose of this subsection is to indicate that the information submitted by a certifying manufacturer is truthful and complete.

§1054.30 (c) The purpose of this subsection is to indicate where reports and requests are to be sent for approval.

§1054.30 (d) The purpose of this subsection is to state that any written information that is sent or received from another company is deemed to be part of the submitted records.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart B – Emission Standards and Related Requirements

The purpose of Subpart B is to specify the applicable emission standards and to indicate other requirements concerning those emission standards.

§1054.101 What emission standards and requirements must my engines meet?

§1054.101 (a) The purpose of this subsection is to indicate that all small off-road engines and equipment must meet the standards required by Title 13 and §1054.115. In addition, the requirements to meet the Blue Sky standards are included.

§1054.101 (b) The purpose of this subsection is to state where to find the evaporative requirements for California in Title 13, CCR.

§1054.101 (c) The purpose of this subsection is to state the requirements for wintertime engines.

§1054.101 (f) The purpose of this subsection is to state where to find the interim provisions.

In general, the proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.103 What exhaust emission standards must my handheld engines meet?

§1054.103 (a) The purpose of this subsection is to state that the exhaust emissions from engines with a displacement of less than or equal to eighty cubic centimeters must not exceed the standards as stated in Title 13, CCR.

§1054.103 (b) The purpose of this subsection is to state that emission credits from engines with a displacement of less than or equal to eighty cubic centimeters can be generated under the requirements laid out in Title 13, CCR.

§1054.103 (c) The purpose of this subsection is to state that the exhaust emission standards for engines with a displacement of less than or equal to eighty cubic centimeters apply for engines using the fuel type on which it is designated to operate.

§1054.103 (d) The purpose of this subsection is to state that engines with a displacement of less than or equal to eighty cubic centimeters must meet the exhaust emission standards for the entire useful life of the engine.

§1054.103 (e) The purpose of this subsection is to refer to Title 13, CCR, for emission standards for engines with a displacement of less than or equal to eighty cubic centimeters are set for all testing results.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.105 What exhaust emission standards must my nonhandheld engines meet?

§1054.105 (a) The purpose of this subsection is state that exhaust emissions for engines with a displacement of greater than eighty cubic centimeters may not exceed the emission standards using test procedures described in Subpart F.

§1054.105 (b) The purpose of this subsection is state that emission credits for engines with a displacement of greater than eighty cubic centimeters can be generated under the requirements laid out in Title 13, CCR.

§1054.105 (c) The purpose of this subsection is state that the exhaust emission standards apply for engines for engines with a displacement of greater than eighty cubic centimeters using the fuel type on which it is designated to operate.

§1054.105 (d) The purpose of this subsection is to state that engines with a displacement of greater than eighty cubic centimeters must meet the exhaust emission standards for the entire useful life of the engine.

§1054.105 (e) The purpose of this subsection is to refer to Title 13, CCR, for emission standards for engines with a displacement of greater than eighty cubic centimeters are set for all testing results.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.107 What is the useful life period for meeting exhaust emission standards?

§1054.107 The purpose of this section is to describe how an engine family's useful life period is defined.

§1054.107 (a) The purpose of this subsection is to specifically determine the useful life period of an engine.

§1054.107 (a) (1) The purpose of this subsection is to refer to the useful life period as laid out in Title 13, CCR.

§1054.107 (b) The purpose of this subsection is to remind manufacturers to make keep any supporting information available in case ARB requests the information.

§1054.107 (b) (1-4) The purpose of the subsections are to provide a list of the type of information that would be acceptable to use as support for the choice of useful life period.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional

requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.110 What evaporative emission standards must my handheld equipment meet?

§1054.110 The purpose of this section is to refer manufacturers to Title 13, CCR, for the evaporative emissions requirements and to inform manufacturers that the equipment with an engine displacement of less than or equal to eighty cubic centimeters must meet the evaporative emission requirements for the useful life of the equipment.

The proposed amendments to this section are necessary to maintain the stringency of California's existing SORE evaporative emission standards and associated test procedures.

§1054.112 What evaporative emission standards must my nonhandheld equipment meet?

§1054.112 The purpose of this section is to refer manufacturers to Title 13, CCR, for the evaporative emissions requirements and to inform manufacturers that the equipment with an engine displacement of greater than eighty cubic centimeters must meet the evaporative emission requirements for the useful life of the equipment.

The proposed amendments to this section are necessary to maintain the stringency of California's existing SORE evaporative emission standards and associated test procedures.

§1054.115 What other requirements apply?

§1054.115 The purpose of this section is to inform manufacturers of other requirements that apply to the exhaust emission standards.

§1054.115 (a) The purpose of this subsection is to inform manufacturers that crankcase emissions will need to be controlled as they are considered to be exhaust emissions.

§1054.115 (b) The purpose of this subsection is to inform manufacturers that engines that have adjustable parameters must meet the exhaust emission standards in any of the adjustable positions of the engine.

§1054.115 (c) The purpose of this subsection is to inform manufacturers of how to make adjustments for the higher altitudes.

§1054.115 (d) The purpose of this subsection is to remind manufacturers that the engines may not be designed in a manner that could cause harm to the operator of the equipment.

§1054.115 (e) The purpose of this subsection is remind manufacturers that any usage of a defeat device is prohibited.

§1054.115 (e) (1)-(3) The purpose of these subsections is to specify situations where this section does not apply.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.120 What emission-related warranty requirements apply to me?

§1054.120 The purpose of this section is to state the emission-related warranty requirements can be found in Title 13, CCR.

§1054.120 (a) The purpose of this subsection is to specify that the warranty requirements include coverage of the new engine and all parts of its emission control systems.

§1054.120 (a) (1)-(2) The purpose of these subsections is to protect the ultimate purchaser from obtaining a piece of equipment that is defective.

§1054.120 (b) The purpose of this subsection is to establish conditions under which the warranty must be valid.

§1054.120 (b) (1) The purpose of this subsection is to establish that the warranty period must be at least two years.

§1054.120 (c) The purpose of this subsection is to specify that the components that require coverage can be found in Title 13, CCR, and to explain that the components are to be covered by the certifying manufacturer whether or not components are made by them or not.

§1054.120 (e) The purpose of this subsection is to set the requirements of what needs to be in the owners' manual.

§1054.120 (f) The purpose of this subsection is to require the manufacturer to meet the minimum conditions to make sure that the owners will be served promptly when obtaining warranty repairs.

§1054.120 (f) (1-3) The purpose of these subsections is to list what is necessary to meet the warranty requirements.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.125 What maintenance instructions must I give to buyers?

§1054.125 The purpose of this section is to inform the manufacturer of what maintenance instructions must be given to buyers of the equipment so that they can properly maintain the engine including the emission control system.

§1054.125 (a) The purpose of this subsection is to explain what critical emission-related maintenance is.

§1054.125 (a) (1) The purpose of this subsection is to explain that critical emission-related maintenance can be demonstrated by showing any of the following conditions.

§1054.125 (a) (1) (i)-(iv) The purpose of these subsections are to present the conditions of what is acceptable to be considered critical emission-related maintenance

§1054.125 (a) (2) The purpose of this subsection is to give permission to clean or change air filters or change spark plugs at least frequent intervals during the service accumulation. Because these things would be done to equipment during normal usage, it is allowed for the service accumulation.

§1054.125 (a) (3) The purpose of this subsection is to limit what is done during the service accumulation, because these things would not typically be done during normal usage of the equipment.

§1054.125 (a) (4) The purpose of this subsection is to allow for shorter maintenance intervals during the service accumulation if the manufacturer provides supporting evidence that the maintenance may typically be done during normal usage of the equipment.

§1054.125 (b) The purpose of this subsection is to give permission to the manufacturer to recommend additional maintenance as long as the additional maintenance is not required for warranty claims.

§1054.125 (c) The purpose of this subsection is to give permission to the manufacturer to specify more frequent maintenance to address problems related to special situations that may include atypical engine operation.

§1054.125 (d) The purpose of this subsection is to give permission to the manufacturer to allow for noncritical emission-related maintenance. The manufacturer must state in the owner's manual that these steps are not necessary to keep the emission-related warranty valid.

§1054.125 (e) The purpose of this subsection is to give permission to the manufacturer to perform maintenance or inspections to anything that is not emission related during the service accumulation.

§1054.125 (f) The purpose of this subsection is to require the manufacturers to state clearly that a repair shop or person of the owner's choosing may maintain, replace or repair emission-related control devices and systems. This is to keep manufacturers from requiring that owners use the manufacturer's dealers or service establishments.

§1054.125 (f) (1)-(2) The purpose of these subsections is to allow for exceptions to the rule set in this section 1054.125(f).

§1054.125 (g) The purpose of this subsection is to require the manufacturer to pay for certain scheduled maintenance.

§1054.125 (g) (1)-(3) The purpose of these subsections is to state the conditions where the manufacturer would be required to pay for scheduled maintenance.

§1054.125 (h) The purpose of this subsection is to require that the manufacturer explain the owner's responsibility for proper maintenance in the owners' manual.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.130 What installation instructions must I give to equipment manufacturers?

§1054.130 (a) The purpose of this subsection is to require manufacturers to give proper installation instructions to anyone to whom they sell the engine for the purpose of

installing the engine on a piece of equipment. This is necessary to ensure that the engine is installed in its certified configuration.

§1054.130 (b) The purpose of this subsection is to ensure the instructions have the proper information.

§1054.130 (b) (1)-(7) The purpose of these subsections is to list the information that is needed in the instructions mentioned in this subsection 154.130(b).

§1054.130 (c) The purpose of this subsection is to exempt engine manufacturers from the requirement of having installation instructions if they install their engine in their own equipment.

§1054.130 (d) The purpose of this subsection is to specify in which format the instructions must be available.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.135 How must I label and identify the engines I produce?

§1054.135 The purpose of this section is to specify that the labeling requirements can be found in Title 13, CCR.

The proposed amendments to this section are necessary to maintain the stringency of California's existing SORE evaporative emission standards and associated test procedures.

§1054.140 What is my engine's maximum engine power and displacement?

§1054.140 The purpose of this section is to specify how to determine the engine's maximum engine power and displacement.

§1054.140 (a) The purpose of this subsection is to specify how to determine the engine's maximum power.

§1054.140 (b) The purpose of this subsection is to specify how to determine the engine's displacement.

§1054.140 (c) The purpose of this subsection is to explain the requirements of how to handle the nominal power curves and intended swept volumes of the production engines, especially if they are not representative.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.145 Are there interim provisions that apply only for a limited time?

§1054.145 The purpose of this section is to temporarily allow for usage of current procedures.

§1054.145 (j) The purpose of this subsection is to give manufacturers the option to phase in the new procedures over the next two model years if they are not prepared to change over immediately. Most manufacturers should be prepared to switch over to the new procedures, especially if they also plan to certify their engines with U.S. EPA.

Subpart C -- Certifying Emission Families

The purpose of Subpart C is to provide all of the requirements necessary for certifying SORE.

§1054.201 What are the general requirements for obtaining a certificate of conformity?

§1054.201 The purpose of this section is to establish that the engines must meet the standards set in Title 13, CCR, if the manufacturer wants to certify their engine for sale in California. In addition, the following subsections specify other conditions that need to be met for certification.

§1054.201 (a) The purpose of this subsection is to indicate that each engine family must have its own application for certification.

§1054.201 (b) The purpose of this subsection is to remind manufacturers that all of the information contained in the application must be true and complete.

§1054.201 (c) The purpose of this subsection is to give ARB the option to request less information as long as the manufacturer keeps the supporting information available when necessary.

§1054.201 (e) The purpose of this subsection is to require an authorized representative of the manufacturing company sign the application so that they are responsible for the authenticity of all of the information in application.

§1054.201 (f) The purpose of this subsection is to inform the manufacturer of how the application will be processed.

§1054.201 (g) The purpose of this subsection is to inform the manufacturer that ARB may require additional testing at a different testing facility.

§1054.201 (i) The purpose of this subsection is to inform the manufacturer that they need to submit a letter of intent.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.205 What must I include in my application?

§1054.205 The purpose of this section is to specify information that the manufacturer must include in their certification application. The purpose of each subsection is to make sure that the manufacturer understands why they chose what they did. It also ensures that ARB staff can understand each item requested so that the certification process can be completed in a timely manner.

§1054.205 (a) The purpose of this subsection is to specify that manufacturers are required to send separate applications for each engine family and separate applications for exhaust emissions and evaporative emissions.

§1054.205 (b) The purpose of this subsection is to specify that manufacturers must include an explanation of how the emission control systems operate.

§1054.205 (d) The purpose of this subsection is to ensure that manufacturers understand why they are testing specific components and to explain to ARB how those components are pertinent and others are not.

§1054.205 (e) The purpose of this subsection is to ensure that manufacturers understand the use of the test equipment and procedures.

§1054.205 (f) The purpose of this subsection is to specify that the manufacturer need to describe how the engine operates.

§1054.205 (g) The purpose of this subsection is to specifies that the manufacturer needs to provide the test fuel specifications.

§1054.205 (h) The purpose of this subsection is to ensure that the manufacturer provides an adequate useful life of the engine.

§1054.205 (i) The purpose of this subsection is to ensure that the manufacturer provides an accurate description of what is covered by the warranty and that the final purchaser is protected by the warranty.

§1054.205 (j) The purpose of this subsection is to ensure that the engine installer receives the proper information to install the engine properly.

§1054.205 (k) The purpose of this subsection is to ensure that the manufacturer is meeting all of the emission label requirements.

§1054.205 (l) The purpose of this subsection is to ensure that the manufacturer provides the correct emission standard or FEL.

§1054.205 (m) The purpose of this subsection is to ensure that the manufacturer provides an accurate deterioration factor.

§1054.205 (n) The purpose of this subsection is to ensure that the stated emission-data engine is operated as described in the application of the manufacturer. This is included to avoid the use of a different engine in the emission testing.

§1054.205 (o) The purpose of this subsection is to advise the manufacturer of how the emission data is to be presented, so that ARB staff can review the data in a more efficient manner.

§1054.205 (o) (1) The purpose of this subsection is to state the format in which the emission data is expected to be submitted.

§1054.205 (o) (2) The purpose of this subsection is to inform the manufacturer of the possibility that new emission data may not need to be submitted.

§1054.205 (p) The purpose of this subsection is to advise the manufacturer of the manner that the test results must be reported.

§1054.205 (p) (1) The purpose of this subsection is to advise the manufacturer of the requirement of reporting all test results of all substances that have emission standards.

§1054.205 (p) (2) The purpose of this subsection is to advise that measurements of other exhaust emission components are also required to be reported.

§1054.205 (q) The purpose of this subsection is to advise the manufacturer that all adjustable operating parameters need to be described so that ARB staff would be able to repeat the test results.

§1054.205 (q) (1)-(5) The purpose of these subsections is to list the operating parameters that are expected to be reported.

§1054.205 (r) The purpose of this subsection is to allow engine manufacturers to use altitude kits for high altitude applications.

§1054.205 (t) The purpose of this subsection is to allow engine manufacturers to limit the certification of certain engine families to specific uses.

§1054.205 (u) The purpose of this subsection is to require manufacturers to state that their engines unconditionally comply with all requirements in this part, any referenced parts, and Title 13, CCR.

§1054.205 (v) The purpose of this subsection is to require the manufacturer to submit good-faith estimates of California –directed production volumes.

§1054.205 (x) The purpose of this subsection is to require that manufacturers submit all information requested in other Subparts.

§1054.205 (y) The purpose of this subsection is to require that manufacturers include all applicable information.

§1054.205 (z) The purpose of this subsection is to require the manufacturer name an agent for services in the United States. This will ensure that the manufacturer has an agent for services in the United States and not require shipment to another country for services.

In general, the proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.220 How do I amend the maintenance instructions in my application?

§1054.220 The purpose of this section is to inform the manufacturer of how they can amend an application if they so desire.

§1054.220 (a)-(c) The purpose of these subsections is to inform the manufacturer of how to amend their application for different reasons.

§1054.225 How do I amend my application for certification to include new or modified engines or fuel systems or change an FEL?

§1054.225 The purpose of this section is to inform the manufacturer of how they can amend an application to include a change in new or modified engines or fuel systems.

§1054.225 (a) (1-2) The purpose of these subsections is to list reasons why an application may need to be amended.

§1054.225 (b) (1-3) The purpose of these subsections is to list what needs to be sent to ARB to amend an application.

§1054.225 (c) The purpose of this subsection is to allow ARB to request more test data or engineering evaluation.

§1054.225 (d) The purpose of this subsection is to allow ARB to determine if the existing Executive Order covers the new configuration of the engine or equipment.

§1054.225 (e) The purpose of this subsection is to allow manufacturers to begin producing engines after submitting an application with the understanding that if the engine does not meet requirements, then the manufacturer will have to cease production immediately.

§1054.230 How do I select emission families?

§1054.230 (a)-(g) The purpose of these subsections is to guide the manufacturer as to how they are to divide their product line into different engine families.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.235 What exhaust emission testing must I perform for my application for a certificate of conformity?

§1054.235 The purpose of this section is to inform the certifying manufacturer of the exhaust emission testing they must perform to show compliance with the emission standards.

§1054.235 (a) The purpose of this subsection is to inform the manufacturer of the required configuration of the engine for exhaust emission testing.

§1054.235 (b) The purpose of this subsection is to inform the manufacturer of what procedure and equipment to use for exhaust emission tests. This subsection also informs the manufacturer of the proper process of testing dual-fuel engines and flexible fuel engines.

§1054.235 (c) The purpose of this subsection is to inform the manufacturer that ARB may measure emissions from any engine in the engine family. This ensures that none of the engines within the engine family are far out of range of the intended emission standard or FEL.

§1054.235 (c) (1) The purpose of this subsection is to inform the manufacturer where the testing may be done and of the requirements of the test engine. This ensures that the engine is tested in a representative configuration.

§1054.235 (c) (2) The purpose of this subsection is to inform the manufacturer that if ARB does the testing that the results are considered to be an official test result.

§1054.235 (c) (3) The purpose of this subsection is to ensure that the whole range of the engine is tested.

§1054.235 (c) (4) The purpose of this subsection is to determine production variability.

§1054.235 (d) The purpose of this subsection is to inform the manufacturer about the requirements for carryover engines.

§1054.235 (d) (1)-(3) The purpose of these subsections is to list the requirements for carryover engines.

§1054.235 (e) The purpose of this subsection is to give ARB the option of having the manufacturer tests different engines or configurations if the submitted test results are not conclusive or appear not to be conclusive.

§1054.235 (f) The purpose of this subsection is to ensure that any alternative test procedures are equivalent to given test procedures.

§1054.235 (g) The purpose of this subsection is to inform manufacturers of the requirement of measuring CO_2 and CH_4 and N_2O when depending on a NOx aftertreatment. These pollutants may be of importance and having this information would be helpful in understanding their significance.

§1054.235 (g) (1)-(3) The purpose of these subsections is to list the values of these pollutants to the proper number of significant figures.

§1054.235 (h) The purpose of this subsection is to inform manufacturers of the requirement to include a justification for using auxiliary fans.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.240 How do I demonstrate that my emission family complies with exhaust emission standards?

§1054.240 (a) The purpose of this subsection is to inform the manufacturer of the requirements of test results showing deteriorated emission levels at or below the standards or FEL.

§1054.240 (b) The purpose of this subsection is remind the manufacturer of the conditions for which an engine family does not comply with the applicable emission standard.

§1054.240 (c) The purpose of this subsection is to inform the manufacturer of the method of determining a deterioration factor.

§1054.240 (d) The purpose of this subsection is to inform the manufacturer how to make adjustments to low-hour test points using the deterioration factor.

§1054.240 (e) The purpose of this subsection is to inform the manufacturer of engine families with a useful life of less than 300 hours how to apply the deterioration factors to engines other than the original emission-data engine.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.245 How do I determine deterioration factors from exhaust durability testing?

§1054.245 (a) The purpose of this subsection is to give small-volume engine manufacturers a lower cost option for determining deterioration factors.

§1054.245 (b) The purpose of this subsection is to provide the assigned deterioration values for engines with a displacement of greater than eighty cubic centimeters.

§1054.245 (c) The purpose of this subsection is to provide the assigned deterioration values for engines with a displacement less than or equal to eighty cubic centimeters.

§1054.245 (d) The purpose of this subsection is to provide the formula for the deterioration factors for engines with aftertreatment.

§1054.245 (e) (1) The purpose of this subsection is provide direction on choosing a deterioration factor and where the deterioration factor may be used.

§1054.245 (e) (2) The purpose of this subsection is to describe how a deterioration factor is determined.

§1054.245 (e) (2) (i)-(ix) The purpose of these subsections is to list criteria that the manufacturer needs in order to obtain a deterioration factor that is not on the lists mentioned above.

§1054.245 (e) (3) The purpose of this subsection is to inform the manufacturer of the conditions where the deterioration factor may be rejected.

§1054.245 (e) (4) The purpose of this subsection is to give the option to use the calculated deterioration factors for other engine families if a justification is submitted beforehand. This reduces the work for manufacturers, as long as they can show that the engine families are similar enough.

§1054.245 (e) (5) The purpose of this subsection is to inform the manufacturer that new deterioration factors are not necessary for running changes.

The proposed amendments to this section are necessary to maintain the stringency of California's existing SORE exhaust emission standards and associated test procedures with respect to the determination of the applicable deterioration factors.

§1054.250 What records must I keep and what reports must I send to EPA?

§1054.250 (a) The purpose of this subsection is to give the manufacturer the ARB's contact information and inform them of the requirement to submit information about the engines produced during the model year.

§1054.250 (a) (1)-(2) The purpose of these subsections is to request that manufacturers state total production volume for each engine family and total production volume produced after completing reports.

§1054.250 (b) The purpose of this subsection is to request that manufacturers maintain some records.

§1054.250 (b) (1)-(5) The purpose of these subsections is to list items the manufacturer should maintain.

§1054.250 (c) The purpose of this subsection is to require that manufacturers keep data from routine emission tests.

§1054.250 (d) The purpose of this subsection is inform the manufacturers of the requirement to keep records readily available as long as they may be requested.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.255 What decisions may EPA make regarding my certificate of conformity?

§1054.255 (a) The purpose of this subsection is to inform manufacturers of the conditions for obtaining an Executive Order.

§1054.255 (b) The purpose of this subsection is to inform manufacturers of the conditions for which their application may be denied.

§1054.255 (c) The purpose of this subsection is to inform manufacturers of conditions for which their application may be denied, suspended or revoked.

§1054.255 (c) (1)-(7) The purpose of these subsections is list conditions for which applications may be denied, suspended or revoked.

§1054.255 (d) The purpose of this subsection is to inform manufacturers of conditions or which the Executive Order may be voided.

§1054.255 (e) The purpose of this subsection is to give the conditions applicable to carryover engines for which these engines could have a reduced emission testing rate.

§1054.255 (f) The purpose of this subsection to inform the manufacturer that ARB may request engines for testing or inspections.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart D – Production-Line Testing

The purpose of Subpart D is to state that the California production-line testing requirements can be found in Section 2407 in Title 13, CCR.

The proposed amendments to this section are necessary to maintain the stringency of California's existing SORE exhaust emission standards and associated test procedures with respect to conducting production-line testing.

Subpart E – In-use Testing

The purpose of Subpart E is to provide the requirements for conducting in-use testing.

§1054.401 General provisions

The purpose of this section is to give ARB the option to perform in-use testing of any engine or equipment.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart F – Test Procedures

The purpose of Subpart F is to provide the general requirements for performing emission testing in accordance with the test procedures detailed in Part 1065.

§1054.501 How do I run a valid emission test?

§1054.501 (a) The purpose of this subsection is to inform manufacturers that they, and anyone that does testing for them, must meet the requirements of this section.

§1054.501 (b) The purpose of this subsection is to require the use of 40 CFR Part 1065 for exhaust emission tests.

§1054.501 (b) (1) The purpose of this subsection is to inform the manufacturers of the constituents subject to emission standards.

§1054.501 (b) (2) (i)-(iv) The purpose of these subsections is to remind the manufacturers to use fuels and lubricants specified in 40 CFR Part 1065, as revised by the California amendments in order to maintain the stringency of the existing SORE emission standards and associated test procedures.

§1054.501 (b) (3) (i)-(ii) The purpose of these subsections is to remind manufacturers that the ambient conditions must be within a specific range.

§1054.501 (b) (4) (i)-(ii) The purpose of these subsections is to inform manufacturers of the conditions where emission levels are considered stable without measurement.

§1054.501 (b) (5) The purpose of this subsection is to inform manufacturers that governors need to be installed for testing if one is on the production engine.

§1054.501 (b) (6) The purpose of this subsection is to inform manufacturers that the fuel system for the test engine should be like that of the production engine.

§1054.501 (b) (7) The purpose of this subsection is to inform manufacturers that the carbon mass fraction of the fuel needs to be determined based on measured fuel properties. This is to ensure that value is a real value rather than an estimated one.

§1054.501 (b) (8) The purpose of this subsection is to inform manufacturers of the proper procedures of determining service accumulation and engine stabilization.

§1054.501 (b) (9) The purpose of this subsection is to inform manufacturers on how to prepare an engine for a pre-test.

§1054.501 (b) (10) The purpose of this subsection is to inform manufacturers of the procedures used for an analyzer pre-test.

§1054.501 (b) (11) The purpose of this subsection is to inform manufacturers that they may check the system flow rates and pressures and reset, if needed.

§1054.501 (c) The purpose of this subsection is to inform manufacturers of when a special or alternate procedure is allowed.

§1054.501 (c) (1) The purpose of these subsections is to inform manufacturers of the provisions that apply for using special or alternative test procedures.

§1054.501 (d) The purpose of this subsection is to inform the manufacturers of the conditions in which a wintertime engine needs to be tested.

In general, the proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§ 1054.505 How do I test engines?

§1054.505 (a) The purpose of this subsection is to describe to manufacturers how to test engines under steady-state conditions.

§1054.505 (a) (1) The purpose of this subsection is to describe what to do for discrete-mode testing.

§1054.505 (a) (1) (i)-(ii) The purpose of these subsections is to list the acceptable methods for confirming torque values for engines with a displacement of greater or equal to eighty cubic centimeters.

§1054.505 (a) (2) The purpose of this subsection is to describe how to conduct ramped-modal testing.

§1054.505 (b) The purpose of this subsection is to inform manufacturers of how all engines must be dynamometer tested in order to demonstrate compliance with the specified exhaust emission stands.

§1054.505 (b) (1) The purpose of this subsection is to inform manufacturers of the requirement for engines with a displacement of less than eighty cubic centimeters to use a two-mode duty cycle.

§1054.505 (b) (1) (i)-(iii) The purpose of these subsections is to list how to establish an engine's rated speed.

§1054.505 (b) (2) The purpose of this subsection is to inform manufacturers of the requirement for engines with a displacement of greater than or equal to eighty cubic centimeters to use a six-mode duty cycle or the corresponding ramped-modal cycle.

§1054.505 (c) The purpose of this subsection is to inform manufacturers of the conditions for how to operate the engine with a displacement of greater than or equal to eighty cubic centimeters during idle mode.

§1054.505 (c) (1)-(3) The purpose of these subsections is to list the parameters at which the engine must operate during the idle mode.

§1054.505 (d) The purpose of this subsection is to inform manufacturers of engines with a displacement of greater than or equal to eighty cubic centimeters how to operate the engine during the full-load operation.

§1054.505 (d) (1)-(4) The purpose of these subsections is to list parameters for engines while under full-load operation.

§1054.505 (e) The purpose of this subsection is to refer to 40 CFR Part 1065 for tolerances and calculations.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.520 What testing must I perform to establish deterioration factors?

§1054.520 The purpose of this subsection is to refer to other sections for a description of the required methods for testing to establish deterioration factors for an engine family.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart G – Special Compliance Provisions

The purpose of Subpart G is to provide the general requirements for performing certain compliance actions, including California-specific labeling requirements.

§1054.601 What compliance provisions apply?

§1054.601 (a) The purpose of this subsection is to inform affected parties that everyone must observe provisions of this Part and California's Health and Safety Code.

§1054.601 (b) The purpose of this subsection is to remind engine manufacturers that they are prohibited from stockpiling engines.

§1054.601 (c) The purpose of this subsection is to inform manufacturers that take possession of engines for purposes of recovering components of the provisions that apply to them.

§1054.601 (c) (1) The purpose of this subsection is to refer back to Title 13, CCR, for labeling requirements. This means that there are not any changes to the existing California labeling requirements in order to maintain the stringency of the existing California emission standards and associated test procedures.

§1054.601 (c) (2) The purpose of this subsection is to state that the engine mentioned in this section may not be resold.

§1054.601 (c) (3) The purpose of this subsection is to inform the manufacturer of record collecting requirements for these engines.

In general, the proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.635 What special provisions apply for small-volume engine and equipment manufacturers?

§1054.635 The purpose of this section is to allow for the use of assigned deterioration factors for small-volume engine manufacturers.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.640 What special provisions apply to branded engines?

§1054.640 The purpose of this section is to state what provisions apply to branded engines.

§1054.640 (a)-(c) The purpose of these subsections is to state the requirements for branded engines.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable.

Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.645 What special provisions apply for converting an engine to use an alternate fuel?

§1054.645 The purpose of this section is to keep engines from being modified beyond the conditions for which they were certified, and to inform anyone who does such modifications that they must certify the new configuration under a new Executive Order.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.650 What special provisions apply for adding or changing governors?

§1054.650 The purpose of this section is to state the requirements for adding or changing governors for exhaust emission testing.

§1054.650 (a) The purpose of this subsection is to state the requirements for in-use duty cycles.

§1054.650 (a) (1)-(2) The purpose of these subsections is to state the conditions for which the representative testing is not required.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.655 What special provisions apply for installing and removing altitude kits?

§1054.655 The purpose of this section is to provide an allowance to use altitude kits when necessary.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.660 What are the provisions for exempting emergency rescue equipment?

§1054.660 The purpose of this section is to provide exemptions for emergency equipment used by fire and police departments and other emergency entities.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart H – Averaging, Banking and Trading for Certification

The purpose of Subpart H is to provide the general requirements for the emission averaging, banking, and trading provisions.

§1054.701 General Provisions

§1054.701 The purpose of this section is to inform stakeholders to refer to Title 13, CCR, for the provisions for certification emission credit program.

The proposed amendments to this section are necessary to maintain the stringency of California's existing SORE emission standards and associated test procedures with respect to using averaging, banking, and trading provisions.

Subpart I – Definitions and Other Reference Information

The purpose of Subpart I is to provide the general information related to definitions and supporting information.

§1054.801 What definitions apply to this part?

§1054.801 The purpose of this section is to provide definitions for words in this document to ensure that the meaning of the words align with U.S. EPA, and that there is a clear understanding of what is required.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.805 What symbols, acronyms, and abbreviations does this part use?

§1054.805 The purpose of this section is to identify the meanings of all of the symbols, acronyms, and abbreviations in order to avoid any misunderstandings in conducting the required test procedures and performing the certification process. This is also a good source of reference while reading the document.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.815 What provisions apply to confidential information?

§1054.815 The purpose of this section is to set guidelines for manufacturers as to how to identify confidential information.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.820 How do I request a hearing?

§1054.820 The purpose of this section is to inform manufacturers on how to request a hearing.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional

requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.821 Right of entry and access

§1054.821 The purpose of this section is to let manufacturers know of their responsibilities in allowing the ARB Enforcement Officer in to their facilities.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1054.825 What reporting and recordkeeping requirements apply under this part?

§1054.825 The purpose of this section is to inform the manufacturers of their reporting and record keeping requirements.

The proposed amendments to this section are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Appendix II to Part 1054 – Duty Cycles for Laboratory Testing

The proposed amendments to this Appendix are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

California Exhaust Emission Standards and Test Procedures For New 2013 and Later Small Off-Road Engines; Engine-Testing Procedures (Part 1065).

The proposed Part 1065 test procedures prescribe scaled specifications for test equipment and measurement instruments by parameters such as engine power, engine speed and the emission standards to which an engine must comply. Manufacturers will be able to use these specifications to determine what range of engines and emission standards may be tested.

The basis of the proposed Part 1065 is the federal Part 1065, as last amended June 28, 2011, which is a combination of U.S. EPA's existing test procedures for testing various categories of nonroad engines and heavy-duty on-highway engines.

Part 1065 is organized by Subparts as shown below:

Subpart A	General provisions; global information on applicability, alternate procedures, units of measure, etc.
Subpart B	Equipment specifications; required hardware for testing
Subpart C	Measurement instruments
Subpart D	Calibration and verifications; for measurement systems
Subpart E	Engine selection, preparation, and maintenance
Subpart F	Test protocols; step-by-step sequences for laboratory testing and test validation
Subpart G	Calculations and required information
Subpart H	Fuels, fluids, and analytical gases
Subpart I	Oxygenated fuels; special test procedures
Subpart J	Field testing and portable emissions measurement systems
Subpart K	Definitions, references, and symbols

Subpart A

The purpose of Subpart A is to identify the applicability of Part 1065 and describe how procedures other than those in Part 1065 may be used to comply with Title 13, CCR regulations for small off-road engines.

§1065.1 The purpose of this section is to explain that small off-road engines remain subject to Title 13, CCR, Chapter 9, rather than U.S. EPA's exhaust emission requirements.

The proposed amendments to this Subpart are necessary to maintain the stringency of California's existing SORE emission standards and associated test procedures.

Subpart B

The purpose of Subpart B is to describe engine and dynamometer related systems. Many of these specifications are scaled to an engine's size, speed, torque, exhaust flow rate, etc. Subpart B also describes sampling dilution systems. These include specifications for the allowable components, materials, pressures, and temperatures.

§1065.101 The purpose of this section is to include a diagram illustrating all the available equipment for measuring emissions.

§1065.122 The purpose of this section is to specify that test cells shall be maintained at ambient temperature levels as defined in section 1065.125 (c). This section provides for engine cooling fans to be used to simulate in-use conditions. Staff proposes keeping ARB's current test procedures language in sections 90.118(f) and 90.307 which require manufacturers to justify to the satisfaction of the Executive Officer, in the application for certification, the need for and use of such fans. The manufacturer must also demonstrate that the supplemental cooling resulting from the use of the fans is representative of in-use engine operation. These proposed amendments are necessary in order to maintain the stringency of California's existing emission standards and associate test procedures.

In general, the proposed amendments to this Subpart are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart C

The purpose of Subpart C is to specify the requirements for the measurement instruments used for testing. These specifications apply to both laboratory and field testing. Subpart C recommends accuracy, repeatability, noise, and response time specifications for individual measurement instruments, and requires that overall measurement systems meet the calibrations and verifications in Subpart D.

The proposed amendments to this Subpart are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart D

The purpose of Subpart D is to specify accuracy, repeatability and other related parameters for the test measurement systems.

The proposed amendments to this Subpart are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart E

The purpose of Subpart E is to describe how to select, prepare, and maintain a test engine.

The proposed amendments to this Subpart are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart F

The purpose of Subpart F is to describe the step-by-step protocols for engine mapping, test cycle generation, test cycle validation, pre-test preconditioning, engine starting, emission sampling, and post-test validations.

The proposed amendments to this Subpart are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart G

The purpose of Subpart G is to address all the calculations required in Part 1065. Subpart G specifies emission calculations based on molar quantities for flow rates instead of volume or mass. This change eliminates the frequent confusion caused by using different reference points for standard pressure and standard temperature. Instead of declaring standard densities at standard pressure and standard temperature to convert volumetric concentration measurements to mass-based units, Subpart G declares molar masses for individual elements and compounds. Since these values are independent of all other parameters, they are known to be universally constant.

§1065.650 (i) The purpose of this subsection is to keep ARB's current test procedure language in section 90.404 (e). Specifically, for two-stroke engines, staff proposes that engine manufacturers continue to be allowed to determine PM emissions by using HC emissions as a surrogate for PM emissions because HC reductions would also correspond to reductions in two-stroke PM emissions. These proposed amendments are necessary in order to maintain the stringency of California's existing emission standards and associate test procedures.

In general, the proposed amendments to this Subpart are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart H

The purpose of Subpart H is to specify test fuels, lubricating oils and coolants, and analytical gases for testing. Subpart H also specifies that service accumulation fuels must be either a test fuel or a commercially available in-use fuel. This helps ensure that testing is representative of in-use engine operation. Staff is proposing amendments to keep certain provisions already specified in California's existing SORE test procedures in lieu of those specified in federal Part 1065.

§1065.701 The purpose of this section is to describe general requirements for test fuels. The proposed amendments to subsection 1065.701 (a) (2) are necessary in order to specify that the test fuel specifications will be consistent with the on-road motor vehicle E10 test fuel. The proposed amendments to subsection 1065.701 (a) (3) is necessary in order to allow use of the on-road motor vehicle E10 test fuel as an option for 2013 through 2018 model year engines. In addition, the proposed amendments to subsection 1065.701 (f) are necessary in order to specify that a service accumulation fuel can be either a test fuel or a commercially available in-use fuel.

§1065.703-740 The proposed amendments to these subsections are necessary in order to keep California's test fuel requirements aligned with the applicable on-road vehicle test fuel requirements.

In general, the proposed amendments to this Subpart are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart I

The purpose of this Subpart is to describe special procedures for measuring certain hydrocarbons whenever oxygenated fuels are used.

The proposed amendments to this Subpart are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart J

The purpose of Subpart J is to describe field testing and portable emissions measurement systems (PEMS).

The proposed amendments to this Subpart are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart K

The purpose of Subpart K is to list all the defined terms, identification of reference materials, and lists of acronyms and abbreviations used throughout Part 1065.

The proposed amendments to this Subpart are necessary to establish alignment with similar provisions in the federal regulations for small nonroad engines, as is applicable. Without such an alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

APPENDIX T

Summary & Rationale

Tier 4 Off-Road Compression-Ignition Engine Regulations

- Title 13, California Code of Regulations
- Test Procedures

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Summary and Rationale for Proposed Regulations

Off-Road Compression-Ignition Engines and Equipment

Rationale for staff's proposed amendments to Article 4, Chapter 9, Division 3, Title 13, California Code of Regulations (CCR)

§2421 Definitions

Some of the proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits. The other proposed amendments are necessary either to ensure the effectiveness of ARB programs for which U.S. EPA does not have an equivalent counterpart, or to properly reference incorporated documents.

(a)(3)	Staff proposes to clarify that the dates of applicability for the 2000 and Later Plus Limited Test Procedures are based on model years (and not calendar years).
(a)(4)(A)	In addition to creating a new subparagraph (A) under the existing incorporation provision of the Tier 4 test procedures, staff proposes to sunset the test procedures by renaming them as the "2008-2010 Test Procedures" and to append the date of amendment (place holder) reflecting the revisions proposed herein.
(a)(4)(B)	A new subparagraph (B) is proposed to incorporate the amended "2011 and Later Test Procedures" for Tier 4 engines.

(a)(15)(B)	To preserve the applicability of the existing "constant-speed engine" definition for pre-2011 Tier 4 engines, staff proposes to revise the subjugating test procedure reference to reflect the retired 2008-2010 Test Procedures.
(a)(15)(C)	A new subparagraph (C) is proposed making the revised "constant speed engine" definition applicable to 2011 and later Tier 4 engines.
(a)(19)	A new definition for "date of manufacture" is proposed to align with the analogous federal definition, and because the term is referenced in the labeling requirements of §2423(j)(1) for new replacement engines. All subsequent definitions are renumbered accordingly.
(a)(35)	References to the existing test procedures would be updated and supplemented to reflect the revised test procedures.
(a)(38)	A reference to §1039.801 of the Tier 4 test procedures is provided as a supplement to the existing definition of a "model year" to ensure alignment with federal provisions.

§ 2423 Exhaust Emission Standards and Test Procedures – Off-Road Compression Ignition Engines

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(b)(1)(B) The proposal would update existing test procedure references to reflect the revised test procedures.

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Table 1b The proposed amendments to the table include new ALT NOx+NMHC standards for engines 56 ≤ kW ≤ 560 as well as clarifications and revisions to the footnotes corresponding to the incorporation of the new standard. Footnote 8 is newly added to identify a compliance option not overtly illustrated by the table.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Table 1c Amendment to footnote 1 would update existing test procedure references to reflect the revised test procedures.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(b)(2)(B) The proposal would update existing test procedure references to reflect the revised test procedures.

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Table 2b-1 The proposed amendments to the table include new ALT NOx+NMHC and ALT 20% NOx+NMHC FEL caps for engines 56 ≤ kW < 75 corresponding to the incorporation of the new ALT NOx+NMHC standard in Table 1b. Additionally, the implementation periods for several existing FEL caps have been revised to correct clerical errors that unintentionally limited their applicability to one or two years whereas the original intention, as stated in the ARB staff report and U.S. EPA preamble for the original rulemakings, was clearly a period of four years. Other clarifications are proposed to the table to better illustrate optional compliance dates, and the footnotes have been revised to correspond to the incorporation of the new FEL caps and/or revisions to existing implementation dates.

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Table 2b-2 The proposed amendments to this table are similar to those identified for Table 2b-1 above, but applicable to engines 75 ≤ kW < 560. Additionally, footnote 9 is added to the table to clarify that the ALT 20% NOx FEL caps would still be available to manufacturers in 2014 for engines 130 ≤ kW < 560 even if a different certification strategy had been used from 2012-2013.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(b)(2)(C) The proposal would update existing test procedure references to reflect the revised test procedures.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(b)(3)(A) The proposal would update existing test procedure references to reflect the revised test procedures.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(b)(5)(B) The proposal would update existing test procedure references to reflect the revised test procedures.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(b)(6) The proposal would update existing test procedure references to reflect the revised test procedures.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(b)(9) The proposal would update existing test procedure references to reflect the revised test procedures.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(b)(12)(A) The proposal would update existing test procedure references to reflect the revised test procedures.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(c)(2)(B) The proposal would update existing test procedure references to reflect the revised test procedures.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(d) The proposal would update existing test procedure references to reflect the revised test procedures.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(d)(1)(C) The proposal would update existing test procedure references to reflect the revised test procedures.

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Table 6 The proposed amendments to the table correct a clerical error that would unintentionally require Tier 3 engines to be used as flexibility allowances for engines $19 \leq kW < 56$ even though ARB never required Tier 3 for this category. The amendment would substitute the more appropriate Tier 2 engine requirement in place. A new footnote 1 was appended to the table to clarify that flexibility allowances may still be certified to FELs, but that FELs less stringent than the applicable flexibility standards must be offset with emission credits. The original footnote 1 is renumbered to 2 and the original footnote 2 is deleted because it is no longer relevant with respect to the correction of the Tier 3 to Tier 2 clerical error explained above.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(d)(2)(B) The proposal would update existing test procedure references to reflect the revised test procedures.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(d)(3)(B) The proposal would update existing test procedure references to reflect the revised test procedures.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(d)(4) The proposed amendment clarifies that in some cases manufacturers would be required to use Tier 2 engines under the flexibility program instead of Tier 1 engines.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(d)(5)(A) The amendment would align with federal requirements by providing an option for manufacturers to eliminate the listing of the FEL on flexibility engine labels when the FEL is more stringent than the emission standard. Because flexibility engines cannot generate emission credits, listing an FEL that is more stringent than the standard is no longer necessary for enforcement or in-use compliance purposes.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without

such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(d)(5)(B) The proposal would require manufacturers to list their website on the emission control label instead of an employee's name and telephone number for contact purposes, because the website is likely to be a more permanent point of reference.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(d)(7)(A) The proposal would remove the requirement for a manufacturer to notify ARB of its intent to use flexibility allowances by January 1 of the first year that flexibility allowances will be used because requests for flexibility allowances may not occur until later in the year. The new requirement allows manufacturers to notify ARB at any time during the year so long as it precedes the usage of flexibility allowances.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(d)(7)(A)(2) The proposed requirement would require equipment manufacturers to provide ARB with the email address of a contact person who can answer questions regarding the manufacturers' intent to use flexibility allowances.

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(d)(7)(B) The proposed amendments to this section include clarifying refinements to the language pertaining to the production volume information that needs to be reported to ARB, and post-production confirmation that the engine manufacturers providing flexibility allowances have all been identified.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(d)(8) The proposal would update existing test procedure references to reflect the revised test procedures.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(d)(9) The proposal would update existing test procedure references to reflect the revised test procedures.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(e)(2) Staff proposes to require the inclusion of engine family name in the recordkeeping requirements for flexibility allowances to improve certification tracking and verification capabilities.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(f)(3) The proposal would update existing test procedure references to reflect the revised test procedures.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(h) The proposal would update existing test procedure references to reflect the revised test procedures.

Some of the proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits. The other proposed amendments are necessary to ensure the effectiveness of ARB programs for which U.S. EPA does not have an equivalent counterpart.

(j)(1)(D) The proposed amendments would align with proposed federal requirements by creating separate labeling specifications for new replacement engines dependent on whether or not the replacement engine was ever subject to emission standards. The label text is also revised for greater alignment with federal provisions, except that ARB would require "engine power," "reference engine family," and "date

of manufacture" to be displayed on the label to assist with the implementation and enforcement of ARB's various in-use off-road programs. U.S. EPA does not have equivalent in-use programs. Section-specific definitions are provided to define the terms "certified power" and "advertised power" as used in the labeling requirements.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(l)(1) The proposal would update existing test procedure references to reflect the revised test procedures.

The proposed amendment is necessary to establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(m) The proposed amendment creates a new paragraph (m) to align with the recently promulgated federal anti-stockpiling requirements incorporated in the 2011 and Later Test Procedures at §1068.103 and §1068.105.

§ 2424 Emission Control Labels – 1996 and Later Off-Road Compression-Ignition Engines

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(c)(2) The proposal fixes a referencing error that should have been updated during previous regulatory amendments to cite the "2000 and Later Plus Limited Test Procedures."

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(c)(3) The proposal would update existing test procedure references to reflect the revised test procedures.

The proposed amendment is necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(l) The proposed amendment creates a new paragraph (l) to align with federal provisions, as incorporated in §1068.101(b)(7) of the 2011 and Later Test Procedures, which allows dealers and authorized distributors to replace incorrect labels on engines and equipment prior to the sale of the engines and equipment to ultimate purchasers. The ARB requirement would also extend the provision to affixing supplemental replacement engine labels as required in 2423(j). The new paragraph also reinforces that removal of an emissions control label, unless permitted by regulation, is a violation of the regulations.

§ 2425 Defects Warranty Requirements for 1996 and Later Off-Road Compression-Ignition Engines.

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(a) The proposed amendments clarify that the revised defects warranty and reporting requirements in §1039.120 and §1039.125 would only apply to 2011 and Later Tier 4 engines.

§ 2425.1 Defect Investigation and Reporting Requirements.

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(a) The proposal would update existing test procedure references to reflect the revised test procedures.

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(c) The proposal would update existing test procedure references to reflect the revised test procedures.

§ 2426 Emission Control System Warranty Statement.

The proposed amendments are necessary to ensure that owners of Tier 4 engines are provided with warranty-related information. Without such information, owners might not be fully informed regarding their rights to have defective components replaced at no cost to them, which could result in improper engine maintenance and a corresponding increase in emissions.

(a) The proposed amendments would extend the requirement for manufacturers to include a copy of the California Emission Control Warranty Statement to all off-road compression-ignition engines. Tier 4 engines were unintentionally omitted during the previous amendment of the regulations. Additional refinements to the language on the Emission Control Warranty Statement are proposed to better reflect the inclusion of all types of off-road compression-ignition engines (not just heavy-duty engines).

(b) The proposed amendment to this paragraph (b) is similar to the amendment in (a) above such that manufacturers would be required to include a description of the obligations and warranty rights of the manufacturer and equipment for previously (and unintentionally) excluded Tier 4 engines.

§ 2427 Production Engine Testing, Selection, Evaluation, and Enforcement Action.

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(c)(1)(B) The proposal would update existing test procedure references to reflect the revised test procedures.

California Exhaust Emission Standards and Test Procedures for New 2008-2010 Tier 4 Off-Road Compression-Ignition Engines, Part I-C

Staff proposes to retire the existing "California Exhaust Emission Standards and Test Procedures for New 2008 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-C," applicable to land-based off-road compression ignition engines regulated under Title 13, CCR, Chapter 9, Article 4, by retitling to the "California Exhaust Emission Standards and Test Procedures for New 2008-2010 Tier 4 Off Road Compression Ignition Engines, Part I-C." The applicability of the current test procedures, as referenced in proposed §2421(a)(4)(A) of the California regulation, will then be limited to Tier 4 engines through the 2010 model year only.

In the following descriptions of the specific amendments being proposed, a complete alignment with a corresponding federal subsection is indicated by "(Alignment)." Instances of non-alignment with specific portions within a subsection being proposed for alignment are indicated by "(Non-alignment)."

PART 1039 – CONTROL OF EMISSIONS FROM NEW AND IN-USE OFF-ROAD COMPRESSION-IGNITION ENGINES

The proposed amendment is necessary to clarify the scope of applicability as belonging to California certified engines rather than federally certified engines.

Staff proposes to substitute the adjective "OFF-ROAD" in place of the federal adjective "NONROAD" in the title of this Part 1039 for better consistency with, and identification of, California requirements.

Subpart G – Special Compliance Provisions

The purpose of subpart G is to grant optional compliance flexibility provisions to address hardship and/or to ease the transition to lower standards. The provisions in this subpart are usually available for a limited time only.

§ 1039.625 What requirements apply under the program for equipment-manufacturer flexibility?

The proposed amendment is necessary to restore/establish alignment with a similar provision in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

(e)(3) The proposed amendment corrects a clerical error that would have unintentionally required Tier 3 engines to be used as flexibility allowances for engines 19 ≤ kW < 56 even though ARB never required Tier 3 for this category. The amendment changes the 37kW endpoint to a 56kW endpoint and, as a result, enables the appropriate use of Tier 2 engine for the power category. (Alignment)

PART 1068 – GENERAL COMPLIANCE PROVISIONS FOR OFF-ROAD PROGRAMS

The proposed amendment is necessary to clarify the scope of applicability as belonging to California certified engines rather than federally certified engines.

Staff proposes to substitute the adjective "OFF-ROAD" in place of the federal adjective "NONROAD" in the title of this Part 1068 for better consistency with, and identification of, California requirements.

Subpart B – Prohibited Actions and Related Requirements

The purpose of Subpart B is to clarify the intention of the regulations by identifying actions that are contrary to compliance and/or which would constitute violations subject to civil penalty.

§ 1068.101 What general actions does this regulation prohibit?

The proposed amendment is necessary to clarify the scope of applicability as belonging to California certified engines rather than federally certified engines.

(b)(3) The proposal replaces the adjective "nonroad" with the more appropriate adjective "off-road" for better consistency with, and identification of, California requirements.

PART 1039 – CONTROL OF EMISSIONS FROM NEW AND IN-USE OFF-ROAD COMPRESSION-IGNITION ENGINES

Proposed amendments to the incorporated provisions of the California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression Ignition Engines, Part I-D, applicable to land-based off-road compression-ignition engines regulated under Title 13, CCR, Chapter 9, Article 4.

In the following descriptions of the specific amendments being proposed, a complete alignment with a corresponding federal subsection is indicated by "(Alignment)." Instances of non-alignment with specific portions within a subsection being proposed for alignment are indicated by "(Non-alignment)."

Subpart A – Overview and Applicability

The purpose of Subpart A is to identify the types of engines and equipment subject to the regulations and to provide guidance on how best to navigate through the regulations to ensure full comprehension and compliance.

§1039.1 Does this part apply for my engines?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments to this section clarify that stationary engines, which are generally not subject to Part 1039, may still be required to comply with the emissions standards in Part 1039 if so required by the stationary engine regulations. (Alignment)

§1039.2 Who is responsible for compliance?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without

such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

This is a new section, consisting of text transferred from §1039.10 of the existing test procedures, intended to make more apparent that the certification requirements of the regulation are primarily applicable to engine manufacturers. (Alignment)

§1039.5 Which engines are excluded from this part's requirements?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments provide additional clarity regarding specific engine types that are not subject to Part 1039. (Alignment)

§1039.10 How is this part organized?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

This section remains unchanged except for the transfer of text to §1039.2 related to the identification of certification responsibilities. (Alignment)

§1039.15 Do any other regulation parts apply to me?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or

certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments clarify the use of Part 1065 of the Test Procedures for emission measurement purposes only and not for determining compliance with exhaust standards. (Alignment)

§1039.20 What requirements from this part apply to excluded stationary engines?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendment limits the requirement to place labels on stationary engines that would otherwise be subject to labeling provisions under other regulations. (Alignment)

§1039.30 Submission of information

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

This is a new section intended to summarize and simplify the identification of existing reporting and record keeping requirements that are spread throughout Parts 1039 and 1068. (Alignment)

Subpart B – Emission Standards and Related Requirements

The purpose of subpart B is to identify emission standards, implementation dates, warranty provisions, maintenance-related requirements, and labeling specifications.

§1039.102 What exhaust emission standards and phase-in allowances apply for my engines in model year 2014 and earlier?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments create a new alternate interim Tier 4 exhaust standard for combined oxides of nitrogen and hydrocarbon (ALT NOx + NMHC) that is more stringent than the sum of the separate ALT NOx and NMHC standards, but which can be met using banked emission credits. The proposed amendments also fix a clerical error in which the wrong power designation would have resulted in Tier 3 engines being required for equipment flexibility allowances in a power category for which Tier 3 engines were never required. The final proposed amendment does away with an unnecessary requirement to identify the PM standard on the emission label for non-FEL certified engines in the 37 - 56 kW power category. (Alignment)

§1039.104 Are there interim provisions that apply only for a limited time?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments correct clerical errors in Table 1 of §1039.104 that unintentionally limit the implementation period for using ALT FEL Caps to only one or two years whereas the intention, as stated in the previous staff report, was to provide a four year usage period. Additionally, the proposed amendments clarify that a manufacturer is free to certify an engine family to the new ALT NOx+NMHC standards even if the engine could satisfy just the ALT NOx FEL requirement. (Alignment)

§1039.115 What other requirements apply?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or

certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments clarifies that only engines subject to Part 1039 need to comply with the provisions in §1039.115, and limit the applicability period for controlling crankcase emissions to the engine's useful life. (Alignment)

§1039.120 What emission-related warranty requirements apply to me?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The amendments would clarify applicability of warranty provisions to regulated pollutants only and correct several grammatical errors. (Alignment)

§1039.125 What maintenance instructions must I give to buyers?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The amendments would extend the maintenance interval for several components, including particulate traps, to 4500 hours, and append crankcase vent filters to the list of components covered for 1500 hours. Additionally, the amendments provide additional flexibilities that would allow manufacturers to request shorter warranty periods provided a need for such can be demonstrated. (Alignment)

§ 1039.135 How must I label and identify the engines I produce?

Some of the proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra

cost without a corresponding increase in emission benefits. The other proposed amendments are necessary to ensure the effectiveness of ARB programs for which U.S. EPA does not have an equivalent counterpart.

The proposed amendments require the listing of PM standards on some lower power engines during the Tier 4 interim years and redirect the use of standardized terms and abbreviations to reference §1068.45 rather than SAE J1930. (Alignment)

The proposed amendments would also make mandatory the inclusion of the engine's date of manufacture on the emissions control label and clarifies that the visibility requirements in the regulation still apply. (Non-alignment)

Subpart C – Certifying Engine Families

The purpose of subpart C is to specify the requirements for certifying engine families and obtaining Executive Orders.

§1039.205 What must I include in my application?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments clarify that emission results must be submitted in the certification application for each mode when testing under a discrete-mode cycle. The amendments also clarify that measured carbon dioxide (CO2), nitrous oxide (N2O), and methane (CH4) (greenhouse gasses) must usually be reported in the certification application. The amendments would also require manufacturers to identify whether or not any of the engines in an engine family will be used in stationary applications, and require manufacturers to explain and justify significant increases in production volumes from year to year to curtail any potential stockpiling intentions. Finally, the amendments would require that manufacturers assign a certification service agent located domestically. (Alignment)

§1039.220 How do I amend the maintenance instructions in my application?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments clarify the procedures for amending maintenance instructions and the continued liability of the manufacturer for those changes with respect to warranty claims. (Alignment)

§1039.225 How do I amend my application for certification?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed modifications provide clarity to existing language by making some provisions more specific, and by removing ambiguity from others. Additionally, the amendments clarify existing policy to allow the raising or lowering of FEL designations under specific conditions. (Alignment)

§1039.230 How do I select engine families?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments consist of a change in philosophy regarding the grouping of engines into families based on cylinder arrangement rather than cylinder count and provide more specificity regarding existing requirements. (Alignment)

§1039.235 What testing requirements apply for certification?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

In addition to simplifying the name of the section, the proposed amendments would clarify existing text and would require the measurement of CO2, N2O, and CH4 for low-hour certification testing as well as the protocol for rounding test results. Additionally, the text clarifies that N20 and CH4 testing may be omitted for engines not subject to N20 and CH4 standards so long as an alternate approved method of inferring the data is available. (Alignment)

§1039.240 How do I demonstrate that my engine family complies with exhaust emission standards?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments require that emission test results from engines used to establish deterioration factors must be below the standards at each test point for general certification testing and for not-to-exceed (NTE) testing. Other clarifications making existing language more specific are also proposed. (Alignment)

§1039.245 How do I determine deterioration factors from exhaust durability testing?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendment restructures the wording in the paragraph to locate the introduction and purpose statement ahead of the specification of procedural criteria for determining deterioration factors. (Alignment)

§1039.250 What records must I keep and what reports must I send to the Air Resources Board (ARB)?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments extend the deadline for submitting production reports to 45 days (previously 30) after the end of the year and make grammatical and referencing corrections. (Alignment)

§1039.255 What decisions may ARB make regarding my Executive Order?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments clarify that all information will be considered when denying a manufacturers application for certification, and provide California-specific references regarding ARB's authority to void Executive Orders. (Alignment)

Subpart F – Test Procedures

The purpose of subpart F is to standardize the procedures for measuring emissions in a precise and repeatable manner representing the real-world operation of off-road diesel engines and equipment.

§ 1039.501 How do I run a valid emission test?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments refine the scope of applicability to measuring only exhaust constituents and reiterate that CO2, N2O, and CH4 must also be measured. (Alignment)

§ 1039.505 How do I test engines using steady state duty cycles, including ramped modal testing?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments to this section include a more specific reference to part 1065.514 for calculating duty-cycle statistics, a reference change to the procedures in part 1065 for calculating idle emissions, removal of the elsewhere-required maximum fueling rate criterion for testing constant speed engines at full load operating modes, and changes to duty-cycle regression calculations when using, and to allow the use of, non-motoring dynamometers during idle operation. (Alignment)

§ 1039.510 Which duty cycles do I use for transient testing?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments clarify the calculation of "Official Transient Emission Result" with a graphical representation of the equation, and replace the validation procedures for cycle statistics with a reference to 1065.514. (Alignment)

Subpart G – Special Compliance Provisions

The purpose of subpart G is to grant optional compliance flexibility provisions to address hardship and/or to ease the transition to lower standards. The provisions in this subpart are usually available for a limited time only.

§ 1039.625 What requirements apply under the program for equipment-manufacturer flexibility?

Some of the proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits. The other proposed amendments are necessary to ensure the effectiveness of ARB programs for which U.S. EPA does not have an equivalent counterpart.

The proposed amendments to this section include clarification that engines certified to FELs are still considered compliant with emission standards, clarification that manufacturers may be required to use Tier 2 engines under the flexibility program, the correction of a clerical error that would have resulted in manufacturers being required to use non-existent Tier 3 engines as flexibility allowances for equipment requiring engines with rated power 37-56 kW, a requirement to list the manufacturer's website on the emission control label instead of an employee's name and telephone number for contact purposes, removal of the unnecessary January 1 deadline for notifying ARB of a manufacturer's intent to use flexibility allowances, clarification of the requirements for identifying the manufacturers of the engines to be used by the equipment manufacturer, and the option to eliminate the listing of the FEL on flexibility engine labels when the FEL is more stringent than the emission standard. (Alignment)

Staff also proposes to require the inclusion of engine family name to the recordkeeping requirements to assist ARB certification staff in tracking and verifying flexibility allowances. (Non-Alignment)

§ 1039.626 What special provisions apply to equipment imported under the equipment-manufacturer flexibility program?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without

such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed requirements would remove the unnecessary January 1 deadline for notifying ARB of an importer's intent to use flexibility allowances. (Alignment)

Subpart H – Averaging, Banking, and Trading for Certification

The purpose of Subpart H is to explain the requirements for calculating Family Emission Limits (FELs) and the proper application of emission credits.

§ 1039.705 How do I generate and calculate emission credits?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments clarify that positive and negative emission credits should be rounded separately prior to being added together. (Alignment)

§ 1039.715 How do I bank emission credits?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments remove the restriction of using banked credits only within the averaging set in which they were created and clarify when and how reserved credits become actual credits. (Alignment)

§ 1039.720 How do I trade emission credits?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendment clarifies that trading banked credits to another manufacturer is only allowed within an averaging set. (Alignment)

§ 1039.725 What must I include in my application for certification?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments remove provisions to identify the final destination of the generated credits because there are no longer any restrictions to use credits within the same averaging set. (Alignment)

§ 1039.730 What ABT reports must I send to ARB?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments clarify the recordkeeping requirements after changing an FEL post production, and make more specific the type of production volumes associated with the changed FEL that must be reported. (Alignment)

§ 1039.735 What records must I keep?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments restrict the use and banking of credits for improper retention of accurate records, allow manufacturers to store records on any media so long as the information is in English and can be made available to ARB promptly on request, and requires the identification of the purchaser and destination for every engine sold in the records. (Alignment)

Subpart I – Definitions and Other Reference Information

The purpose of subpart I is to explain terms, acronyms, and abbreviations used throughout the test procedures and regulations to ensure a consistent interpretation of the requirements herein.

§ 1039.801 What definitions apply to this part?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed changes to this section include the addition or revision of several definitions necessary for maintaining alignment between federal and California regulations. (Alignment)

§ 1039.805 What symbols, acronyms, and abbreviations does this part use?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or

certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments include new acronyms for nitrous oxide (N2O) and methane (CH4) because these pollutants are now required to be measured and reported in the certification applications for some engine families. (Alignment)

§ 1039.810 What materials does this part reference?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to delete this section as it is no longer a federal requirement and was only included in the California test procedures for continuity and consistency. The reference information is contained elsewhere within the regulations. (Alignment)

§1039.825 What reporting and recordkeeping requirements apply under this part?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

This is a new section that would simplify the identification of reporting and recordkeeping requirements in Part 1039 by consolidating the location for each requirement by section number. (Alignment)

Appendix II to Part 1039 – Steady-state Duty Cycles

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or

certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments to Appendix II include a change in title and the reorganizing and incorporation of requirements from Appendices III and IV to create a more comprehensive section for the requirements pertaining to the duty-cycles for steady-state engines. (Alignment)

Appendix III to Part 1039 DELETE. (Alignment)

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Appendix IV to Part 1039 DELETE. (Alignment)

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

PART 1065 – ENGINE-TESTING PROCEDURES: Tier 4 Off-Road Compression-Ignition Engines

The proposed part 1065 test procedures prescribe scaled specifications for test equipment and measurement instruments by parameters such as engine power, engine speed and the emission standards to which an engine must comply. Manufacturers will be able to use these specifications to determine what range of engines and emission standards may be tested. The basis of the proposed 1065 is the federal part 1065, which is a combination of U.S. EPA's existing test procedures for testing various categories of nonroad engines and heavy-duty on-highway engines. Part 1065 has been revised by U.S. EPA to better fit off-road compression-ignition engines in response to comments from stakeholders.

Part 1065 is organized by subparts as shown below:

Subpart A	General provisions; global information on applicability, alternate procedures, units of measure, etc.
Subpart B	Equipment specifications; required hardware for testing
Subpart C	Measurement instruments
Subpart D	Calibration and verifications; for measurement systems
Subpart E	Engine selection, preparation, and maintenance
Subpart F	Test protocols; step-by-step sequences for laboratory testing and test validation
Subpart G	Calculations and required information
Subpart H	Fuels, fluids, and analytical gases
Subpart I	Oxygenated fuels; special test procedures
Subpart J	Field testing and portable emissions measurement systems
Subpart K	Definitions, references, and symbols

Subpart A

The purpose of subpart A is to identify the applicability of part 1065 and describe how procedures other than those in part 1065 may be used to comply with Title 13, CCR regulations for off-road compression-ignition engines.

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1065.1 The purpose of this section is to explain that land-based off-road compression-ignition engines remain subject to Title 13, CCR, Chapter 9, Article4, rather than U.S. EPA's exhaust emission requirements. Other subsections that are not applicable to this portion of the California test procedure are deleted.

Subpart B

The purpose of subpart B is to describe engine and dynamometer related systems. Many of these specifications are scaled to an engine's size, speed, torque, exhaust flow rate, etc. Subpart B also describes sampling dilution systems. These include specifications for the allowable components, materials, pressures, temperatures, and a diagram illustrating all the available equipment for measuring emissions.

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart C

The purpose of subpart C is to specify the requirements for the measurement instruments used for testing. These specifications apply to both laboratory and field testing. Subpart C recommends accuracy, repeatability, noise, and response time specifications for individual measurement instruments, and requires that overall measurement systems meet the calibrations and verifications in Subpart D.

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart D

The purpose of subpart D is to specify accuracy, repeatability and other related parameters for the test measurement systems.

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart E

The purpose of subpart E is to describe how to select, prepare, and maintain a test engine.

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart F

The purpose of subpart F is to describe the step-by-step protocols for engine mapping, test cycle generation, test cycle validation, pre-test preconditioning, engine starting, emission sampling, and post-test validations.

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart G

The purpose of subpart G is to address all the calculations required in part 1065. Subpart G specifies emission calculations based on molar quantities for flow rates instead of volume or mass. This change eliminates the frequent confusion caused by using different reference points for standard pressure and standard temperature. Instead of declaring standard densities at standard pressure and standard temperature to convert volumetric concentration measurements to mass-based units, subpart G declares molar masses for individual elements and compounds. Since these values are independent of all other parameters, they are known to be universally constant.

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart H

The purpose of subpart H is to specify test fuels, lubricating oils and coolants, and analytical gases for testing. Subpart H also specifies that service accumulation fuels must be either a test fuel or a commercially available in-use fuel. This helps ensure that testing is representative of in-use engine operation.

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1065.701 The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits. The purpose of this section is to describe general requirements for test fuels. Staff has proposed that the Executive Officer may approve other test fuels to be used by the certifying entity so long as they do not affect the demonstration of compliance.

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

§1065.703 The purpose of this section is to allow engine testing with other fuels, such as California diesel fuel, so long as they do not affect the demonstration of compliance.

Subpart I

The purpose of this subpart is to describe special procedures for measuring certain hydrocarbons whenever oxygenated fuels are used.

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart J

The purpose of subpart J is to describe field testing and portable emissions measurement systems (PEMS).

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Subpart K

The purpose of subpart K is to list all the defined terms, identification of reference materials, and lists of acronyms and abbreviations used throughout part 1065.

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

PART 1068 – GENERAL COMPLIANCE PROVISIONS FOR OFF-ROAD COMPRESSION-IGNITION ENGINE PROGRAMS

Proposed amendments to the incorporated provisions of the California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off Road Compression Ignition Engines, Part I-F, applicable to land-based off-road compression ignition engines regulated under Title 13, CCR, Chapter 9, Article 4.

In the following descriptions of the specific amendments being proposed, a complete alignment with a corresponding federal subsection is indicated by "(Alignment)." Instances of non-alignment with specific portions within a subsection being proposed for alignment are indicated by "(Non-alignment)."

The proposed amendments are necessary to clarify the scope of applicability as belonging to California certified engines rather than federally certified engines, and to identify the source document upon which staff's proposed changes are predicated.

Staff proposes to substitute the adjective "OFF-ROAD" in place of the federal adjective "NONROAD" in the title of this Part 1068 for better consistency with, and identification of, California requirements. Additionally, staff proposes to add the phrase "COMPRESSION-IGNITION ENGINE" to indicate that the California test procedures are specific to off-road compression-ignition engines unlike the federal version of Part 1068 which is applicable to all nonroad categories.

Staff proposes to reference the existing test procedures as the new source document rather than to continue referencing the federal register from which the exiting test procedures were originally constructed. This is a more straightforward way of illustrating staff's proposed amendments than to reconstruct the entirety of amendments from the initial adoption of the regulation, which could confuse the reader as to which proposed changes are current and which had been previously adopted by the Board.

Subpart A – Applicability and Miscellaneous Provisions

The purpose of Subpart A is to identify the types of engines and equipment subject to the regulations, explain ARB's rights to inspect and verify compliance, explain ARB's

decision making process, define technical terms used throughout the test procedures, and provide general guidance regarding labels.

§ 1068.2 How does this part apply for engines and how does it apply for equipment?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff's proposal incorporates a new section to explain the applicability of recently added provisions for equipment manufacturers. In general, the federal provisions are meant to apply to nonroad categories where evaporative emission control requirements and standards are already effective. However, staff is proposing to incorporate these provisions for the California off-road compression-ignition category, which has no evaporative emission control requirements, because the provisions would grant ARB increased access to inspect equipment manufacturing facilities to ensure compliance regarding other equipment-manufacturer-specific areas of these regulations, California's other off-road compression-ignition in-use regulations, and the future implementation of off-road compression-ignition not-to-exceed requirements. (Alignment)

§ 1068.5 How must manufacturers apply good engineering judgment?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposal adds in-use equipment to the list of compliance testing categories wherein good engineering judgment must be applied. (Alignment)

§ 1068.15 What general provisions apply for Air Resources Board decision-making?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposal amends the title of the section to more accurately depict the information contained in the section. (Alignment)

§ 1068.20 May ARB enter my facilities for inspections?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to extend ARB's right-of-access authority to facilities that manufacturer, store, and/or test off-road compression-ignition equipment. (Alignment)

§ 1068.25 What information must I give to ARB?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to extend recordkeeping and reporting requirements for exempt equipment to equipment manufacturers. Staff also proposes to clarify that required records must be retained for 8 years and that manufacturers are ultimately liable and subject to civil penalty for the submission of false information, even if provided to and submitted by a third party. (Alignment)

§ 1068.27 May ARB conduct testing with my production engines/equipment?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without

such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to extend ARB's authority to request and conduct production-line testing to equipment subject to the regulations (instead of just engines). (Alignment)

§ 1068.30 What definitions apply to this part?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments to this section include updated references to the proposed revised test procedures for sharing common definitions, updated general references to the proposed revised test procedures for Parts 1039 and 1068, adoption of several new definitions, and the modification of several existing definitions. (Alignment)

§1068.45 General labeling provisions.

The proposed amendments are necessary to ensure the effectiveness of ARB programs for which U.S. EPA does not have an equivalent counterpart.

Staff proposes to redirect the provisions of this new section back to the existing requirements for emission control labels found in §2424 of the California regulations, including criteria for visibility, permanence, location, and other related requirements. (Non-alignment)

Subpart B – Prohibited Actions and Related Requirements

The purpose of Subpart B is to clarify the intention of the regulations by identifying actions that are contrary to compliance and/or which would constitute violations subject to civil penalty.

§ 1068.101 What general actions does this regulation prohibit?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to incorporate new federal subparagraph (b)(7) that clarifies the prohibition and penalties associated with removing permanent labels, but also provides a list of circumstances where removal is permitted, including replacement of an incorrect label prior to the engine being sold to an ultimate purchaser. (Alignment)

§ 1068.103 What are the provisions related to the duration and applicability of Executive Orders?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to align with new federal section §1068.103 for the purposes of having a uniform nationwide approach regarding model year production periods, and clarifying that engines may be pre-built prior to the effective date of the Executive Order. The proposed amendments would also clarify stockpiling prohibitions by constraining manufacturer's inventory practices to prevent the circumvention of new standards. (Alignment)

§ 1068.105 What other provisions apply to me specifically if I manufacture equipment needing certified engines?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposal further clarifies prohibitions against stockpiling by disallowing the knowledgeable installation of engines by equipment manufacturers that were illegally stockpiled by engine suppliers, and clarifies that equipment may not be introduced into commerce in California with engines that are not covered by an Executive Order. (Alignment)

§ 1068.110 What other provisions apply to engines/equipment in service?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments would make equipment (instead of just engines) applicable to the provisions regulating aftermarket parts, and the certification thereof, for repair purposes, and allows manufacturers to limit diagnosis and repair support to authorized service facilities so long as warranty obligations can still be met. (Alignment)

§ 1068.115 When must manufacturers honor emission-related warranty claims?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to extend the provisions related to warranty claims to equipment, but only with respect to the regulated aspects of the equipment. (Alignment)

§ 1068.120 What requirements must I follow to rebuild engines?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments clarify that although records need not be kept for maintenance or service other that rebuilding, it is a violation for service providers to make any repair or modification that results in increased emissions. The proposed amendments also clarify that rebuilt engines must be at least as clean as the engines being replaced, but that in some cases an earlier tier engine can be as clean as a later tier engine due to averaging, etc. Additionally, the amendments allow for the approximation of hours of operation or mileage if the engine does not have an hour meter or odometer. (Alignment)

Subpart C – Exemptions and Exclusions

The purpose of Subpart C is to identify special cases or classifications of engines and equipment where the requirements of this part would not apply. (Alignment)

§ 1068.201 Does ARB exempt or exclude any engines/equipment from the prohibited acts?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments would extend the applicability of exemptions and exclusions from prohibited acts to equipment (instead of just engines), as appropriate. (Alignment)

§ 1068.210 What are the provisions for exempting test engines/equipment?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments would extend the applicability of testing-related exemption provisions to equipment (instead of just engines) used solely for testing purposes, as appropriate. Affected equipment would be labeled accordingly. (Alignment)

§ 1068.215 What are the provisions for exempting manufacturer-owned engines/equipment?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments would extend the applicability of experimental permit exemptions to equipment (instead of just engines), as appropriate. Affected equipment would be labeled accordingly. (Alignment)

§ 1068.220 What are the provisions for exempting display engines/equipment?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments would extend the applicability of display exemption provisions to equipment (instead of just engines), as appropriate. Affected equipment would be labeled accordingly. (Alignment)

§ 1068.225 What are the provisions for exempting engines/equipment for national security?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments would extend the applicability of exemptions for national security to equipment (instead of just engines). The proposed amendments would also redirect all requirements to the exact federal requirements of 40 CFR 1068.225 as of June 28, 2011. (Alignment)

§ 1068.230 What are the provisions for exempting engines/equipment for export?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments would extend the applicability of export exemption provisions to equipment (instead of just engines), as appropriate. (Alignment)

§ 1068.235 What are the provisions for exempting engines/equipment used solely for competition?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposed amendments would extend the applicability of competition exemption provisions to equipment (instead of just engines), as appropriate. The proposed amendments also clarify that using this provision to circumvent the regulations would be a violation of the regulations. (Alignment)

§ 1068.240 What are the provisions for exempting new replacement engines?

Some of the proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits. The other proposed amendments are necessary to ensure the effectiveness of ARB programs for which U.S. EPA does not have an equivalent counterpart.

Staff proposes to amend the labeling portion of this section to focus on the replacement engine rather than the engine being replaced. (Non-alignment)

Staff proposes to adopt the same statement of compliance form as promulgated federally (i.e., same language, but with California-specific references). (Alignment)

Staff proposes the inclusion of additional information (i.e., engine power, reference family name, and date of manufacturer) on the emissions control label to aid in the implementation of ARB-specific in-use fleet modernization programs and their enforcement. (Non-alignment)

§ 1068.245 What temporary provisions address hardship due to unusual circumstances?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

The proposal would clarify existing language by removing redundant or unnecessary qualifiers to using the hardship allowances. The proposal would also clarify conditions in a new subparagraph (b), related to the unusual circumstances that lead to the hardship, by which manufacturers can qualify for hardship relief without a demonstration that lack of relief will result in the insolvency of their companies. New provisions regarding the labeling of equipment are also proposed to address hardship relief pertaining to equipment. (Alignment)

§ 1068.250 What are the provisions for extending compliance deadlines for small volume manufacturers and small businesses under hardship?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to extend the applicability of this provision to small businesses and for equipment (instead of just engines), as appropriate. Staff also proposes to adopt the same labeling form as U.S. EPA for engines qualifying under this provision, but would require a mandatory listing of engine power on the emission control label for California

engines. New provisions regarding the labeling of equipment are also proposed to address this provision pertaining to equipment. (Alignment)

§ 1068.255 What are the provisions for exempting engines and components for hardship for equipment manufacturers and secondary engine manufacturers?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to clarify the labeling requirements for engines using the provisions of this section by adopting the same labeling form as U.S. EPA, but with a mandatory listing of engine power on the emission control label for California engines. (Alignment)

§ 1068.260 What general provisions apply for selling or shipping engines that are not yet in their certified configuration?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to clarify the existing language of §1068.261 by bifurcating the requirements into separate sections, the new §1068.260 and the amended §1068.261. This new section explains the delegated assembly requirements for engines that are not yet certified whereas the amended §1068.261 explains the delegated assembly requirements for engines that have already been certified. (Alignment)

§ 1068.261 What provisions apply for selling or shipping certified engines that are not yet in the certified configuration?

Some of the proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional

requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits. The other proposed amendments are necessary to ensure the effectiveness of ARB programs for which U.S. EPA does not have an equivalent counterpart.

As explained above, staff proposes to revise this section to specifically address the delegated final assembly of certified engines. (Alignment)

Staff also proposes to include language separate from that in the federal provisions to prevent distributors that have been designated as equipment manufacturers under this section to be eligible for equipment manufacturer flexibility allowances.(Non-alignment)

§ 1068.265 What provisions apply to engines/equipment that are conditionally exempted from certification?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to extend the provisions of this section to equipment, for which certification would normally apply, that have been exempted from certification requirements. (Alignment)

Subpart D – Imports

The purpose of Subpart D is to ensure uniform compliance with the regulations regardless of an engine's point of origin.

§ 1068.301 What general provisions apply?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or

certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

In addition to a change in title to more accurately characterize the section, staff proposes to clarify that U.S. EPA is generally responsible for regulating the importation of engines into the United States, even if importation were to occur exclusively into California, but that ARB reserves the right to independently enforce the requirements through civil penalties and/or the revocation of Executive Orders. (Alignment)

§ 1068.305 How do I get an exemption or exclusion for imported engines/equipment?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to clarify that U.S. EPA is generally responsible for regulating the importation of engines into the United States, even if importation were to occur exclusively into California. (Alignment)

§ 1068.310 What are the exclusions for imported engines/equipment?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to clarify that U.S. EPA is generally responsible for regulating the importation of engines into the United States, even if importation were to occur exclusively into California. (Alignment)

§ 1068.315 What are the permanent exemptions for imported engines/equipment?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without

such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to clarify that U.S. EPA is generally responsible for regulating the importation of engines into the United States, even if importation were to occur exclusively into California. (Alignment)

§ 1068.320 How must I label an imported engine with a permanent exemption?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to delete this section in deference to U.S. EPA's jurisdiction over the importation of engines into the United States and because the labeling provisions of this section are now addressed elsewhere in §1068.310(e). (Alignment)

§ 1068.325 What are the temporary exemptions for imported engines/equipment?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to clarify that U.S. EPA is generally responsible for regulating the importation of engines into the United States, even if importation were to occur exclusively into California. (Alignment)

§ 1068.330 How do I import engines requiring further assembly?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or

certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to delete this section in deference to U.S. EPA's jurisdiction over the importation of engines into the United States and because the further assembly of this section provisions have now been assimilated into §1068.325. (Alignment)

§ 1068.335 What are the penalties for violations?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to clarify that U.S. EPA is generally responsible for regulating the importation of engines into the United States, even if importation were to occur exclusively into California. Staff also proposes to retain authority to enjoin any violation of any provisions of Subpart D of this part 1068 under §43017 of the California Health and Safety Code. (Alignment)

§ 1068.360 What restrictions apply to assigning a model year to imported engines and equipment?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to clarify that U.S. EPA is generally responsible for regulating the importation of engines into the United States, even if importation were to occur exclusively into California. (Alignment)

Subpart E – Selective Enforcement Auditing

The purpose of Subpart E is to provide ARB with an early opportunity to evaluate the emissions performance of certified production vehicles and the authority to revoke Executive Orders upon evaluation failure.

§ 1068.410 How must I select and prepare my engines?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to remove the provisions for calculating an alternate minimum idle speed based on emissions stabilization in lieu of the more standardized procedures in part 1065 of the 2011 and Later Test Procedures. The proposal also renumbers portions of the section to improve readability. (Alignment)

§ 1068.415 How do I test my engines?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff's proposal clarifies that ARB has the authority to require service hour accumulation at a greater rate than the minimum specified accumulation rate. (Alignment)

§ 1068.430 What happens if an engine family fails an SEA?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to clarify the existing requirement by reorganizing sentences to improve readability. (Alignment)

Subpart F – Reporting Defects and Recalling Engines/Equipment

The purpose of Subpart F is to ensure the repair of non-conforming engines and equipment in the field and to serve as an incentive for manufacturers to design and build more durable engines and equipment from the start to avoid the expenses associated with conducting a recall.

§ 1068.501 How do I report emission-related defects?

The proposed amendments are necessary to restore/establish alignment with similar provisions in the federal regulations for nonroad compression-ignition engines. Without such alignment, manufacturers could be forced to satisfy additional requirements and/or certify separate engine families in California at considerable extra cost without a corresponding increase in emission benefits.

Staff proposes to incorporate the latest changes made by U.S. EPA to the defect reporting requirements of this section to avoid separate federal vs. State thresholds. Separate thresholds would necessitate manufacturers doing double work to comply with these provisions without a corresponding benefit in emissions. (Alignment)

APPENDIX U

Summary & Rationale

New Large Spark-Ignition Engines; and,

In-Use Large Spark-Ignition Engine Retrofits

- **Title 13, California Code of Regulations**
- **Test Procedures**

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Summary and Rationale for Proposed Regulations

Section 2433 Emission Standards and Test Procedures–Off-Road Large Spark-Ignition Engines.

This purpose of this section is to identify the exhaust and evaporative emission standards, and to incorporate by reference the required test procedures to be used for demonstrating compliance with the applicable emission standards of the off-road large spark-ignition engine category, which are necessary to control the hydrocarbon, carbon monoxide, and oxides of nitrogen emissions from these sources.

(c) The purpose of this subsection is to identify and incorporate by reference the test procedures applicable for off-road large spark-ignition engines with displacements greater than 1 liter, which are necessary to control the hydrocarbon, carbon monoxide and oxide of nitrogen emissions from these sources. The amendments clarify the most recent amendment date to these test procedure documents.

(d)(1) The purpose of this subsection is to identify and incorporate by reference the test procedure applicable for off-road large spark-ignition engines with displacements less than or equal to 1 liter, which are necessary to control the hydrocarbon, carbon monoxide and oxide of nitrogen emissions from these sources. The amendment clarifies the most recent amendment date to this test procedure document.

California Exhaust and Evaporative Emission Standards and Test Procedures for New 2010 and Later Off-Road Large Spark-Ignition Engines (2010 and Later Test Procedure 1048).

PART 1048 – CONTROL OF EMISSIONS FROM NEW, LARGE NONROAD SPARK-IGNITION ENGINES

Subpart B—Emission Standards and Related Requirements

Section1048.101 What exhaust emission standards must my engines meet?

(e) This subsection heading was amended for capitalization.

(1) This subsection heading was amended for capitalization.

(2) The purpose of this section is to identify the fuel specifications that are to be used for certification testing. This section was amended to allow off-road large spark-ignition engine manufacturers the optional use of the new California 10-percent ethanol-blend gasoline (E10) certification test fuel, which ARB will adopt for 2015 and subsequent model on-road motor vehicles, for 2013 through 2018 model-year engines. Use of this E10 certification test fuel will become mandatory beginning with the 2019 model year. The proposed optional and required use of this E10 certification test fuel is applicable to only exhaust emission test purposes.

(A) The purpose of this subsection is to identify the acceptable test fuels for certification testing. The amendment acknowledges an optional, alternate fuel.

(B) The purpose of this new subsection is to provide manufacturers the alternative of using the new California 10-percent content of ethanol-blend gasoline (E10) certification test fuel for model years 2013-2018.

(C) The purpose of this new subsection is to require the new California 10-percent content of ethanol-blend gasoline (E10) certification test fuel for all 2019 and later model-year off-road large spark-ignition engines.

(2)(D) This subsection was amended for formatting reasons.

(2)(E) This subsection was amended for formatting reasons.

California Exhaust Emission Standards and Test Procedures for New 2007 and Later Off-Road Large Spark-Ignition Engines (Test Procedures 1065 and 1068).

Subpart H –Engine Fluids, Test Fuels, Analytical Gases and Other Calibration Standards

Section 1065.701 General requirements for test fuels.

(a) The purpose of this section is to identify the fuel specifications that are to be used for certification testing. This section was amended to allow off-road large spark-ignition engine manufacturers the optional use of the new California 10-percent ethanol-blend gasoline (E10) certification test fuel, which ARB will adopt for 2015 and subsequent model on-road motor vehicles, for 2013 through 2018 model-year engines. Use of this E10 certification test fuel will become mandatory beginning with the 2019 model year. The proposed optional and required use of this E10 certification test fuel is applicable to only exhaust emission test purposes.

(1) The purpose of this subsection is to identify the acceptable test fuels for certification testing. The amendment acknowledges an optional, alternate fuel.

(2) The purpose of this new subsection is to provide manufacturers the alternative of using the new California 10-percent content of ethanol-blend gasoline (E10) certification test fuel for model years 2013-2018.

(3) The purpose of this new subsection is to require the new California 10-percent content of ethanol-blend gasoline (E10) certification test fuel for all 2019 and later model-year off-road large spark-ignition engines.

(4) This subsection was amended for formatting reasons.

Section 1065.710 Gasoline.

(b) The purpose of this subsection is to identify the specifications of the appropriate fuel for certification testing. The amendment allows the current option to use federal test fuel specifications through the 2018 model year, but for 2019 and later model years, it provides an option to use a federal test fuel only if that fuel is a ten-percent blend of ethanol. This ensures consistency with the California ten-percent ethanol test fuel required starting in 2019.

Summary and Rationale for Proposed Regulations

Section 2783. Emissions Reduction Testing Requirements.

(d) (1) The purpose of this section is to identify the fuel specifications that are to be used for testing.

(2) The purpose of this new subsection is to require that California's E10 certification test fuel be used to demonstrate compliance with the exhaust emission requirements of §2783, if the E10 test fuel was used to originally certify the engines of interest under the optional allowance for 2013 through 2018 model years.

(3) The purpose of this new subsection is to ensure that California's E10 certification test fuel be used to demonstrate compliance with the exhaust emission requirements of §2783 for engines of interest that were originally certified for the 2019 and later model years.

(4) This subsection was amended for formatting reasons.

Section 2784. Durability Demonstration Requirements.

(c) (1) The purpose of this section is to identify the fuel specifications that are to be used for durability testing. This section was amended to differentiate between engines of interest that may have been certified originally on California's E10 certification test fuel under the optional allowance for 2013 through 2018 model years and those that were not certified on the E10 test fuel.

(2) The purpose of this new subsection is to require that California's E10 certification test fuel be used to demonstrate compliance with the exhaust emission requirements of §2784, if the E10 test fuel was used to originally certify the engines of interest under the optional allowance for 2013 through 2018 model years.

(3) The purpose of this new subsection is to ensure that California's E10 certification test fuel be used to demonstrate compliance with the exhaust emission requirements of §2784 for engines of interest that were originally certified for the 2019 and later model years.

(4) This subsection was amended for formatting reasons.

APPENDIX V

Summary & Rationale

Off-Highway Recreational Vehicles

- Title 13, California Code of Regulations
- Test Procedures

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Section 2412. Emission Standards and Test Procedures – New Off-Highway Recreational Vehicles and Engines.

This purpose of this section is to identify the exhaust and evaporative emission standards, and to incorporate by reference the required test procedures to be used for demonstrating compliance with the applicable emission standards of the off-highway recreational vehicle category, which is necessary to control the hydrocarbon and carbon monoxide emissions from these sources.

(c)(1) The purpose of this subsection is to identify the test procedure documents that apply to off-highway recreational vehicles. The amendment clarifies the most recent amendment date to these test procedure documents.

(c)(2) The purpose of this subsection is to identify the optional test procedures for off-highway recreational vehicles. The amendment clarifies the most recent amendment date to these test procedure documents.

(d)(1) The purpose of this subsection is to define the formula that manufacturers are to use when using corporate averaging for certification. The amendment clarifies the most recent amendment date to the test procedure documents.

California Exhaust Emission Standards and Test Procedures for 1997 and Later Off-Highway Recreational Vehicles and Engines.

The purpose of this test procedure is to identify the exhaust emission standards and test procedures applicable for off-highway recreational vehicles and engines, which is necessary to control the hydrocarbon and carbon monoxide emissions from these sources. This test procedure is incorporated by reference in section 2412, title 13, California Code of Regulations.

Subpart F

Section 86.513 - 90 Fuel and engine lubricant specifications. 54 FR 14544, Apr. 11, 1989.

The purpose of this section is to identify the fuel and engine lubricant specifications that are to be used for certification testing. This section was amended to allow off-road recreational vehicle manufacturers the optional use of the new California 10-percent ethanol-blend gasoline (E10) certification test fuel, which ARB will adopt for 2015 and subsequent model on-road motor vehicles, for 2013 through 2018 model-year vehicles. Use of this E10 certification test fuel will become mandatory beginning with the 2019 model year. The proposed optional and required use of this E10 certification test fuel is applicable to only exhaust emission test purposes.

(a)(1)(i) The purpose of this subsection is to identify the fuel to be used for certification testing of current production off-highway recreational vehicles. This subsection was amended for formatting reasons.

(a)(1)(ii) (ii) The purpose of this new subsection is to provide manufacturers the alternative of using the new California 10-percent content of ethanol-blend gasoline (E10) certification test fuel for model years 2013-2018.

(a)(2) The purpose of this new subsection is to require the new California 10-percent content of ethanol-blend gasoline (E10) certification test fuel for all 2019 and later model-year off-highway recreational vehicles.

APPENDIX W

Summary & Rationale

Recreational Marine Spark-Ignition Engines

- Title 13, California Code of Regulations
- Test Procedures

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2447. California Exhaust Emission Standards and Test Procedures for 2001 Model Year and Later Spark-Ignition Marine Engines.

The purpose of this section is to identify and to incorporate by reference the required test procedures to be used for demonstrating compliance with the applicable emission standards of the spark-ignition marine engine category, which is necessary to control the hydrocarbon, carbon monoxide, and oxides of nitrogen emissions from these sources. The amendment clarifies the most recent amendment date to this test procedure document.

California Exhaust Emission Standards and Test Procedures for 2001 Model Year and Later Spark-Ignition Marine Engines.

The purpose of this test procedure is to identify the exhaust emission standards and test procedures applicable for spark-ignition marine engines, which is necessary to control the hydrocarbon and carbon monoxide emissions from these sources. This test procedure is incorporated by reference in section 2447, title 13, California Code of Regulations.

Part III. Emission Test Equipment Provisions.

44. Lubricating Oil and Test Fuel.

The purpose of this section is to identify the fuel and engine lubricant specifications that are to be used for certification testing. This section was amended to allow spark-ignition marine engine manufacturers the optional use of the new California 10-percent ethanol-blend gasoline (E10) certification test fuel, which ARB will adopt for 2015 and subsequent model on-road motor vehicles, for 2013 through 2018 model-year vessels and engines. Use of this E10 certification test fuel will become mandatory beginning with the 2019 model year. The proposed optional and required use of this E10 certification test fuel is applicable to only exhaust emission test purposes.

(b)(1)

(i) The purpose of this subsection is to identify the fuel to be used for certification testing of current production spark-ignition marine engines. This subsection was amended for formatting reasons.

(ii) The purpose of this new subsection is to provide manufacturers the alternative of using the new California 10-percent content of ethanol-blend gasoline (E10) certification test fuel for model years 2013-2018.

(b)(2) The purpose of this new subsection is to require the new California 10-percent content of ethanol-blend gasoline (E10) certification test fuel for all 2019 and later model-year spark-ignition marine engines.

CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR NEW 2008 AND LATER TIER 4 OFF-ROAD COMPRESSION-IGNITION ENGINES

The following provisions of Part 1039, Part 1065, and Part 1068, Title 40, Code of Federal Regulations, as proposed by the United States Environmental Protection Agency on the date listed, are adopted and incorporated herein by this reference for 2008-2010 model year and later off-road compression-ignition engines as the California Exhaust Emission Standards and Test Procedures for New 2008-2010 Tier 4 Off-Road Compression-Ignition Engines, except as altered or replaced by the provisions set forth below.

PART 1039 – CONTROL OF EMISSIONS FROM NEW AND IN-USE OFF-ROAD COMPRESSION-IGNITION ENGINES

SOURCE: 69 FR 38957, June 29, 2004, amended July 13, 2005, unless otherwise noted.

Subpart A – Overview and Applicability

§ 1039.1 Does this part apply for my engines?

* * * * *

(b)(3)

See Title 13, CCR, Chapter 9, Article 4, and the 2000 Plus Limited Test Procedures for requirements that apply to engines not yet subject to the requirements of this part 1039.

* * * * *

§ 1039.5 Which engines are excluded from this part's requirements?

* * * * *

§ 1039.10 How is this part organized?

Introductory Text DELETE,
REPLACE WITH:

The regulations in this part 1039 contain provisions that may affect engine or equipment manufacturers, or both, and others. However, the requirements of this part are generally addressed to the engine manufacturer. The term "you" generally means the engine manufacturer, as defined in § 1039.801. This part 1039 is divided into the following subparts:

* * * * *

§ 1039.15 Do any other regulation parts apply to me?

* * * * *

§ 1039.20 What requirements from this part apply to excluded stationary engines?

* * * * *

(b)(4) DELETE,

REPLACE WITH:

State: "THIS ENGINE IS EXCLUDED FROM THE REQUIREMENTS OF 13 CCR, CH 9, ARTICLE 4, AS A "STATIONARY ENGINE." INSTALLING OR USING THIS ENGINE IN ANY OTHER APPLICATION MAY BE A VIOLATION OF CALIFORNIA

LAW SUBJECT TO CIVIL PENALTY.". The referencing of similar federal requirements in combination with California references under this provision is permitted.

Subpart B – Emission Standards and Related Requirements

§ 1039.101 What exhaust emission standards must my engines meet after the 2014 model year?

Introductory Text DELETE,

REPLACE WITH:

The exhaust emission standards of this section apply after the 2014 model year. Certain of these standards also apply for model year 2014 and earlier. This section presents the full set of emission standards that apply after all the transition and phase-in provisions of § 1039.102 and § 1039.104 expire. See § 1039.102 and Title 13, CCR, § 2423(b)(1)(A) for exhaust emission standards that apply to 2014 and earlier model years. § 1039.105 specifies smoke standards.

* * * * *

(d) "not-to-exceed standards" DELETE,
REPLACE WITH:
"not-to-exceed limits"

* * * * *

(e) "not-to-exceed (NTE) standards" DELETE,

REPLACE WITH:

"not-to-exceed (NTE) limits"

* * * * *

(e)(2) "section, the NTE standard" DELETE,

REPLACE WITH:

"section, the NTE limit"

* * * * *

(e)(2) "equation: NTE standard" DELETE,

REPLACE WITH:

"equation: NTE limit"

* * * * *

(e)(6) "NTE standards" DELETE,

REPLACE WITH:

"NTE limits"

* * * * *

(e)(7) "NTE standard" DELETE,

REPLACE WITH:

"NTE limit"

* * * * *

(h) "The NTE standards of" DELETE,

REPLACE WITH:

"The NTE limits of"

* * * * *

(h) "meet the NTE standards" DELETE,

REPLACE WITH:

"meet the NTE limits"

* * * * *

§ 1039.102 What exhaust emission standards and phase-in allowances apply for my engines in model year 2014 and earlier?

Introductory Text DELETE,

REPLACE WITH:

The exhaust emission standards of this section apply for 2014 and earlier model years. See §1039.101 for exhaust emission standards that apply to later model years. See Title 13, CCR, §2423(b)(1)(A), for exhaust emission standards that apply to model years before the standards of this part 1039 take effect.

* * * * *

(a)(2) DELETE,

REPLACE WITH:

The transient standards in this section for gaseous pollutants do not apply to phase-out engines that you certify to the same numerical standards (and FELs if the engines are certified using ABT) for gaseous pollutants as certified under the Tier 3 requirements of Title 13, CCR, § 2423(b)(1)(A). However, except as specified by paragraph (a)(1) of this section, the transient PM emission standards apply to these engines.

* * * * *

Table 1 Footnote [1] DELETE,

REPLACE WITH:

For engines that qualify for the special provisions in § 1039.101(c), you may delay certifying to the standards in this part 1039 until 2010. In 2009 and earlier model years, these engines must instead meet the applicable Tier 2 standards and other requirements of Title 13, CCR, § 2423(b)(1)(A). Starting in 2010, these engines must meet a PM standard of 0.60 g/kW-hr, as described in § 1039.101(c). Engines certified to the 0.60 g/kWhr PM standard may not generate ABT credits.

* * * * *

Table 3 Footnote [1] DELETE,

REPLACE WITH:

You may certify engines to the Option #1 or Option #2 standards starting in the listed model year. Under Option #1, all engines at or above 37 kW and below 56 kW produced before the 2013 model year must meet the applicable Option #1 standards in this table. These engines are considered to be "Option #1 engines." Under Option #2, all these engines produced before the 2012 model year must meet the applicable standards under Title 13, CCR, § 2423(b)(1)(A). Engines certified to the Option #2 standards in model year 2012 are considered to be "Option #2 engines."

* * * * *

(d)(1) DELETE,

REPLACE WITH:

For model years 2012 through 2014, you may use banked NOx+NMHC credits from any Tier 2 engine at or above 37 kW certified under Title 13, CCR, § 2423(b)(1)(A) to meet the NOx phase-in standards or the NOx+NMHC phase-out standards under paragraphs (b) and (c) of this section, subject to the additional ABT provisions in § 1039.740.

* * * * *

(g)(1) "(1) NTE standards." DELETE,

REPLACE WITH:

"(1) NTE limits."

* * * * *

(g)(1) "calculate and apply the NTE standards" DELETE,

REPLACE WITH:

"calculate and apply the NTE limits."

* * * * *

(g)(1) "The NTE standards do not" DELETE,

REPLACE WITH:

"The NTE limits do not."

* * * * *

(g)(1)(iii) "the NTE standards" DELETE,

REPLACE WITH:

"the NTE limits"

* * * * *

(g)(1)(iv) DELETE,

REPLACE WITH:

Gaseous pollutants for phase-out engines that you certify to the same numerical standards and FELs for gaseous pollutants to which you certified under the Tier 3 requirements of Title 13, CCR, § 2423(b)(1)(A). However, the NTE limits for PM apply to these engines.

* * * * *

Table 8 Footnote [3] DELETE,

REPLACE WITH:

For manufacturers certifying engines to the standards of this part 1039 in 2012 under Option #2 of Table 3 of § 1039.102, the FEL caps of § 1039.101 apply for model year 2012 and later; see Title 13, CCR, § 2423(b)(1)(A) for provisions that apply to earlier model years.

* * * * *

§ 1039.104 Are there interim provisions that apply only for a limited time?

* * * * *

(a)(4)(iii) DELETE,

REPLACE WITH:

All other offset-using engines must meet the standards and other provisions that apply in model year 2011 for engines in the 19 ≤ kW < 130 power categories, in model year 2010 for engines in the 130 ≤ kW ≤ 560 power category, or in model year 2014 for engines above 560 kW. Show that engines meet these emission standards by meeting all the requirements of § 1068.265. You must meet the labeling requirements in Title 13, CCR, § 2424, but use the following in place of the otherwise required statement

of compliance in § 2424(c)(2): "THIS ENGINE MEETS CALIFORNIA EMISSION STANDARDS UNDER 13 CCR 2423(b)(6)." The referencing of similar federal requirements in combination with California references under this provision is permitted. For power categories with a percentage phase-in, these engines should be treated as phase-in engines for purposes of determining compliance with phase-in requirements.

* * * * *

(c)(1) Table DELETE "The standards and requirements in 40 CFR part 89",

REPLACE WITH:

The standards and requirements in Title 13, CCR, § 2423(b)(1)(A)

* * * * *

(c)(2)(ii) DELETE,

REPLACE WITH:

If you do not choose to comply with paragraph (c)(2)(i) of this section, you may continue to comply with the standards and requirements in Title 13, CCR, § 2423(b)(1)(A) and the 2000 Plus Limited Test Procedures for model years through 2012, but you must begin complying in 2013 with Tier 4 standards and requirements specified in Table 3 of § 1039.102 for model years 2013 and later.

* * * * *

(c)(4)(i) DELETE,

REPLACE WITH:

Produce engines that meet all the emission standards and other requirements under Title 13, CCR, § 2423(b)(1)(A) and the 2000 Plus Limited Test Procedures applicable for that model year, except as noted in this paragraph (c).

(c)(4)(ii) DELETE,

REPLACE WITH:

Meet the labeling requirements in Title 13, CCR, § 2424, but use the following in place of the otherwise required statement of compliance in § 2424(c)(2): "THIS ENGINE COMPLIES WITH CALIFORNIA REGULATIONS FOR [CURRENT MODEL YEAR] OFF-ROAD COMPRESSION-IGNITION ENGINES UNDER 13 CCR 2423(b)(7).". The referencing of similar federal requirements in combination with California references under this provision is permitted.

* * * * *

(c)(5)(ii) DELETE,

REPLACE WITH:

Meet the labeling requirements in Title 13, § 2424, but use the following in place of the otherwise required statement of compliance in § 2424(c)(3): "THIS ENGINE COMPLIES WITH CALIFORNIA REGULATIONS FOR [CURRENT MODEL YEAR] OFF-ROAD COMPRESSION-IGNITION ENGINES UNDER 13 CCR 2423(b)(7).". The referencing of similar federal requirements in combination with California references under this provision is permitted.

* * * * *

(d) "Deficiencies for NTE standards." DELETE,

REPLACE WITH:

"Deficiencies for NTE limits."

* * * * *

(d) "applicable NTE standards" DELETE,

REPLACE WITH:

"applicable NTE limits."

* * * * *

(d) "from the NTE standards" DELETE,

REPLACE WITH:

"from the NTE limits."

* * * * *

(d) "with the NTE standards" DELETE,

REPACE WITH:

"with the NTE limits."

* * * * *

(d)(4) "which NTE standards" DELETE,

REPLACE WITH:

"which NTE limits."

* * * * *

(g)(4) DELETE,

REPLACE WITH:

Do not apply TCAFs to gaseous emissions for phase-out engines that you certify to the same numerical standards (and FELs if the engines are certified using ABT) for gaseous pollutants as you certified under the Tier 3 requirements of Title 13, CCR, § 2423(b)(1)(A) and § 2423(b)(2)(A).

* * * * *

§ 1039.105 What smoke standards must my engines meet?

* * * * *

§ 1039.107 What evaporative emission standards and requirements apply?

* * * * *

§ 1039.110 [Reserved]

* * * * *

§ 1039.115 What other requirements must my engines meet?

* * * * *

§ 1039.120 What emission-related warranty requirements apply to me?

* * * * *

(c) DELETE,

REPLACE WITH:

Components covered. The emission-related warranty covers all components whose failure would increase an engine's emissions of any pollutant. This includes components listed in Title 13, CCR, § 2425(d), and components from any other system developed to control emissions. The emission-related warranty covers these components even if another company produces the component. Your emission-related warranty does not cover components whose failure would not increase an engine's emissions of any pollutant.

* * * * *

§ 1039.125 What maintenance instructions must I give to buyers?

* * * * *

§ 1039.130 What installation instructions must I give to equipment manufacturers?

* * * * *

§ 1039.135 How must I label and identify the engines I produce?

* * * * *

(c)(12) DELETE,

REPLACE WITH:

State: "THIS ENGINE COMPLIES WITH CALIFORNIA REGULATIONS FOR [MODEL YEAR] OFF-ROAD DIESEL ENGINES.". The referencing of similar federal requirements in combination with California references under this provision is permitted.

* * * * *

ADD:

(h) Labeling requirements for rebuilt engines. The provisions in the California Code of Regulations, Title 13, Section 2423(l), shall apply for labeling rebuilt engines.

§ 1039.140 What is my engine's maximum engine power?

* * * * *

Subpart C – Certifying Engine Families

§ 1039.201 What are the general requirements for obtaining an Executive Order?

* * * * *

§ 1039.205 What must I include in my application?

* * * * *

(p) "not-to-exceed emission standards" DELETE,

REPLACE WITH:

"not-to-exceed emission limits"

* * * * *

(w) DELETE,

REPLACE WITH:

Unconditionally certify that all the engines in the engine family comply with the requirements of this part, other referenced parts of the California Code of Regulations and the California Health and Safety Code.

* * * * *

§ 1039.210 May I get preliminary approval before I complete my application?

* * * * *

§ 1039.220 How do I amend the maintenance instructions in my application?

* * * * *

§ 1039.225 How do I amend my application for certification to include new or modified engines or to change an FEL?

* * * * *

§ 1039.230 How do I select engine families?

* * * * *

§ 1039.235 What emission testing must I perform for my application for an Executive Order?

Introductory Text: DELETE, "NTE standards"

REPLACE WITH:

"NTE limits"

* * * * *

§ 1039.240 How do I demonstrate that my engine family complies with exhaust emission standards?

* * * * *

§ 1039.245 How do I determine deterioration factors from exhaust durability testing?

* * * * *

(a) DELETE,

REPLACE WITH:

An engine manufacturer may request the Executive Officer to approve deterioration factors for an engine family with established technology based on engineering analysis instead of testing. Engines certified to a NOx+NMHC standard or FEL greater than the Tier 3 NOx+NMHC standard described in Title 13, CCR, § 2423(b)(1)(A) are considered to rely on established technology for gaseous emission control, except that this does not include any engines that use exhaust-gas recirculation or aftertreatment. In most cases, technologies used to meet the Tier 1 and Tier 2 emission standards would be considered to be established technology.

* * * * *

§ 1039.250 What records must I keep and what reports must I send to the Air Resources Board (ARB)?

* * * * *

§ 1039.255 What decisions may ARB make regarding my Executive Order?

* * * * *

Subpart D – [Reserved]

Subpart E – In-use Testing

§ 1039.401 General Provisions.

* * * * *

Subpart F – Test Procedures

§ 1039.501 How do I run a valid emission test?

* * * * *

(b) "not-to-exceed emission standards" DELETE,

REPLACE WITH:

"not-to-exceed emission limits"

* * * * *

§ 1039.505 How do I test engines using steady-state duty cycles, including ramped-modal testing?

* * * * *

§ 1039.510 Which duty cycles do I use for transient testing?

* * * * *

§ 1039.515 What are the test procedures related to not-to-exceed limits?

* * * * *

(a) "not-to-exceed emission standards" DELETE,

REPLACE WITH:

"not-to-exceed emission limits"

* * * * *

§ 1039.520 What testing must I perform to establish deterioration factors?

* * * * *

§ 1039.525 How do I adjust emission levels to account for infrequently regenerating aftertreatment devices?

* * * * *

Subpart G – Special Compliance Provisions

§ 1039.601 What compliance provisions apply to these engines?

* * * * *

§ 1039.605 What provisions apply to engines already certified under the motor-vehicle program?

DELETE.

§ 1039.610 What provisions apply to vehicles already certified under the motor-vehicle program?

DELETE.

§ 1039.615 What special provisions apply to engines using noncommercial fuels?

* * * * *

(b)(2)(ii) DELETE,

REPLACE WITH:

State: "THIS ENGINE IS CERTIFIED TO OPERATE IN APPLICATIONS USING NONCOMMERCIAL FUEL. MALADJUSTMENT OF THE ENGINE IS A VIOLATION OF CALIFORNIA LAW SUBJECT TO CIVIL PENALTY.". The referencing of similar federal requirements in combination with California references under this provision is permitted.

* * * * *

§ 1039.620 What are the provisions for exempting engines used solely for competition?

* * * * *

§ 1039.625 What requirements apply under the program for equipment-manufacturer flexibility?

Introductory Text DELETE,

REPLACE WITH:

The provisions of this section allow equipment manufacturers to produce equipment with engines that are subject to less stringent emission standards after the Tier 4 emission standards begin to apply. To be eligible to use these provisions, you must follow all the instructions in this section. See Title 13, CCR, §§ 2423(d) and (e) for provisions that apply to equipment produced while Tier 1, Tier 2, or Tier 3 standards apply. See § 1039.626 for requirements that apply specifically to companies that manufacture equipment outside the United States and to companies that import such equipment without manufacturing it.

* * * * *

(b)(1) DELETE,

REPLACE WITH:

Percent-of-production allowances. A manufacturer may produce equipment and vehicles with engines that are exempt from meeting current model year emission standards for a portion of its California-directed production volume. These percent-of-production flexibility allowances must be used within one of the seven-year flexibility usage periods specified in Table 1 or Table 2 of this section for each applicable power category, provided that the seven-year sum of the U.S.-directed portion of the manufacturer's percent-of-production flexibility allowances does not

exceed 80 percent, expressed in cumulative yearly percentage increments, except as provided for in paragraph (b)(2) or (m) of this section. Equipment claimed as percent-of-production flexibility allowances must contain only engines that have been certified to, at least, the standards in paragraph (e), corresponding to the flexibility usage period selected by the manufacturer. All flexibility allowances for a power category must be used within the same flexibility usage period.

(b)(2) DELETE,

REPLACE WITH:

Small-volume allowances. As an alternative to the percent-of-production allowance in paragraph (b)(1), an off-road equipment or vehicle manufacturer may produce equipment with engines that are exempt from meeting current model year emission standards for a portion of its California-directed production volume, provided that the exempt equipment is a subset of the manufacturer's U.S.-directed volume of exempt equipment and the manufacturer is in compliance with the following provisions:

* * * * *

(d)(4) DELETE,

REPLACE WITH:

Manufacturers may start using a portion of the flexibility allowances in paragraphs (b)(1) or (b)(2) of this section for equipment and vehicles containing engines not yet subject to the Tier 4 standards, provided that the seven-year period for using flexibility allowances under the Tier 2/3 flexibility program in Title 13, CCR, §§ 2423(d)(1)(a), (d)(1)(b), or (d)(2)(a) has expired. Manufacturers must count these early-use flexibility allowances toward the total percentage, or number, of flexibility allowances permitted under the provisions of paragraphs (b)(1) or (b)(2) of this section. The maximum cumulative early-use allowance is 10 percent under the percent-of-production provision in paragraph (b)(1), or 100 units under the small volume provision in paragraph (b)(2). Table 3 shows the applicable years for using early-use flexibility allowances. Manufacturers using allowances under this paragraph (d)(4) must comply with the notification and reporting requirements specified in paragraph (g) of this section. Table 3 follows:

* * * * *

(e)(1) DELETE,

REPLACE WITH:

Equipment manufacturers using the provisions of paragraph (d)(4) of this section, must use engines that, at a minimum, meet the applicable Tier 1 emission standards in Title 13, CCR, § 2423(b)(1)(a).

* * * * *

(e)(3) DELETE,

REPLACE WITH:

In all other cases, engines at or above 56 kW and at or below 560 kW must meet the appropriate Tier 3 standards described in Title 13, CCR, § 2423(b)(1)(a). Engines below 56 kW and engines above 560 kW must meet the appropriate Tier 2 standards described in Title 13, CCR, § 2423(b)(1)(a).

* * * * *

(f)(5) DELETE,

REPLACE WITH:

The following statement: THIS EQUIPMENT [or identify the type of equipment] HAS AN ENGINE THAT MEETS CALIFORNIA EMISSION STANDARDS UNDER 13 CCR 2423(d).

* * * * *

(g)(1)(vi) DELETE,

REPLACE WITH:

The number of units in each power category that the equipment manufacturer has sold in previous calendar years under 40 CFR 89.102(d) and, if available, Title 13, CCR, § 2423(d).

(g)(2) DELETE,

REPLACE WITH:

For each year that an equipment manufacturer uses the provisions of this section, the manufacturer must send the Executive Officer a written report by March 31 of the following year. The report shall include the total number of engines sold by the manufacturer in the preceding year for each power category, based on actual U.S.-directed production volume and, if available, California-directed production volume. Also, the manufacturer must identify the percentages of U.S.-directed production volumes and, if available, California-directed production volumes, that correspond to the number of units in each power category and the cumulative numbers and percentages of units for all the units sold by the manufacturer under this section for each power category. The percentage figures may be omitted if the manufacturer states in the report that it will not be using the percent-of-production allowances in paragraph (b)(1) of this section.

* * * * *

(i) DELETE,

REPLACE WITH:

Enforcement. Producing more equipment with engines exempted from meeting current-model year emission requirements under this section or installing engines that do not meet the emission standards of paragraph (e) of this section violates the requirements of Title 13, CCR, § 2423(d) and may be subject to civil penalties under California Health and Safety Code, Division 26, and corresponding regulations. Equipment manufacturers must, upon request, surrender to the Executive Officer all records required under this section.

(j) DELETE,

REPLACE WITH:

(1) Provisions for engine manufacturers. To meet the demand for engines created under this section, engine manufacturers may produce engines that do not meet current model year emission requirements. However, engine manufacturers must receive written assurance from each equipment manufacturer, prior to production, that a certain number of these engines are needed for the equipment manufacturer's equipment flexibility allowances. Engine manufacturers shall provide to the Executive Officer annually, as part of the certification application, a list of the equipment manufacturers requesting such engines for their flexibility allowances. The list shall include the equipment manufacturers' names, engine models, and estimated national production volumes. A copy of the original correspondence from the equipment manufacturer requesting the production of flexibility engines shall be kept on file by the engine manufacturer in addition to, and in accordance with, the provisions of § 1039.250, and shall be made available without delay to the Executive Officer upon request. Furthermore, all engines produced for sale in California under the provisions of this section must be covered by an Executive Order. To obtain an Executive Order for these engines, the engine manufacturer shall comply with the following:

(A) Prior to the start of production, submit a letter to the Chief of the Mobile Source Operations Division, or designee, requesting certification for flexibility engines intended for sale in California, and

(B) Provide written assurance that the flexibility engines to be produced will be identical in all material respects to those for which a valid Executive Order has been issued in a previous model year. The engine family name of the previously certified engine family must be included in the manufacturer's request for certification.

Upon determination that the conditions in paragraphs (1) and (2) have been satisfied, the engine manufacturer shall be provided with an Executive Order covering the requested flexibility engine families for the current model year. The engine family names included in the Executive Order shall either be the same as, or a subset of the previously certified engine family names, and will remain the same for as long as the engines continue to qualify as flexibility allowances regardless of model year. These engine family names shall be used by the engine manufacturer to comply with the labeling requirements of paragraph (2) below.

(2) Engine labeling. Engine manufacturers shall meet the labeling requirements provided in § 1039.135 for all engines produced under the allowances of this section. However, the following statement must be substituted for the statement of compliance required under § 1039.135:

"THIS ENGINE COMPLIES WITH CALIFORNIA EMISSION REQUIREMENTS UNDER 13 CCR 2423(d). SELLING OR INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER THAN FOR THE EQUIPMENT FLEXIBILITY PROVISIONS CITED MAY BE A VIOLATION OF STATE LAW SUBJECT TO CIVIL PENALTY." [Insert Engine Family Name]

The referencing of similar federal requirements in combination with California references under this provision is permitted. Furthermore, the Executive Officer may, upon request, approve alternate labeling specifications provided that they meet the intent of this requirement.

§ 1039.626 What special provisions apply to equipment imported under the equipment-manufacturer flexibility program?

* * * * *

(b)(1)(iv) DELETE,

REPLACE WITH:

The number of units in each power category imported by the foreign manufacturer in previous calendar years under 40 CFR 89.102(d) and Title 13, CCR, § 2423(d).

* * * * *

§ 1039.627 What are the incentives for equipment manufacturers to use cleaner engines?

* * * * *

§ 1039.630 What are the economic hardship provisions for equipment manufacturers?

Entire Section DELETE,

REPLACE WITH:

The provisions in Title 13, CCR, § 2423(f) shall apply.

§ 1039.635 What are the hardship provisions for engine manufacturers?

* * * * *

§ 1039.640 What special provisions apply to branded engines?

* * * * *

(a)(1) DELETE,

REPLACE WITH:

Meet the emission warranty requirements that apply under Title 13, CCR, § 2425. This may involve a separate agreement involving reimbursement of warranty-related expenses.

* * * * *

§ 1039.645 What special provisions apply to engines used for transportation refrigeration units?

* * * * *

(d)(1) DELETE,

REPLACE WITH:

State on the emission control information label: "THIS ENGINE IS CERTIFIED TO OPERATE ONLY IN TRANSPORTATION REFRIGERATION UNITS. INSTALLING OR USING THIS ENGINE IN ANY OTHER APPLICATION MAY BE A VIOLATION OF CALIFORNIA LAW SUBJECT TO CIVIL PENALTY.". The referencing of similar federal requirements in combination with California references under this provision is permitted.

* * * * *

(e) "comply with NTE standards" DELETE,

REPLACE WITH:

"comply with NTE limits."

* * * * *

(e) "that the NTE standards" DELETE,

REPLACE WITH:

"that the NTE limits."

* * * * *

(e) "the not-to-exceed standards" DELETE,

REPLACE WITH:

"the not-to-exceed limits."

* * * * *

(e) "subject to NTE standards" DELETE,

REPLACE WITH:

"subject to NTE limits."

* * * * *

(f)(2)(i) REPLACE "NTE emission standards" WITH "NTE emission limits"

* * * * *

§ 1039.650 [Reserved]

* * * * *

§ 1039.655 What special provisions apply to engines sold in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands?

DELETE.

§ 1039.660 What special provisions apply to Independent Commercial Importers?

* * * * *

Subpart H – Averaging, Banking, and Trading for Certification

§ 1039.701 General provisions.

* * * * *

§ 1039.705 How do I generate and calculate emission credits?

* * * * *

§ 1039.710 How do I average emission credits?

* * * * *

§ 1039.715 How do I bank emission credits?

* * * * *

§ 1039.720 How do I trade emission credits?

* * * * *

§ 1039.725 What must I include in my application for certification?

* * * * *

§ 1039.730 What ABT reports must I send to ARB?

* * * * *

§ 1039.735 What records must I keep?

* * * * *

§ 1039.740 What restrictions apply for using emission credits?

* * * * *

(b)(1) DELETE,

REPLACE WITH:

For purposes of ABT under this subpart, you may not use emission credits generated from engines subject to emission standards under 40 CFR part 89 or Title 13, CCR, § 2423(b)(1)(A), except as specified in § 1039.102(d)(1) or the following table:

* * * * *

Table Heading DELETE "And it was certified to the following standards under 40 CFR part 89",

REPLACE WITH:

And it was certified to the following standards under 40 CFR part 89 or 13 CCR 2423(b)(1)(A) ...

(b)(2) DELETE,

REPLACE WITH:

Emission credits generated from marine engines certified under the provisions of 40 CFR part 89 or Title 13, CCR, § 2423(b)(1)(A), may not be used under this part.

(b)(3) DELETE,

REPLACE WITH:

See 40 CFR part 89 or Title 13, CCR, § 2423 and the 2000 Plus Limited Test Procedures for other restrictions that may apply for using emission credits generated under that part.

* * * * *

§ 1039.745 What can happen if I do not comply with the provisions of this subpart?

* * * * *

Subpart I – Definitions and Other Reference Information

§ 1039.801 What definitions apply to this part?

ADD:

40 CFR part 1065 means Part 1065 and applicable subparts of these 2008 and Later Test Procedures when referenced in unrevised sections.

ADD:

40 CFR part 1068 means Part 1068 and applicable subparts of these 2008 and Later Test procedures when referenced in unrevised sections.

Act DELETE,

REPLACE WITH:

Act means California Health and Safety Code, Division 26, and corresponding regulations, except where the context indicates otherwise.

* * * * *

ADD:
Certificate of Conformity means an Executive Order issued in accordance with the California Health and Safety Code, Division 26, Part 5.

Certification DELETE,

REPLACE WITH:
Certification means obtaining an executive order for an engine family complying with the off-road compression-ignition engine emission standards and requirements specified in Title 13, CCR, Chapter 9, §§ 2420-2427.

* * * * *

ADD:
Certified configuration or certified emissions configuration means the assembled state of an engine that is equipped with a complete set of emission-related components and systems that are equivalent from an emissions standpoint (i.e., tolerances, calibrations, and specifications) to those components and systems that (A) were originally installed on the engine when it was issued an Executive Order, (B) have been approved by the engine manufacturer to supersede any of the original emission-related components and systems for that engine, or (C) are direct replacement parts equaling or exceeding the emissions-related performance of the original or superseded components and systems.

* * * * *

ADD:

Clean Air Act means California Health and Safety Code, Division 26, and corresponding regulations, except where the context indicates otherwise.

* * * * *

Designated Compliance Officer DELETE,

REPLACE WITH:

Designated Compliance Officer means the Executive Officer of the Air Resources Board (or the Executive Officer's designee).

Designated Enforcement Officer DELETE,

REPLACE WITH:

Designated Enforcement Officer means the Executive Officer of the Air Resources Board (or the Executive Officer's designee).

* * * * *

ADD:

EPA or U.S. EPA means Air Resources Board.

* * * * *

ADD:
Executive Order means an order issued by the Executive Officer of the Air Resources Board certifying engines for sale in California.

* * * * *

Nonroad DELETE,

REPLACE WITH:

Nonroad means relating to off-road engines or equipment that includes off-road engines.

* * * * *

Nonroad engine DELETE,

REPLACE WITH:

Nonroad engine means an off-road engine as defined in this section.

* * * * *

Nonroad equipment DELETE,

REPLACE WITH:

Nonroad equipment means a piece of equipment that is powered by one or more off-road engines.

* * * * *

ADD:
Off-road engine means:

(1) Except as discussed in paragraph (2) of this definition, any internal combustion engine:

(i) In or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function (such as garden tractors, off-highway mobile cranes, and bulldozers); or

(ii) In or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers); or

(iii) That, by itself or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.

(2) An internal combustion engine is not an off-road engine if:

(i) The engine is used to propel a vehicle subject to the emissions standards contained in Title 13, California Code of Regulations, Sections 1950-1978, or a vehicle used solely for competition, or is subject to standards promulgated under section 202 of the federal Clean Air Act (42 U.S.C; or

(ii) The engine is regulated by a federal New Source Performance Standard promulgated under section 111 of the 1990 Clean Air Act (42 U.S.C. 7511); or

(iii) The engine otherwise included in paragraph (1)(iii) of this definition remains or will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any site at a building, structure, facility, or installation. Any engine (or engines) that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period. An engine located at a seasonal source is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. A seasonal source is a stationary source that remains in a single location on a permanent basis (i.e., at least two years) and that operates at that single location approximately three months (or more) each year. This paragraph does not apply to an engine after the engine is removed from the location.

* * * * *

We (us, our) DELETE,

REPLACE WITH:

We (us, our) means the Executive Officer of the California Air Resources Board and any authorized representatives.

ADD:

ADDENDUM: The definitions in the California Health and Safety Code and in Title 13, CCR, § 2421, shall apply.

§ 1039.805 What symbols, acronyms, and abbreviations does this part use?

* * * * *

§ 1039.810 What materials does this part reference?

* * * * *

§ 1039.815 What provisions apply to confidential information?

DELETE,

REPLACE WITH:

Any manufacturer may assert that some or all of the information submitted pursuant to Title 13, CCR, Division 3, Chapter 9, Article 4 (Off-Road Compression-Ignition Engines and Equipment) is entitled to confidential treatment as provided by Title 17, CCR, §§ 91000-91022.

§ 1039.820 How do I request a hearing?

DELETE,

REPLACE WITH:

A manufacturer may request a hearing on an Executive Officer's decision regarding certification, as specified in Title 17, CCR, Division 3, Chapter 1, Subchapter 1.25, Articles 1 and 2.

Appendix I to Part 1039 – [Reserved]

* * * * *

Appendix II to Part 1039 – Steady-state Duty Cycles for Constant-Speed Engines

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Appendix III to Part 1039 – Steady-state Duty Cycles for Variable-Speed Engines with Maximum Power below 19 kW

* * * * *

Appendix IV to Part 1039 – Steady-state Duty Cycles for Variable-Speed Engines with Maximum Power at or above 19 kW

* * * * *

Appendix V to Part 1039 – [Reserved]

* * * * *

Appendix VI to Part 1039 – Nonroad Compression-Ignition Composite Transient Cycle

* * * * *

PART 1065 – ENGINE-TESTING PROCEDURES

Note: 40 CFR Part 1065, as modified by the July 13, 2005, Omnibus Technical Amendments, is for all intents and purposes a completely new document. Few of the original sections remain, but even those have different titles and content than originally designated. Therefore, to expedite the incorporation of the Omnibus Technical Amendments into Part 1065 of the 2008 and Later Test Procedures, the modified text identified will reference modifications to the Omnibus Technical Amendments rather than to staff's existing Part 1065 of the existing 2008 and Later Test Procedures. In effect, staff is proposing to incorporate the Omnibus Technical Amendments (70 FR 40516, July 13, 2005), as if it were a new document.

SOURCE: 70 FR 40516, July 13, 2005, unless otherwise noted.

Subpart A – Applicability and General Provisions

§ 1065.1 Applicability.

* * * * *

(a)(2) DELETE,

REPLACE WITH:

Land-based off-road compression-ignition engines regulated under Title 13, CCR, Chapter 9, Article 4, and subject to the emission standards in § 2423(b)(1)(B) of that Article.

* * * * *

(g) DELETE.

§ 1065.2 Submitting information to ARB under this part.

* * * * *

§ 1065.5 Overview of this part 1065 and its relationship to the standard-setting part.

* * * * *

§ 1065.10 Other procedures.

* * * * *

§ 1065.12 Approval of alternate procedures.

* * * * *

§ 1065.15 Overview of procedures for laboratory and field testing.

* * * * *

§ 1065.20 Units of measure and overview of calculations.

* * * * *

§ 1065.25 Recordkeeping.

* * * * *

Subpart B – Equipment Specifications

§ 1065.101 Overview.

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§ 1065.110 Work inputs and outputs, accessory work, and operator demand.

* * * * *

§ 1065.120 Fuel properties and fuel temperature and pressure.

* * * * *

§ 1065.122 Engine cooling and lubrication.

* * * * *

§ 1065.125 Engine intake air.

* * * * *

§ 1065.127 Exhaust gas recirculation.

* * * * *

§ 1065.130 Engine exhaust.

* * * * *

§ 1065.140 Dilution for gaseous and PM constituents.

* * * * *

§ 1065.145 Gaseous and PM probes, transfer lines, and sampling system components.

* * * * *

§ 1065.150 Continuous sampling.

* * * * *

§ 1065.170 Batch sampling for gaseous and PM constituents.

* * * * *

§ 1065.190 PM-stabilization and weighing environments for gravimetric analysis.

* * * * *

§ 1065.195 PM-stabilization environment for in-situ analyzers.

* * * * *

Subpart C – Measurement Instruments

§ 1065.201 Overview and general provisions.

* * * * *

§ 1065.202 Data updating, recording, and control.

* * * * *

§ 1065.205 Performance specifications for measurement instruments.

* * * * *

Measurement of Engine Parameters and Ambient Conditions

§ 1065.210 Work input and output sensors.

* * * * *

§ 1065.215 Pressure transducers, temperature sensors, and dewpoint sensors.

* * * * *

Flow-Related Measurements

§ 1065.220 Fuel flow meter.

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§ 1065.225 Intake-air flow meter.

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§ 1065.230 Raw exhaust flow meter.

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§ 1065.240 Dilution air and diluted exhaust flow meters.

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§ 1065.245 Sample flow meter for batch sampling.

* * * * *

§ 1065.248 Gas divider.

* * * * *

CO and CO_2 Measurements

§ 1065.250 Nondispersive infra-red analyzer.

* * * * *

Hydrocarbon Measurements

§ 1065.260 Flame-ionization detector.

* * * * *

§ 1065.265 Nonmethane cutter.

* * * * *

§ 1065.267 Gas chromatograph.

* * * * *

NO_x Measurements

§ 1065.270 Chemiluminescent detector.

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§ 1065.272 Nondispersive ultraviolet analyzer.

* * * * *

O_2 Measurements

§ 1065.280 Paramagnetic and magnetopneumatic O_2 detection analyzers.

* * * * *

Air-to-Fuel Ratio Measurements

§ 1065.284 Zirconia (ZrO_2) analyzer.

* * * * *

PM Measurements

§ 1065.290 PM gravimetric balance.

* * * * *

§ 1065.295 PM inertial balance for field testing analysis.

* * * * *

Subpart D – Calibrations and Verifications

§ 1065.301 Overview and general provisions.

* * * * *

§ 1065.303 Summary of required calibration and verifications.

* * * * *

§ 1065.305 Verifications for accuracy, repeatability, and noise.

* * * * *

§ 1065.307 Linearity verification.

* * * * *

§ 1065.308 Continuous gas analyzer system-response and updating-recording verification.

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§ 1065.309 Continuous gas analyzer uniform response verification.

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Measurement of Engine Parameters and Ambient Conditions

§ 1065.310 Torque calibration.

* * * * *

§ 1065.315 Pressure, temperature, and dewpoint calibration.

* * * * *

Flow-Related Measurements

§ 1065.320 Fuel-flow calibration.

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§ 1065.325 Intake-flow calibration.

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§ 1065.330 Exhaust-flow calibration.

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§ 1065.340 Diluted exhaust flow (CVS) calibration.

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§ 1065.341 CVS and batch sampler verification (propane check).

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§ 1065.345 Vacuum-side leak verification.

* * * * *

CO and CO_2 Measurements

§ 1065.350 H_2O interference verification for CO_2 NDIR analyzers.

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§ 1065.355 H_2O and CO_2 interference verification for CO NDIR analyzers.

* * * * *

Hydrocarbon Measurements

§ 1065.360 FID optimization and verification.

* * * * *

§ 1065.362 Non-stoichiometric raw exhaust FID O_2 interference verification.

* * * * *

§ 1065.365 Nonmethane cutter penetration fractions.

* * * * *

NO_x Measurements

§ 1065.370 CLD CO_2 and H_2O quench verification.

* * * * *

§ 1065.372 NDUV analyzer HC and H_2O interference verification.

* * * * *

§ 1065.376 Chiller NO_2 penetration.

* * * * *

§ 1065.378 NO_2-to-NO converter conversion verification.

* * * * *

PM Measurements

§ 1065.390 PM balance verifications and weighing process verification.

* * * * *

§ 1065.395 Inertial PM balance verifications.

* * * * *

Subpart E – Engine Selection, Preparation, and Maintenance

§ 1065.401 Test engine selection.

* * * * *

§ 1065.405 Test engine preparation and maintenance.

* * * * *

§ 1065.410 Maintenance limits for stabilized test engines.

* * * * *

§ 1065.415 Durability demonstration.

* * * * *

Subpart F – Performing an Emission Test in the Laboratory

§ 1065.501 Overview.

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§ 1065.510 Engine mapping.

* * * * *

§ 1065.512 Duty cycle generation.

* * * * *

§ 1065.514 Cycle-validation criteria.

* * * * *

§ 1065.520 Pre-test verification procedures and pre-test data collection.

* * * * *

§ 1065.525 Engine starting, restarting, and shutdown.

* * * * *

§ 1065.530 Emission test sequence.

* * * * *

§ 1065.545 Validation of proportional flow control for batch sampling.

* * * * *

§ 1065.550 Gas analyzer range validation, drift validation, and drift correction.

* * * * *

§ 1065.590 PM sample preconditioning and tare weighing.

* * * * *

§ 1065.595 PM sample post-conditioning and total weighing.

* * * * *

Subpart G – Calculations and Data Requirements

§ 1065.601 Overview.

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§ 1065.602 Statistics.

* * * * *

§ 1065.610 Duty cycle generation.

* * * * *

§ 1065.630 1980 international gravity formula.

* * * * *

§ 1065.640 Flow meter calibration calculations.

* * * * *

§ 1065.642 SSV, CFV, and PDP molar flow rate calculations.

* * * * *

§ 1065.645 Amount of water in an ideal gas.

* * * * *

§ 1065.650 Emission calculations.

* * * * *

§ 1065.655 Chemical balances of fuel, intake air, and exhaust.

* * * * *

§ 1065.659 Removed water correction.

* * * * *

§ 1065.660 THC and NMHC determination.

* * * * *

§ 1065.665 THCE and NMHCE determination.

* * * * *

§ 1065.667 Dilution air background emission correction.

* * * * *

§ 1065.670 NO_x intake-air humidity and temperature corrections.

* * * * *

§ 1065.672 Drift correction.

* * * * *

§ 1065.675 CLD quench verification calculations.

* * * * *

§ 1065.690 Buoyancy correction for PM sample media.

* * * * *

§ 1065.695 Data requirements.

* * * * *

Subpart H – Engine Fluids, Test Fuels, Analytical Gases and Other Calibration Standards

§ 1065.701 General requirements for test fuels.

* * * * *

(b) DELETE,

REPLACE WITH:

With Executive Officer approval, the certifying entity may use other test fuels so long as they do not affect the demonstration of compliance.

* * * * *

§ 1065.703 Distillate diesel fuel.

* * * * *

ADD:

(d) The Executive Officer may allow other fuel specifications, such as California diesel fuel, so long as they do not affect the demonstration of compliance.

§ 1065.705 Residual fuel [Reserved].

* * * * *

§ 1065.710 Gasoline.

* * * * *

§ 1065.715 Natural gas.

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§ 1065.720 Liquefied petroleum gas.

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§ 1065.740 Lubricants.

* * * * *

§ 1065.745 Coolants.

* * * * *

§ 1065.750 Analytical gases.

* * * * *

§ 1065.790 Mass standards.

* * * * *

Subpart I – Testing with Oxygenated Fuels

§ 1065.801 Applicability.

* * * * *

§ 1065.805 Sampling system.

* * * * *

§ 1065.845 Response factor determination.

* * * * *

§ 1065.850 Calculations.

* * * * *

Subpart J – Field Testing and Portable Emission Measurement Systems

DELETE.

Subpart K – Definitions and Other Reference Information

§ 1065.1001 Definitions.

ADD:

The definitions in 40 CFR 1039.801, as modified, apply with the following revisions.

ADD:

40 CFR part 1039 means Part 1039 and applicable subparts of these 2008 and Later Test procedures when referenced in unrevised sections.

40 CFR part 1068 means Part 1068 and applicable subparts of these 2008 and Later Test procedures when referenced in unrevised sections.

* * * * *

Designated Officer DELETE,

REPLACE WITH:

Designated Compliance Officer means the Executive Officer of the Air Resources Board, or a designee of the Executive Officer.

* * * * *

§ 1065.1005 Symbols, abbreviations, acronyms, and units of measure.

* * * * *

§ 1065.1010 Reference materials.

* * * * *

PART 1068 – GENERAL COMPLIANCE PROVISIONS FOR OFF-ROAD PROGRAMS

SOURCE: 67 FR 68427, November 8, 2002, amended July 13, 2005, unless otherwise noted.

Subpart A – Applicability and Miscellaneous Provisions

§ 1068.1 Does this part apply to me?

* * * * *

(a)(3) DELETE,

REPLACE WITH:

Land-based off-road compression-ignition engines regulated under Title 13, CCR, Chapter 9, Article 4, and subject to the emission standards in § 2423(b)(1)(B) of that Article.

* * * * *

(b)(5) DELETE,

REPLACE WITH:

Off-road compression-ignition engines regulated under Title 13, CCR, Chapter 9, Article 4, and subject to the emission standards in § 2423(b)(1)(A) of that Article.

* * * * *

§ 1068.5 How must manufacturers apply good engineering judgment?

* * * * *

§ 1068.10 What provisions apply to confidential information?

DELETE,

REPLACE WITH:

Any manufacturer may assert that some or all of the information submitted pursuant to Title 13, CCR, Division 3, Chapter 9, Article 4 (Off-Road Compression-Ignition Engines and Equipment) is entitled to confidential treatment as provided by Title 17, CCR, §§ 91000-91022.

§ 1068.15 Who is authorized to represent the Air Resources Board?

* * * * *

§ 1068.20 May ARB enter my facilities for inspections?

DELETE,
REPLACE WITH:

(a) Any engine manufacturer affected by these regulations, upon receipt of prior notice must admit or cause to be admitted during operating hours any ARB Enforcement Officer that has presented proper credentials to any of the following:

(1) Any facility where tests or procedures or activities connected with such tests or procedures are or were performed.

(2) Any facility where any new off-road compression-ignition engine is present and is being, has been, or will be tested.

(3) Any facility where a manufacturer constructs, assembles, modifies, or builds-up an engine into a certification engine that will be tested for certification.

(4) Any facility where any record or other document relating to any of the above is located.

(b) Upon admission to any facility referred to in paragraph (c)(1) of this Section, any ARB Enforcement Officer must be allowed:

(1) To inspect and monitor any part or aspect of such procedures, activities, and testing facilities, including, but not limited to, monitoring engine preconditioning, emissions tests and break-in, maintenance, and engine storage procedures.

(2) To verify correlation or calibration of test equipment; and,

(3) To inspect and make copies of any such records, designs, or other documents; and,

(4) To inspect and/or photograph any part or aspect of any such certification engine and any components to be used in the construction thereof.

(c) To permit an ARB determination whether production off-road compression-ignition engines conform in all material respects to the design specifications that apply to those engines described in the Executive Order certifying such engines and to standards prescribed herein. Engine manufacturers must, upon receipt of prior notice, admit any ARB Enforcement Officer, upon presentation of credentials, to:

(1) Any facility where any document design, or procedure relating to the translation of the design and construction of engines and emission related components described in the application for certification or used for certification testing into production engines is located or carried on; and,

(2) Any facility where any off-road compression-ignition engines to be introduced into commerce are manufactured or assembled.

(3) Any California retail outlet where any off-road compression-ignition engine is sold.

(d) On admission to any such facility referred to in this Section, any ARB Enforcement Officer must be allowed:

(1) To inspect and monitor any aspects of such manufacture or assembly and other procedures;

(2) To inspect and make copies of any such records, documents or designs; and,

(3) To inspect and photograph any part or aspect of any such new off-road compression-ignition engines and any component used in the assembly thereof that are reasonably related to the purpose of the Enforcement Officer's entry.

(e) Any ARB Enforcement Officer must be furnished by those in charge of a facility being inspected with such reasonable assistance as may be necessary to discharge any function listed in this paragraph. Each applicant for or recipient of certification is required to cause those in charge of a facility operated for its benefit to furnish such reasonable assistance without charge to the ARB irrespective of whether or not the applicant controls the facility.

(f) The duty to admit or cause to be admitted any ARB Enforcement Officer applies whether or not the applicant owns or controls the facility in question and applies both to domestic and foreign engine manufacturers and facilities. The ARB will not attempt to make any inspections that it has been informed that local law forbids. However, if local law makes it impossible to insure the accuracy of data generated at a facility, no informed judgment that an engine is certifiable or is covered by an Executive Order can properly be based on the data. It is the responsibility of the engine manufacturer to locate its testing and manufacturing facilities in jurisdictions where this situation will not arise.

(g) For purposes of this Section:

(1) "Presentation of credentials" means a display of a document designating a person to be an ARB Enforcement Officer.

(2) Where engine, component, or engine storage areas or facilities are concerned, "operating hours" means all times during which personnel are at work in the vicinity of the area or facility and have access to it.

(3) Where facilities or areas other than those covered by paragraph (g)(2) of this Section are concerned, "operating hours" means all times during which an assembly line is in operation or during which testing, maintenance, break-in procedure, production or compilation of records, or any other procedure or activity is being conducted related to certification testing, translation of designs from the test stage to the production stage, or engine manufacture or assembly.

(4) "Reasonable assistance" includes, but is not limited to, providing clerical, copying, interpretation and translation services; making personnel available upon request to inform the ARB Enforcement Officer of how the facility operates and to answer questions; and performing requested emissions tests on any engine that is being, has been, or will be used for certification testing. Such tests must be nondestructive, but may require appropriate break-in. The engine manufacturer must be compelled to cause the personal appearance of any employee at such a facility before an ARB Enforcement Officer, upon written request from the Executive Officer for the appearance of any employee of a facility, and service of such request upon the engine manufacturer. Any such employee who has been instructed by the engine manufacturer to appear will be entitled to be accompanied, represented, and advised by counsel.

§ 1068.25 What information must I give to ARB?

* * * * *

(b) DELETE,

REPLACE WITH:

Manufacturers subject to the requirements of this part must establish and maintain records, perform tests, make reports and provide additional information that the Executive Officer may reasonably require under the California Health and Safety Code, Division 26, and corresponding regulations. This also applies to engines that are exempt from emission standards.

§ 1068.27 May ARB conduct testing with my production engines?

* * * * *

§ 1068.30 What definitions apply to this part?

ADD:

The definitions in 40 CFR 1039.801 and 1065.1001, as modified, apply with the following revisions:

ADD:

40 CFR part 1039 means Part 1039 and applicable subparts contained in these 2008 and Later Test procedures when referenced in unrevised sections.

ADD:

40 CFR part 1068 means Part 1068 and applicable subparts contained in these 2008 and Later Test procedures when referenced in unrevised sections.

* * * * *

ADD:

Administrator means the Executive Officer of the Air Resources Board, or a designee of the Executive Officer.

* * * * *

Certificate holder DELETE,

REPLACE WITH:

Certificate holder means a manufacturer (including importers) with a valid Executive Order for at least one engine family in a given model year.

ADD:

Certified configuration or certified emissions configuration means the assembled state of an engine that is equipped with a complete set of emission-related components and systems that are equivalent from an emissions standpoint (i.e., tolerances, calibrations, and specifications) to those components and systems that (A) were originally installed on the engine when it was issued an Executive Order, (B) have been approved by the engine manufacturer to supersede any of the original emission-related components and systems for that engine, or (C) are direct replacement parts equaling or exceeding the emissions-related performance of the original or superseded components and systems.

* * * * *

ADD:
EPA Delegation Manual means documents explaining the procedures for delegation within the Air Resources Board.

* * * * *

Standard-setting part DELETE,

REPLACE WITH:

Standard-setting part means the articles of the California Code of Regulations that define emission standards for a particular engine.

* * * * *

§ 1068.35 What symbols, acronyms, and abbreviations does this part use?

* * * * *

Subpart B – Prohibited Actions and Related Requirements

§ 1068.101 What general actions does this regulation prohibit?

* * * * *

(a) DELETE,

REPLACE WITH:

The following prohibitions and requirements apply to manufacturers of new engines and manufacturers of equipment containing these engines, except as described in subparts C and D of this part:

(1) Introduction into commerce. New engines and equipment may not be sold, offered for sale, or introduced or delivered into commerce in California or imported into California unless it has a valid Executive Order for its model year and the required label or tag. The actions listed in the previous sentence may not be taken with respect to any equipment containing an engine subject to this part's provisions, unless the engine has a valid and appropriate Executive Order and the required engine label or tag. For purposes of this paragraph (a)(1), an appropriate Executive Order is one that applies for the same model year as the model year of the equipment (except as allowed by § 1068.105(a)), covers the appropriate category of engines, and conforms to all requirements specified for the equipment in the standard-setting part. The requirements of this paragraph (a)(1) also cover new engines that are produced solely to replace an older engine in a piece of equipment, unless the engine qualifies for the replacement-engine exemption in § 1068.240. Civil penalties my be assessed for each engine in violation under the requirements of the California Health and Safety Code, Division 26, and corresponding regulations.

(2) Reporting and recordkeeping. Manufacturers are required to record certain types of information to show that their engines are meeting California's standards. Manufacturers must comply with these requirements to make and maintain required records (including those described in § 1068.501), and may not deny ARB access to these records or the ability to copy these records for which ARB has the authority to

examine upon request. The required reports and information must be provided to the ARB upon request without delay. Failure to comply with the requirements of this paragraph is prohibited. A violation of the requirements of this subpart is a violation of the applicable provisions of the California Health and Safety Code, Division 26, and corresponding regulations, and is subject to the penalty provisions thereunder.

(3) Testing and access to facilities. Manufacturers may not prevent ARB or its delegated agents from entering the manufacturer's facility to inspect and/or perform authorized testing. Manufacturers must perform the tests we require (or have the tests performed by an outside source). Failure to perform this testing is prohibited. Civil penalties my be assessed for each engine in violation under the requirements of the California Health and Safety Code, Division 26, and corresponding regulations.

(b) DELETE,

REPLACE WITH:

The following prohibitions apply to all entities with respect to the engines to which this part applies:

(1) Tampering. No one may remove or disable a device or element of design that may affect an engine's emission levels. This restriction applies before and after the engine is placed in service. Section 1068.120 describes how this applies to rebuilding engines. A person or a manufacturer or dealer who violates this part is subject to a civil penalty as specified in the California Health and Safety Code, Division 26, and corresponding regulations This prohibition does not apply in any of the following situations:

* * * * *

(2) Defeat devices. A manufacturer may not knowingly manufacture, sell, offer to sell, or install, an engine part if it bypasses, impairs, defeats, or disables the engine's control the emissions of any pollutant. A violation of the requirements of this subpart is a violation of the applicable provisions of the California Health and Safety Code, Division 26, and corresponding regulations, and is subject to the penalty provisions thereunder.

(3) Stationary engines. An engine that is excluded from any requirements of this chapter because it is a stationary engine may not be moved or installed in any mobile equipment except as allowed by the provisions of this chapter. The residence time

requirements of paragraph (2)(iii) of the engine definition in § 1068.30 may not be intentionally circumvented. A violation of the requirements of this subpart is a violation of the applicable provisions of the California Health and Safety Code, Division 26, and corresponding regulations, and is subject to the penalty provisions thereunder for each day you are in violation.

(4) Competition engines. An uncertified engine or piece of equipment that is excluded or exempted from any requirements of this chapter because it is to be used solely for competition may not be used in a manner that is inconsistent with use solely for competition. A violation of the requirements of this subpart is a violation of the applicable provisions of the California Health and Safety Code, Division 26, and corresponding regulations, and is subject to the penalty provisions thereunder.

(5) Importation. An uncertified engine or piece of equipment may not be imported if it is defined to be new in the standard-setting part and it is built after emission standards start to apply in California. A violation of the requirements of this subpart is a violation of the applicable provisions of the California Health and Safety Code, Division 26, and corresponding regulations, and is subject to the penalty provisions thereunder. Note the following:

(i) The definition of new is broad for imported engines; uncertified engines and equipment (including used engines and equipment) are generally considered to be new when imported.

(ii) Engines that were originally manufactured before applicable ARB standards became effective are generally not subject to emission standards.

(6) Warranty. Manufacturers must honor the emission-related warranty requirements under § 1068.115 and fulfill any applicable responsibilities to recall engines under § 1068.505. Failure to meet these obligations is prohibited. A violation of the requirements of this subpart is a violation of the applicable provisions of the California Health and Safety Code, Division 26, and corresponding regulations, and is subject to the penalty provisions thereunder.

* * * * *

(e) DELETE,

REPLACE WITH:

The maximum penalty values listed in paragraphs (a) and (b) of this section are shown for calendar year 2002. Maximum penalty limits for later years may be adjusted based on the applicable provisions of the California Health and Safety Code, Division 26, and corresponding regulations.

ADD:

(f) Under § 43017 of the California Health and Safety Code, the Air Resources Board may enjoin any violation of any provision of Subpart B of this part 1068.

§ 1068.105 What other provisions apply to me specifically if I manufacture equipment needing certified engines?

* * * * *

(d) DELETE,

REPLACE WITH:

Producing off-road equipment certified to highway emission standards. A manufacturer may produce off-road equipment from complete or incomplete motor vehicles with the motor vehicle engine under the following conditions:

(1) The engine or vehicle is certified to California on-road requirements.

(2) The engine is not adjusted outside the manufacturer's specifications.

(3) The engine or vehicle is not modified in any way that may affect its emission control. This applies to evaporative emission controls, but not refueling emission controls.

(4) Additional restrictions may be imposed by the Executive Officer as determined necessary to ensure emission performance equity.

§ 1068.110 What other provisions apply to engines in service?

* * * * *

(b) DELETE,

REPLACE WITH:

Certifying aftermarket parts. The manufacturer or rebuilder of an aftermarket engine part shall be required to certify according to the requirements of Title 13, CCR, Chapter 4, Article 2. The aftermarket part rebuilder or manufacturer must keep all records showing how the part affects emissions, and shall provide this information to the Executive Officer within 30 calendar days upon request.

* * * * *

§ 1068.115 When must manufacturers honor emission-related warranty claims?

Introductory text DELETE,

REPLACE WITH:

Title 13, CCR, Chapter 9, Article 4, § 2425, requires certifying manufacturers of compression-ignition engines to warrant to purchasers that their engines are designed, built, and equipped to conform at the time of sale to the applicable regulations for their full useful life, including a warranty that the engines are free from defects in materials and workmanship that would cause an engine to fail to conform to the applicable regulations during the specified warranty period. This section codifies the warranty requirements without intending to limit them.

* * * * *

§ 1068.120 What requirements must I follow to rebuild engines?

* * * * *

ADD:

(l) The provisions in Title 13, CCR, § 2423(l) shall apply.

§ 1068.125 What happens if I violate the regulations?

DELETE,

REPLACE WITH:

A violation of the requirements of this subpart is a violation of the applicable provisions of the California Health and Safety Code, Division 26, and corresponding regulations, and is subject to the penalty provisions thereunder.

Subpart C – Exemptions and Exclusions

§ 1068.201 Does ARB exempt or exclude any engines from the prohibited acts?

* * * * *

§ 1068.210 What are the provisions for exempting test engines?

* * * * *

§ 1068.215 What are the provisions for exempting manufacturer-owned engines?

* * * * *

(b) DELETE,

REPLACE WITH:

By provision of the California Health and Safety Code, Division 24, Part 5, Chapter 1, § 43014, a manufacturer may request the Executive Officer to issue an experimental permit for a nonconforming engine under the ownership and control of the manufacturer for the purposes of developing products, assessing production methods, or promoting engines in the marketplace. The engine shall not be loaned, leased, or sold to generate revenue, either by itself or in a piece of equipment.

* * * * *

(c)(3)(iv) DELETE,

REPLACE WITH:

The statement "THIS ENGINE IS COVERED BY AN EXPERIMENTAL PERMIT AND IS EXEMPT FROM MEETING CALIFORNIA EMISSION REQUIREMENTS.". The referencing of similar federal requirements in combination with California references under this provision is permitted.

§ 1068.220 What are the provisions for exempting display engines?

* * * * *

§ 1068.225 What are the provisions for exempting engines for national security?

* * * * *

§ 1068.230 What are the provisions for exempting engines for export?

* * * * *

§ 1068.235 What are the provisions for exempting engines used solely for competition?

* * * * *

§ 1068.240 What are the provisions for exempting new replacement engines?

* * * * *

(c) DELETE,

REPLACE WITH:

If the engine being replaced was not certified to any emission standards under this chapter, add a permanent label with your corporate name and trademark and the following language:

"THIS ENGINE DOES NOT COMPLY WITH CALIFORNIA OFF-ROAD EMISSION REQUIREMENTS. SALE OR INSTALLATION OF THIS ENGINE FOR ANY PURPOSE

OTHER THAN AS A REPLACEMENT ENGINE FOR AN ENGINE MANUFACTURED PRIOR TO JANUARY 1, [Insert appropriate year reflecting when the earliest tier of emission standards began to apply to engines of that size and type] IS A VIOLATION OF CALIFORNIA LAW SUBJECT TO CIVIL PENALTY." The referencing of similar federal requirements in combination with California references under this provision is permitted.

(d) DELETE,

REPLACE WITH:

If the engine being replaced was certified to emission standards less stringent than those in effect when you produce the replacement engine, add a permanent label with your corporate name and trademark and the following language:

"THIS ENGINE COMPLIES WITH CALIFORNIA OFF-ROAD AND U.S. EPA NONROAD EMISSION REQUIREMENTS FOR [Insert appropriate year reflecting when the applicable tier of emission standards for the replaced engine began to apply] ENGINES UNDER 13 CCR 2423(j) AND 40 CFR 1068.240. SELLING OR INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER THAN TO REPLACE AN OFF-ROAD ENGINE BUILT BEFORE JANUARY 1 [Insert appropriate year reflecting when the next tier of emission standards began to apply] MAY BE A VIOLATION OF CALIFORNIA AND FEDERAL LAW SUBJECT TO CIVIL PENALTY." The referencing of similar federal requirements in combination with California references under this provision is permitted.

* * * * *

§ 1068.245 What temporary provisions address hardship due to unusual circumstances?

* * * * *

§ 1068.250 What are the provisions for extending compliance deadlines for small-volume manufacturers under hardship?

* * * * *

§ 1068.255 What are the provisions for exempting engines for hardship for equipment manufacturers and secondary engine manufacturers?

* * * * *

(b)(4)(i) DELETE,

REPLACE WITH:

If the engine does not meet any emission standards: "THIS ENGINE IS EXEMPT UNDER 13 CCR 2423(f) FROM EMISSION STANDARDS AND RELATED REQUIREMENTS.". The referencing of similar federal requirements in combination with California references under this provision is permitted.

* * * * *

§ 1068.260 What are the provisions for temporarily exempting engines for delegated final assembly?

* * * * *

§ 1068.265 What provisions apply to engines that are conditionally exempted from certification?

* * * * *

Subpart D – Imports

§ 1068.301 Does this subpart apply to me?

* * * * *

§ 1068.305 How do I get an exemption or exclusion for imported engines?

* * * * *

ADD:

(f) For any engine whose destination is California, send the completed form to the Executive Officer of the Air Resources Board.

§ 1068.310 What are the exclusions for imported engines?

* * * * *

§ 1068.315 What are the permanent exemptions for imported engines?

* * * * *

§ 1068.320 How must I label an imported engine with a permanent exemption?

* * * * *

(b)(4) DELETE,

REPLACE WITH:

State: "THIS IMPORT ENGINE IS GRANTED A PERMANENT EXEMPTION FROM MEETING CURRENT YEAR CALIFORNIA OFF-ROAD DIESEL EMISSION REQUIREMENTS BY ALLOWANCE FOR [identify the permanent exemption category authorizing the exemption (for example, "NATIONAL SECURITY")]. INSTALLING THIS ENGINE IN ANY DIFFERENT APPLICATION IS A VIOLATION OF CALIFORNIA LAW SUBJECT TO CIVIL PENALTY.". The referencing of similar federal requirements in combination with California references under this provision is permitted.

§ 1068.325 What are the temporary exemptions for imported engines?

* * * * *

§ 1068.330 How do I import engines requiring further assembly?

* * * * *

§ 1068.335 What are the penalties for violations?

* * * * *

ADD:

(c) Under § 43017 of the California Health and Safety Code, the Air Resources Board may enjoin any violation of any provision of Subpart D of this part 1068.

Subpart E – Selective Enforcement Auditing

§ 1068.401 What is a selective enforcement audit?

* * * * *

§ 1068.405 What is in a test order?

* * * * *

§ 1068.410 How must I select and prepare my engines?

* * * * *

§ 1068.415 How do I test my engines?

* * * * *

§ 1068.420 How do I know when my engine family fails an SEA?

* * * * *

§ 1068.425 What happens if one of my production-line engines exceeds the emission standards?

* * * * *

§ 1068.430 What happens if an engine family fails an SEA?

* * * * *

§ 1068.435 May I sell engines from an engine family with a suspended Executive Order?

* * * * *

§ 1068.440 How do I ask ARB to reinstate my suspended Executive Order?

* * * * *

§ 1068.445 When may ARB revoke my Executive Order under this subpart and how may I sell these engines again?

* * * * *

§ 1068.450 What records must I send to ARB?

* * * * *

ADD:

(f) The manufacturer shall supply upon request emission test results from U.S. EPA-directed audits for engines certified in California.

§ 1068.455 What records must I keep?

* * * * *

Appendix A to Subpart E of Part 1068-Plans for Selective Enforcement Auditing

* * * * *

Subpart F – Reporting Defects and Recalling Engines

§ 1068.501 How do I report engine defects?

* * * * *

§ 1068.505 How does the recall program work?

DELETE,
REPLACE WITH:
Off-road engines subject to provisions of subpart B of this part are subject to recall regulations specified in Title 13, California Code of Regulations, Chapter 2, Articles 2.1 – 2.4, §§ 2111 – 2141.

§ 1068.510 How do I prepare and apply my remedial plan?

DELETE,
REPLACE WITH:
Off-road engines subject to provisions of subpart B of this part are subject to recall regulations specified in Title 13, California Code of Regulations, Chapter 2, Articles 2.1 – 2.4, §§ 2111 – 2141.

§ 1068.515 How do I mark or label repaired engines?

DELETE,
REPLACE WITH:
Off-road engines subject to provisions of subpart B of this part are subject to recall regulations specified in Title 13, California Code of Regulations, Chapter 2, Articles 2.1 – 2.4, §§ 2111 – 2141.

§ 1068.520 How do I notify affected owners?

DELETE,
REPLACE WITH:
Off-road engines subject to provisions of subpart B of this part are subject to recall regulations specified in Title 13, California Code of Regulations, Chapter 2, Articles 2.1 – 2.4, §§ 2111 – 2141.

§ 1068.525 What records must I send to ARB?

DELETE,
REPLACE WITH:
Off-road engines subject to provisions of subpart B of this part are subject to recall regulations specified in Title 13, California Code of Regulations, Chapter 2, Articles 2.1 – 2.4, §§ 2111 – 2141.
§ 1068.530 What records must I keep?

DELETE,
REPLACE WITH:
Off-road engines subject to provisions of subpart B of this part are subject to recall regulations specified in Title 13, California Code of Regulations, Chapter 2, Articles 2.1 – 2.4, §§ 2111 – 2141.

§ 1068.535 How can I do a voluntary recall for emission-related problems?

DELETE,
REPLACE WITH:
Off-road engines subject to provisions of subpart B of this part are subject to recall regulations specified in Title 13, California Code of Regulations, Chapter 2, Articles 2.1 – 2.4, §§ 2111 – 2141.

§ 1068.540 [Removed]

DELETE.

Subpart G – Hearings

§ 1068.601 What are the procedures for hearings?

DELETE,

REPLACE WITH:

A manufacturer may request a hearing on an Executive Officer's decision regarding certification, as specified in Title 17, California Code of Regulations, Division 3, Chapter 1, Subchapter 1.25, Articles 1 and 2.

Appendix I to Part 1068 – Emission-Related Components

* * * * *

Appendix II to Part 1068 – Emission-Related Parameters and Specifications

* * * * *

APPENDIX K

PROPOSED TEST PROCEDURES

Part I – D (Part 1039)

(2011 and Later Model Years)

Tier 4 Off-Road Compression-Ignition Engines

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State of California

AIR RESOURCES BOARD

California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines

PART I-D

Adopted: October 20, 2005

Amended: (Date of amendment)

NOTE: The source for this document is Part 1039 of the "California Exhaust Emission Standards and Test Procedures for New 2008 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-C" (Part I-C), adopted October 20, 2005. Part 1068 and Part 1065 of those test procedures will be updated in separate documents titled "California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression Ignition Engines, Part I-E" (Part I-E), and "California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression Ignition Engines, Part I-F" (Part I-F), respectively. The proposed modifications to this document are, in large part, incorporated directly or by reference from 40 Code of Federal Regulations (CFR) part 1039, subparts A, B, C, D, E, F, G, H, and I, including Appendix I, II, V, and VI to part 1039, last amended June 28, 2011, and the subparts of 40 CFR Part 60, 40 CFR Part 85, 40 CFR Part 86, 40 CFR Part 89, 40 CFR Part 92, and 40 CFR Part 1033 that are internally referenced within 40 CFR Part 1039. This document is incorporated by reference in Title 13, California Code of Regulations, Section 2421(a)(4)(B); therefore all language is printed in a style to indicate changes from the existing provisions. All existing language is indicated by plain type. All additions to language are indicated by underlined text and deletions are indicated by ~~strikeout~~. California provisions that replace specific federal provisions are denoted by the words "DELETE" for the federal language and "REPLACE WITH" or "ADD" for the California language. Only those portions containing the suggested modifications from the existing provisions are included. All other portions remain unchanged and are indicated by the symbol " * * * * * " for reference. If there is any conflict between the provisions of this document and the California Health and Safety Code, Division 26, or Title 13 of the California Code of Regulations (CCR), the Health and Safety Code and Title 13 apply.

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CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR NEW 2011 AND LATER TIER 4 OFF-ROAD COMPRESSION-IGNITION ENGINES, Part I-D

The following provisions of Part 1039, Title 40, Code of Federal Regulations (CFR), as promulgated and last amended by the United States Environmental Protection Agency on June 28, 2011, are incorporated herein by this reference into the existing California test procedures for 2008 model year and later off-road compression-ignition engines, hereafter known as the "California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-D," except as altered or replaced by the provisions set forth below. All proposed changes indicated by the notation " * * * * * " or by ~~strikeout~~/underline refer to the existing 2008 and Later California Test Procedures, Part I-C, as previously adopted by the Air Resources Board on October 20, 2005. References to other 40 CFR parts and sections refer to parts and sections incorporated in this or other ARB Test Procedures unless otherwise indicated.

PART 1039 – CONTROL OF EMISSIONS FROM NEW AND IN-USE OFF-ROAD COMPRESSION-IGNITION ENGINES

SOURCE: California Exhaust Emission Standards and Test Procedures for New 2008 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-C, Adopted October 20, 2005, predicated upon the requirements of 69 FR 38957, June 29, 2004, amended July 13, 2005, unless otherwise noted.

Subpart A – Overview and Applicability

§ 1039.1 Does this part apply for my engines?

* * * * *

(c) DELETE,

REPLACE WITH:

(c) The definitions of "off-road compression-ignition engine" in 13 CCR 2421(a)(38) and 40 CFR 1068.30 exclude certain engines used in stationary applications. These engines may be required by 17 CCR 93115 or subpart IIII of 40 CFR part 60 to comply with some of the provisions of this part 1039; otherwise, these engines are only required to comply with the requirements in §1039.20. In addition, the prohibitions in §1068.101 restrict the use of stationary engines for nonstationary purposes unless they are certified under §1039, or under the provisions referenced in 13 CCR 2421(a)(3), or 40 CFR part 94, to the same standards that would apply to off-road compression-ignition engines for the same model year.

ADD:

§ 1039.2 Who is responsible for compliance?
The regulations in this part 1039 contain provisions that may affect engine or equipment manufacturers, or both, and others. However, the requirements of this part are generally addressed to the engine manufacturer. The term "you" generally means the engine manufacturer, as defined in §1039.801, especially for issues related to certification.

§ 1039.5 Which engines are excluded from this part's requirements?
DELETE,
REPLACE WITH:
This part does not apply to the following off-road engines:

(a) Locomotive engines.

(1) The following locomotive engines are not subject to the provisions of this part 1039:

(i) Engines in locomotives certified under 40 CFR part 1033.

(ii) Engines in locomotives that are exempt from the standards of 40 CFR part 92 or 1033 pursuant to the provisions of 40 CFR part 1033 (except for the provisions of 40 CFR 1033.150(e) or to §1068.
(2) The following locomotive engines are subject to the provisions of this part 1039:

(i) Engines in locomotives exempt from 40 CFR part 1033 pursuant to the provisions of 40 CFR 1033.150(e).

(ii) Locomotive engines excluded from the definition of locomotive in 40 CFR 1033.901.

(b) Marine engines. (1) The following marine engines are not subject to the provisions of this part 1039 or 13 CCR 2423:

(i) Engines subject to the standards of 40 CFR part 94.

(ii) Engines not subject to the standards of 40 CFR part 94 only because they were produced before the standards of 40 CFR part 94 started to apply.

(iii) Engines otherwise subject to the standards of 40 CFR Part 94 but that are exempt from the standards of 40 CFR part 94 pursuant to the provisions of 40 CFR part 94 (except for the provisions of 40 CFR 94.907 or 94.912). For example, an engine that is exempt under 40 CFR 94.906 because it is a manufacturer-owned engine is not subject to the provisions of this part 1039.

(iv) Engines with rated power below 37 kW, except that such engines must continue to meet Tier 2 standards and other requirements as stated in the 2000 Plus Limited Test Procedures .

(v) Engines on foreign vessels.

(2) Marine engines are subject to the provisions of this part 1039 if they are otherwise subject to the standards of 40 CFR Part 94 but are exempted from 40 CFR part 94 based on the engine-dressing provisions of 40 CFR 94.907 or the common-family provisions of 40 CFR 94.912.

(c) Mining engines. Engines used in underground mining or in underground mining equipment and regulated by the Mining Safety and Health Administration in 30 CFR parts 7, 31, 32, 36, 56, 57, 70, and 75 are not subject to the provisions of this part 1039.

(d) Hobby engines. Engines installed in reduced-scale models of vehicles that are not capable of transporting a person are not subject to the provisions of this part 1039.

(e) Engines used in recreational vehicles. Engines certified to meet the requirements of 13 CCR Chapter 9 Article 3 or otherwise subject to 13 CCR Chapter 9 Article 3 (for example, engines used in snowmobiles and all-terrain vehicles) are not subject to the provisions of this part 1039.

§ 1039.10 How is this part organized?

(Introduction) DELETE:

* * * * *

§ 1039.15 Do any other regulation parts apply to me?
(a) DELETE,
REPLACE WITH:
(a) Part 1065 of this chapter describes procedures and equipment specifications for testing engines to measure exhaust emissions. Subpart F of this part 1039 describes how to apply the provisions of part 1065 of this chapter to determine whether engines meet the exhaust emission standards in this part.

* * * * *

§ 1039.20 What requirements from this part apply to excluded stationary engines?
DELETE,
REPLACE WITH:
The provisions of this section apply for engines built on or after January 1, 2006.

(a) You must add a permanent label or tag to each new engine you produce or import that is excluded under §1039.1(c) as a stationary engine and is not required by 17 CCR 93115 or CFR 40 part 60, subpart IIII, to meet:
1) the requirements of this Part 1039 or Title 13, CCR, Chapter 9, Article 4, or
2) the requirements in 40 CFR part 94, that are equivalent to the requirements applicable to off-road or marine engines, respectively, for the same model year.

To meet labeling requirements, you must do the following things:

(1) Attach the label or tag in one piece so no one can remove it without destroying or defacing it.

(2) Secure it to a part of the engine needed for normal operation and not normally requiring replacement.

(3) Make sure it is durable and readable for the engine's entire life.

(4) Write it in English.

(5) Follow the requirements in §1039.135(g) regarding duplicate labels if the engine label is obscured in the final installation.

(b) Engine labels or tags required under this section must have the following information:

(1) Include the heading "EMISSION CONTROL INFORMATION"."

(2) Include your full corporate name and trademark. You may instead include the full corporate name and trademark of another company you choose to designate.

(3) State the engine displacement (in liters) and maximum engine power (or in the case of fire pumps, NFPA nameplate engine power).

(4) State: "THIS ENGINE IS EXEMPTED FROM THE REQUIREMENTS OF 13 CCR, CH 9, ARTICLE 4, AS A "STATIONARY ENGINE." INSTALLING OR USING THIS ENGINE IN ANY OTHER APPLICATION MAY BE A VIOLATION OF CALIFORNIA LAW SUBJECT TO CIVIL PENALTY." The referencing of similar federal requirements in combination with California references is permitted.

(c) Stationary engines required by 17 CCR 93115 or 40 CFR part 60, subpart IIII, to meet the requirements of this part 1039, or the requirements referenced at 13 CCR 2421(a)(3), or in 40 CFR part 94, must meet the labeling requirements of 40 CFR 60.4210.

ADD:
§1039.30 Submission of information.
(a) This part includes various requirements to record data or other information. Refer to §1039.825 and §1068.25 regarding recordkeeping requirements. Unless we specify otherwise, store these records in any format and on any media and keep them readily available for one year after you send an associated application for certification, or one year after you generate the data if they do not support an application for certification. You must promptly send us organized, written records in English if we ask for them. We may review them at any time.

(b) The regulations in §1039.255 and §1068.101 describe your obligation to report truthful and complete information and the consequences of failing to meet this obligation. This includes information not related to certification.

(c) Send all reports and requests for approval to the Executive Officer of the Air Resources Board (or the Executive Officer's designee as notified by ARB).

(d) Any written information we require you to send to or receive from another company is deemed to be a required record under this section. Such records are also deemed to be submissions to the Air Resources Board. We may require you to send us these records whether or not you are a certificate holder.

Subpart B – Emission Standards and Related Requirements

§ 1039.101 What exhaust emission standards must my engines meet after the 2014 model year?

* * * * *

§ 1039.102 What exhaust emission standards and phase-in allowances apply for my engines in model year 2014 and earlier?

* * * * *

(e) Alternate NOx standards. DELETE,
REPLACE WITH:
(e) Alternate NOx standards. For engines in 56-560 kW power categories during the phase-in of Tier 4 standards, you may certify engine families to the alternate NOx or NOx+NMHC standards in this paragraph (e) instead of the phase-in and phase-out NOx+NMHC standards described in Tables 4 through 6 of this section. Engines certified to an alternate NOx standard under this section must be certified to an NMHC standard of 0.19 g/kW-hr. Do not include engine families certified under this paragraph (e) in determining whether you comply with the percentage phase-in requirements of paragraphs (c) and (d)(2) of this section. Except for the provisions for alternate FEL caps in §1039.104(g), the NOx and NOx+NMHC standards and FEL caps under this paragraph (e) are as follows:

* * * * *

ADD:
(e)(3) You may use NOx+NMHC emission credits to certify an engine family to the alternate NOx+NMHC standards in this paragraph (e)(3) instead of the otherwise applicable alternate NOx and NMHC standards. Calculate the alternate NOx+NMHC standard by adding 0.1 g/kW-hr to the numerical value of the applicable alternate NOx

standard of paragraph (e)(1) or (2) of this section. Engines certified to the NOx+NMHC standards in Table 1b of 13 CCR 2423(b)(1)(A) using credits as permitted in this paragraph (e)(3) may not generate emission credits. The FEL caps for engine families certified under this paragraph (e)(3) are the previously applicable NOx+NMHC standards of 40 CFR 89.112 (generally the Tier 3 standards).

* * * * *

Table 8 Footnote [3] DELETE,
REPLACE WITH:
For manufacturers certifying engines to the standards of this part 1039 in 2012 under Option #2 of Table 3 of §1039.102, the FEL caps for 37-56 kW engines in the 19-56 kW category of Table 2 of §1039.101 apply for model year 2012 and later; see Title 13, CCR, §2423(b)(1)(A) for provisions that apply to earlier model years.

* * * * *

(g)(4) DELETE,
REPLACE WITH:
(g)(4) Special provisions for 37-56 kW engines. For engines at or above 37 kW and below 56 kW from model years 2008 through 2012, you must add information to the emission-related installation instructions to clarify the equipment manufacturer's obligations under §1039.104(f).

§ 1039.104 Are there interim provisions that apply only for a limited time?

* * * * *

Table 1 of §1039.104 DELETE,
REPLACE WITH:

Table 1 of §1039.104 - Alternate FEL Caps

Maximum Engine Power	PM FEL Cap, g/kW-hr	Model Years for the Alternate PM FEL Cap	NOx FEL Cap, g/kW-hr	Model Years for the Alternate NOx FEL Cap
19 ≤ kW < 56	0.30	2012-2015 [1]		
56 ≤ kW < 130 [2]	0.30	2012-2015	3.8	2012-2015 [3]
130 ≤ kW ≤ 560	0.20	2011-2014	3.8	2011-2014 [4]
kW > 560 [5]	0.10	2015-2018	3.5	2015-2018

[1] For manufacturers certifying engines under Option #1 of Table 3 of §1039.102, these alternate FEL caps apply to all 19-56 kW engines for model years from 2013 through 2016 instead of in the years indicated in this table. For manufacturers certifying engines under Option #2 of Table 3 of §1039.102, these alternate FEL caps do not apply to 19-37 kW engines except in model years 2013 to 2015.
[2] For engines below 75 kW, the FEL caps are 0.40 g/kW-hr for PM emissions and 4.4 g/kW-hr for NOx emissions.
[3] For manufacturers certifying engines in this power category using a percentage phase-in/phase-out approach instead of the alternate NOx standards of §1039.102(e)(1), the alternate NOx FEL cap in the table applies only in the 2014-2015 model years if certifying under §1039.102(d)(1), and only in the 2015 model year if certifying under §1039.102(d)(2).
[4] For manufacturers certifying engines in this power category using the percentage phase-in/phase-out approach instead of the alternate NOx standard of §1039.102(e)(2), the alternate NOx FEL cap in the table applies only for the 2014 model year.
[5] For engines above 560 kW, the provision for alternate NOx FEL caps is limited to generator-set engines. For example, if you produce 1,000 generator-set engines above 560 kW in 2015, up to 200 of them may be certified to the alternate NOx FEL caps.

ADD:
(g)(5) You may certify engines under this paragraph (g) without regard to whether or not the engine family's FEL is at or below the otherwise applicable FEL cap. For example, a 200 kW engine certified to the NOx+NMHC standard of §1039.102(e)(3) with an FEL equal to the FEL cap of 2.8 g/kW-hr may be certified under this paragraph (g) and count toward the sales limit specified in paragraph (g)(1) of this section.
§ 1039.105 What smoke standards must my engines meet?

* * * * *

§ 1039.107 What evaporative emission standards and requirements apply?

* * * * *

§ 1039.110 [Reserved]

* * * * *

§ 1039.115 What other requirements apply?
Introductory Text DELETE,
REPLACE WITH:
Engines that are required to meet the emission standards of this part must meet the following requirements, except as noted elsewhere in this part:

Introductory Text (a) DELETE,
REPLACE WITH:
(a) Crankcase emissions. Crankcase emissions may not be discharged directly into the ambient atmosphere from any engine throughout its useful life, except as follows:

* * * * *

§ 1039.120 What emission-related warranty requirements apply to me?

* * * * *

(c) DELETE,
REPLACE WITH:
(c) Components covered. The emission-related warranty covers all components whose failure would increase an engine's emissions of any regulated pollutant, includingcomponents listed in §1068, Appendix I, Title 13, CCR, § 2425(d), and components from any other system you develope to control emissions. The emission-related warranty covers these components even if another company produces the component. Your emission-related warranty does not need to cover components whose failure would not increase an engine's emissions of any regulated pollutant.

* * * * *

§ 1039.125 What maintenance instructions must I give to buyers?

* * * * *

(a)(1)(iii) DELETE,
REPLACE WITH:
(a)(1)(iii) You provide the maintenance free of charge and clearly say so in your maintenance instructions.

* * * * *

(a)(2)(i) DELETE,
REPLACE WITH:
(a)(2)(i) For EGR-related filters and coolers, PCV valves, crankcase vent filters, and fuel injector tips (cleaning only), the minimum interval is 1,500 hours.

(a)(2)(ii) DELETE,
REPLACE WITH:
(a)(2)(ii) For the following components, including associated sensors and actuators, the minimum interval is 3000 hours: fuel injectors, turbochargers, catalytic converters, electronic control units, EGR systems (including related components, but excluding filters and coolers), and other add-on components.

(a)(3) DELETE,
REPLACE WITH:
(a)(3) For engines at or above 130 kW, you may not schedule critical emission-related maintenance more frequently than the following minimum intervals, except as specified in paragraphs (a)(4), (b), and (c) of this section:
(i) For EGR-related filters and coolers, PCV valves, crankcase vent filters, and fuel injector tips (cleaning only), the minimum interval is 1,500 hours.
(ii) For the following components, including associated sensors and actuators, the minimum interval is 4500 hours: fuel injectors, turbochargers, catalytic converters, electronic control units, particulate traps, trap oxidizers, components related to particulate traps and trap oxidizers, EGR systems (including related components, but excluding filters and coolers), and other add-on components

(a)(4) DELETE,
REPLACE WITH,
(a)(4) For particulate traps, trap oxidizers, and components related to either of these, scheduled maintenance may include cleaning or repair at the intervals specified in paragraph (a)(2) or (3) of this section, as applicable. Scheduled maintenance may include a shorter interval for cleaning or repair and may also include adjustment or replacement, but only if we approve it. We will approve your request if you provide the maintenance free of charge, clearly state in your maintenance instructions that the service is to be provided free of charge, and the Executive Officer or his/her designee

determines there is a high likelihood that the maintenance will occur. The Executive Officer may request the submission of additional information to aid in making this determination.

ADD:
(a)(5) You may ask us to approve a maintenance interval shorter than that specified in paragraphs (a)(2) and (a)(3) of this section under §1039.210, including emission-related components that were not in widespread use with off-road compression-ignition engines before 2011. In your request you must describe the proposed maintenance step, recommend the maximum feasible interval for this maintenance, include your rationale with supporting evidence to support the need for the maintenance at the recommended interval, and demonstrate that the maintenance will be done at the recommended interval on in-use engines. In considering your request, we will evaluate the information you provide and any other available information to establish alternate specifications for maintenance intervals, if appropriate. We will announce any decision we make under this paragraph (a)(5) in an ARB manufacturers advisory correspondence or other suitable method of public communication. Anyone may request a hearing regarding such a decision (see §1039.820).

ADD:
(a)(6) If your engine family has an alternate useful life under §1039.101(g) that is shorter than the period specified in paragraph (a)(2) or (a)(3) of this section, you may not schedule critical emission-related maintenance more frequently than the alternate useful life, except as specified in paragraph (c) of this section.

* * * * *

(c) DELETE,
REPLACE WITH:
(c) Special maintenance. You may specify more frequent maintenance to address problems related to special situations, such as atypical engine operation. You must clearly state that this additional maintenance is associated with the special situation you are addressing. We may disapprove your maintenance instructions if we determine that you have specified special maintenance steps to address engine operation that is not atypical, or that the maintenance is unlikely to occur in use. If we determine that certain maintenance items do not qualify as special maintenance under this paragraph (c), you may identify this as recommended additional maintenance under paragraph (b) of this section.

(d) DELETE,
REPLACE WITH:
(d) Noncritical emission-related maintenance. Subject to the provisions of this paragraph (d), you may schedule any amount of emission-related inspection or maintenance that is not covered by paragraph (a) of this section, (that is, maintenance that is neither explicitly identified as critical emission-related maintenance, nor that we approve as critical emission-related maintenance). Noncritical emission-related

maintenance generally includes maintenance on the components we specify in 40 CFR part 1068, Appendix I, that is not covered in paragraph (a) of this section. You must state in the owner's manual that these steps are not necessary to keep the emission-related warranty valid. If operators fail to do this maintenance, this does not allow you to disqualify those engines from in-use testing or deny a warranty claim. You may not take these inspection or maintenance steps during service accumulation on your emission-data engines.

* * * * *

(f) DELETE,
REPLACE WITH:
(f) Source of parts and repairs. State clearly on the first page of your written maintenance instructions that a repair shop or person of the owner's choosing may maintain, replace, or repair emission-control devices and systems. Your instructions may not require components or service identified by brand, trade, or corporate name. Also, do not directly or indirectly condition your warranty on a requirement that the engine be serviced by your franchised dealers or any other service establishments with which you have a commercial relationship. You may disregard the requirements in this paragraph (f) if you do one of two things:
(1) Provide a component or service without charge under the purchase agreement.
(2) Get us to waive this prohibition in the public's interest by convincing us the engine will work properly only with the identified component or service.

(g) DELETE,
REPLACE WITH:
(g) Payment for scheduled maintenance. Owners are responsible for properly maintaining their engines. This generally includes paying for scheduled maintenance. However, manufacturers must pay for scheduled maintenance during the useful life if the regulations require it or if it meets all the following criteria:
(1) Each affected component was not in general use on similar engines before the applicable dates shown in paragraph (6) of the definition of new off-road engine in §1039.801.
(2) The primary function of each affected component is to reduce emissions.
(3) The cost of the scheduled maintenance is more than 2 percent of the price of the engine.
(4) Failure to perform the maintenance would not cause clear problems that would significantly degrade the engine's performance.

* * * * *

§ 1039.130 What installation instructions must I give to equipment manufacturers?

* * * * *

§ 1039.135 How must I label and identify the engines I produce?

* * * * *

(c)(4) DELETE,
REPLACE WITH:
(c)(4) State the power category or subcategory from §1039.101 or §1039.102 that determines the applicable emission standards for the engine family. For engines at or above 37 kW and below 56 kW from model years 2008 through 2012, and for engines less than 8 kW utilizing the provision at §1039.101(c), you must state the applicable PM standard for the engine family.

* * * * *

(c)(6) DELETE,
REPLACE WITH:
(c)(6) State the date of manufacture [MONTH and YEAR].

* * * * *

(c)(8) DELETE,
REPLACE WITH:
(c)(8) Identify the emission-control system. Use terms and abbreviations as described in 40 CFR 1068.45. You may omit this information from the label if there is not enough room for it and you put it in the owners manual instead.

* * * * *

(g) DELETE,
REPLACE WITH:
(g) If you obscure the engine label while installing the engine in the equipment such that the label is no longer readily visible as described in 13 CCR 2424(e), you must place a duplicate label on the equipment. If others install your engine in their equipment in a way that obscures the engine label, we require them to add a duplicate label on the equipment (see 40 CFR 1068.105); in that case, give them the number of duplicate labels they request and keep the following records for at least five years:

(1) Written documentation of the request from the equipment manufacturer.
(2) The number of duplicate labels you send for each engine family and the date you sent them.

* * * * *

§ 1039.140 What is my engine's maximum engine power?

* * * * *

Subpart C – Certifying Engine Families

§ 1039.201 What are the general requirements for obtaining an Executive Order?

* * * * *

§ 1039.205 What must I include in my application?

* * * * *

(o) DELETE,
REPLACE WITH:
(o) Present emission data for hydrocarbons (such as NMHC or THCE, as applicable), NOx, PM, and CO on an emission--data engine to show your engines meet the applicable duty-cycle emission standards we specify in §1039.101. Show emission figures before and after applying adjustment factors for regeneration and deterioration factors for each engine. Include emission results for each mode if you do discrete-mode testing under §1039.505. Present emission data to show that you meet any applicable smoke standards we specify in §1039.105. If we specify more than one grade of any fuel type (for example, high-sulfur and low-sulfur diesel fuel), you need to submit test data only for one grade, unless the regulations of this part specify otherwise for your engine. Note that §1039.235 allows you to submit an application in certain cases without new emission data.

* * * * *

(r) DELETE,
REPLACE WITH:
(r) Report test results as follows:

(1) Report all test results involving measurement of pollutants for which emission standards apply. Include test results from invalid tests or from any other tests, whether or not they were conducted according to the test procedures of subpart F of this part.. We may ask you to send other information to confirm that your tests were valid under the requirements of this part and 40 CFR part 1065.

(2) Report measured CO2, N2O, and CH4 as described in §1039.235. Small-volume engine manufacturers may omit reporting N2O and CH4.

* * * * *

(v) DELETE,
REPLACE WITH:
(v) State whether your certification is intended to include engines used in stationary applications. State whether your certification is limited for certain engines. If this is the case, describe how you will prevent use of these engines in applications for which they are not certified. This applies for engines such as the following:

(1) Constant-speed engines.

(2) Engines used for transportation refrigeration units that you certify under the provisions of §1039.645.

(3) Hand-startable engines certified under the provisions of §1039.101(c).

(4) Engines above 560 KW that are not certified to emission standards for generator-set engines.

* * * * *

(x) DELETE,
REPLACE WITH:
(x) Include good-faith estimates of U.S.-directed production volumes and, if available, California-directed production volumes. Include a justification for the estimated production volumes if they are substantially different than actual production volumes in earlier years for similar models.

* * * * *

ADD:
(aa) Name an agent for service located in California, or if you have no California agent, in the United States. Service on this agent constitutes service on you or any of your officers or employees for any action by ARB or otherwise by the State of California related to the requirements of this part.

§ 1039.210 May I get preliminary approval before I complete my application?

* * * * *

§ 1039.220 How do I amend the maintenance instructions in my application?

DELETE,
REPLACE WITH:
You may amend your emission--related maintenance instructions after you submit your application for certification, as long as the amended instructions remain consistent with the provisions of §1039.125. You must send the Executive Officer or his/her designee a written request to amend your application for certification for an engine family if you

want to change the emission--related maintenance instructions in a way that could affect emissions. In your request, describe the proposed changes to the maintenance instructions. If operators follow the original maintenance instructions rather than the newly specified maintenance, this does not allow you to disqualify those engines from in-use testing or deny a warranty claim.
(a) If you are decreasing or eliminating any specified maintenance, you may distribute the new maintenance instructions to your customers 30 days after we receive your request, unless we disapprove your request. This would generally include replacing one maintenance step with another. We may approve a shorter time or waive this requirement.
(b) If your requested change would not decrease the specified maintenance, you may distribute the new maintenance instructions anytime after you send your request. For example, this paragraph (b) would cover adding instructions to increase the frequency of filter changes for engines in severe-duty applications.
(c) You need not request approval if you are making only minor corrections (such as correcting typographical mistakes), clarifying your maintenance instructions, or changing instructions for maintenance unrelated to emission control. We may ask you to send us copies of maintenance instructions revised under this paragraph (c).

§ 1039.225 How do I amend my application for certification?

DELETE,
REPLACE WITH:
Before we issue you an Exective Order, you may amend your application to include new or modified engine configurations, subject to the provisions of this section. After we have issued your Executive Order, you may send us an amended application requesting that we include new or modified engine configurations within the scope of the Order, subject to the provisions of this section. You must amend your application if any changes occur with respect to any information that is included or should be included in your application.

(a) You must amend your application before you take any of the following actions:

(1) Add an engine configuration to an engine family. In this case, the engine configuration added must be consistent with other engine configurations in the engine family with respect to the criteria listed in §1039.230.

(2) Change an engine configuration already included in an engine family in a way that may affect emissions, or change any of the components you described in your application for certification. This includes production and design changes that may affect emissions any time during the engine"s lifetime.

(3) Modify an FEL for an engine family, as described in paragraph (f) of this section.

(b) To amend your application for certification, send the following information, as applicable, to the Executive Officer or his/her designee:

(1) Describe in detail the addition or change in the engine model or configuration you intend to make.

(2) Include engineering evaluations or data showing that the amended engine family complies with all applicable requirements. You may do this by showing that the original emission-data engine is still appropriate for showing that the amended family complies with all applicable requirements.

(3) If the original emission-data engine for the engine family is not appropriate to show compliance for the new or modified engine configuration, include new test data showing that the new or modified engine configuration meets the requirements of this part.

(c) We may ask for more test data or engineering evaluations. You must give us these within 30 days after we request them.

(d) For engine families already covered by an Executive Order, we will determine whether the existing certificate of conformity covers your newly added or modified engine. You may ask for a hearing if we deny your request (see §1039.820).

(e) For engine families already covered by an Executive Order, you may start producing the new or modified engine configuration any time after you send us your amended application, and before we make a decision under paragraph (d) of this section. However, if we determine that the affected engines do not meet applicable requirements, we will notify you to cease production of the engines and may require you to recall the engines at no expense to the owner. Choosing to produce engines under this paragraph (e) is deemed to be consent to recall all engines that we determine do not meet applicable emission standards or other requirements and to remedy the nonconformity at no expense to the owner. If you do not provide information required under paragraph (c) of this section within 30 days after we request it, you must stop producing the new or modified engines.

(f) You may ask us to approve a change to your FEL in certain cases after the start of production. The changed FEL may not apply to engines you have already introduced into U.S. commerce, except as described in this paragraph (f). If we approve a changed FEL after the start of production, you must include the new FEL on the emission control information label for all engines produced after the change. You may ask us to approve a change to your FEL in the following cases:

(1) You may ask to raise your FEL for your engine family at any time. In your request, you must show that you will still be able to meet the emission standards as specified in subparts B and H of this part. If you amend your application by submitting new test data to include a newly added or modified engine, as described in paragraph (b)(3) of this section, use the appropriate FELs with corresponding production volumes to calculate emission credits for the model year, as described in subpart H of this part. In all other

circumstances, you must use the higher FEL for the entire engine family to calculate emission credits under subpart H of this part.

(2) You may ask to lower the FEL for your engine family only if you have test data from production engines showing that emissions are below the proposed lower FEL. The lower FEL applies only to engines you produce after we approve the new FEL. Use the appropriate FELs with corresponding production volumes to calculate emission credits for the model year, as described in subpart H of this part.

§ 1039.230 How do I select engine families?

DELETE,
REPLACE WITH:

(a) For purposes of certification, divide your product line into families of engines that are expected to have similar emission characteristics throughout the useful life as described in this section. Your engine family is limited to a single model year.

(b) Group engines in the same engine family if they are the same in all the following aspects:

(1) The combustion cycle and fuel.

(2) The cooling system (water-cooled vs. air-cooled).

(3) Method of air aspiration.

(4) Method of exhaust aftertreatment (for example, catalytic converter or particulate trap).

(5) Combustion chamber design.

(6) Bore and stroke.

(7) Cylinder arrangement (such as in-line vs. vee configurations). This applies for engines with aftertreatment devices only).

(8) Method of control for engine operation other than governing (i.e., mechanical or electronic).

(9) Power category.

(10) Numerical level of the emission standards that apply to the engine.

(c) You may subdivide a group of engines that is identical under paragraph (b) of this section into different engine families if you show the expected emission characteristics are different during the useful life.

(d) In unusual circumstances, you may group engines that are not identical with respect to the things listed in paragraph (b) of this section in the same engine family if you show that their emission characteristics during the useful life will be similar.

(e) If you combine engines from different power categories into a single engine family under paragraph (d) of this section, you must certify the engine family to the more stringent set of standards from the two power categories in that model year.

§ 1039.235 What testing requirements apply for certification?

* * * * *

(c) DELETE,
REPLACE WITH:
(c) We may measure emissions from any of your emission-data engines or other engines from the engine family, as follows:

(1) We may decide to do the testing at your plant or any other facility. If we do this, you must deliver the engine to a test facility we designate. The engine you provide must include appropriate manifolds, aftertreatment devices, electronic control units, and other emission-related components not normally attached directly to the engine block. If we do the testing at your plant, you must schedule it as soon as possible and make available the instruments, personnel, and equipment we need.

(2) If we measure emissions on one of your engines, the results of that testing become the official emission results for the engine. Unless we later invalidate these data, we may decide not to consider your data in determining if your engine family meets applicable requirements.

(3) Before we test one of your engines, we may set its adjustable parameters to any point within the physically adjustable ranges (see §1039.115(e)).

(4) Before we test one of your engines, we may calibrate it within normal production tolerances for anything we do not consider an adjustable parameter. For example, this would apply for an engine parameter that is subject to production variability because it is adjustable during production, but is not considered an adjustable parameter (as defined in §1039.801) because it is permanently sealed.

(d) DELETE,
REPLACE WITH:
(d) You may ask to use carryover emission data from a previous model year instead of doing new tests, but only if all the following are true:

(1) The engine family from the previous model year differs from the current engine family only with respect to model year or other characteristics unrelated to emissions.

* * * * *

ADD:
(g) Measure CO2 and CH4 with each low-hour certification test using the procedures specified in 40 CFR part 1065 in the 2011 and 2012 model years, respectively. Also measure N2O with each low-hour certification test using the procedures specified in part 1065 of these Test Procedures starting in the 2013 model year for any engine family that depends on NOx aftertreatment to meet emission standards. Small-volume engine manufacturers may omit measurement of N2O and CH4. Additionally, manufacturers may omit direct measurement of N2O and CH4 for engines not subject to N2O and CH4 standards according to the provisions in 1065.5(a)(3). These measurements are not required for NTE testing. Use the same units and modal calculations as for your other results to report a single weighted value for each constituent. Round the final values as follows:

(1) Round CO2 to the nearest 1 g/kW-hr.

(2) Round N2O to the nearest 0.001 g/kW-hr.

(3) Round CH4 to the nearest 0.001g/kW-hr.

§ 1039.240 How do I demonstrate that my engine family complies with exhaust emission standards?

(a) DELETE,
REPLACE WITH:
(a) For purposes of certification, your engine family is considered in compliance with emission standards in §1039.101(a) and (b), §1039.102(a) and (b), §1039.104, and §1039.105 if all emission-data engines representing that family have test results showing official emission results and deteriorated emission levels at or below these standards. This also applies for all test points for emission-data engines within the family used to establish deterioration factors. Note that your FELs are considered to be the applicable emission standards with which you must comply if you participate in the ABT program in subpart H of this part.

(b) DELETE,
REPLACE WITH:
(b) Your engine family is deemed not to comply if any emission-data engine representing that family has test results showing an official emission result or a deteriorated emission level for any pollutant that is above an applicable emission standard. Similarly, your engine family is deemed not to comply if any emission-data engine representing that family has test results showing any emission level above the

applicable not-to-exceed emission standard from §1039.101, §1039.102, §1039.104, or §1039.105 for any pollutant. This also applies for all test points for emission-data engines within the family used to establish deterioration factors.

* * * * *

(c)(1) DELETE,
REPLACE WITH:
(c)(1) Additive deterioration factor for exhaust emissions. Except as specified in paragraph (c)(2) of this section, use an additive deterioration factor for exhaust emissions. An additive deterioration factor for a pollutant is the difference between exhaust emissions at the end of the useful life and exhaust emissions at the low-hour test point. In these cases, adjust the official emission results for each tested engine at the selected test point by adding the factor to the measured emissions. If the factor is less than zero, use zero. Additive deterioration factors must be specified to one more decimal place than the applicable standard.

* * * * *

§ 1039.245 How do I determine deterioration factors from exhaust durability testing?

Introductory Text DELETE,
REPLACE WITH:
This section describes how to determine deterioration factors, either with an engineering analysis, with pre-existing test data, or with new emission measurements. Apply these deterioration factors to determine whether your engines will meet the duty-cycle emission standards as described in §1039.240 throughout the engines' useful lives.

* * * * *

§ 1039.250 What records must I keep and what reports must I send to the Air Resources Board (ARB)?

(a) DELETE,
REPLACE WITH:
(a) Within 45 days after the end of the model year, send the Executive Officer or his/her designee a report describing the following information about engines you produced during that model year:

* * * * *

(c) DELETE,
REPLACE WITH:
(c) Keep data from routine emission tests (such as test-cell temperatures and relative humidity readings) for one year after we issue the associated Executive Order. Keep all

other information specified in this section for eight years after we issue your Executive Order.

* * * * *

(e) DELETE.

§ 1039.255 What decisions may ARB make regarding my Executive Order?

* * * * *

(b) DELETE,
REPLACE WITH:
(b) We may deny your application for certification if we determine that your engine family fails to comply with emission standards or other requirements of this part or the California Health and Safety Code, Division 26, and corresponding regulations. We will base our decision on all available information. If we deny your application, we will explain why in writing.

* * * * *

(d) DELETE,
REPLACE WITH:
(d) We may void your Executive Order if you do not keep the records we require or do not give us information as required under this part or the California Health and Safety Code, Division 26, and corresponding regulations.

* * * * *

Subpart D – [Reserved]

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Subpart E – In-use Testing

§ 1039.401 General Provisions.

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Subpart F – Test Procedures

§ 1039.501 How do I run a valid emission test?

(a) DELETE,
REPLACE WITH:

(a) Use the equipment and procedures for compression-ignition engines in 40 CFR part 1065 to determine whether engines meet the duty-cycle emission standards in subpart B of this part. Measure the emissions of all the exhaust constituents subject to emission standards as specified in 40 CFR part 1065. Measure CO2, N2O, and CH4 as described in §1039.235. Use the applicable duty cycles specified in §§1039.505 and 1039.510.

(b) DELETE,
REPLACE WITH:
(b) Section 1039.515 describes the supplemental procedures for evaluating whether engines meet the not-to-exceed emission limits in subpart B of this part.

* * * * *

§ 1039.505 How do I test engines using steady-state duty cycles, including ramped-modal testing?

* * * * *

(a)(1) DELETE,
REPLACE WITH:
(a)(1) For discrete-mode testing, sample emissions separately for each mode, then calculate an average emission level for the whole cycle using the weighting factors specified for each mode. Calculate cycle statistics and compare with the established criteria as specified in §1065.514 to confirm that the test is valid. Operate the engine and sampling system as follows:

(i) Engines with NOx aftertreatment. For engines that depend on aftertreatment to meet the NOx emission standard, operate the engine for 5-6 minutes, then sample emissions for 1-3 minutes in each mode. You may extend the sampling time to improve measurement accuracy of PM emissions, using good engineering judgment. If you have a longer sampling time for PM emissions, calculate and validate cycle statistics separately for the gaseous and PM sampling periods.

(ii) Engines without NOx aftertreatment. For other engines, operate the engine for at least 5 minutes, then sample emissions for at least 1 minute in each mode.

* * * * *

(c) DELETE,
REPLACE WITH:
(c) During idle mode, operate the engine at its warm idle speed as described in §1065.(d) DELETE,
REPLACE WITH:

(d) For constant-speed engines whose design prevents full-load operation for extended periods, you may ask for approval under §1065.10(c) to replace full-load operation with the maximum load for which the engine is designed to operate for extended periods.

* * * * *

ADD:
(g) To allow non-motoring dynamometers on cycles with idle, you may omit additional points from the duty-cycle regression as follows:

(1) For variable-speed engines with low-speed governors, you may omit speed, torque, and power points from the duty-cycle regression statistics if the following are met:

(i) The engine operator demand is at its minimum.

(ii) The dynamometer demand is at its minimum.

(iii) It is an idle point fnref = 0 % (idle) and Tref = 0 % (idle).

(iv) Tref < T < 5 % · Tmax mapped.

(2) For variable-speed engines without low-speed governors, you may omit torque and power points from the duty-cycle regression statistics if the following are met:

(i) The dynamometer demand is at its minimum.

(ii) It is an idle point fnref = 0 % (idle) and Tref = 0 % (idle).

(iii) fnref - (2 % · fntest) < fn < fnref + (2 % · fntest).

(iv) Tref < T < 5 % · Tmax mapped.

§ 1039.510 Which duty cycles do I use for transient testing?

* * * * *

(b) DELETE,
REPLACE WITH:
(b) The transient test sequence consists of an initial run through the transient duty cycle from a cold start, 20 minutes with no engine operation, then a final run through the same transient duty cycle. Start sampling emissions immediately after you start the engine. Calculate the official transient emission result from the following equation:

$$\text{Official transient emission result} = \frac{0.05 \cdot \text{cold-start emissions (g)} + 0.95 \cdot \text{hot-start emissions (g)}}{0.05 \cdot \text{cold-start work (kW-hr)} + 0.95 \cdot \text{hot-start work (kW-hr)}}$$

(c) DELETE,
REPLACE WITH:
(c) Calculate cycle statistics and compare with the established criteria as specified in §1065.514 to confirm that the test is valid.

(d) DELETE:

§ 1039.515 What are the test procedures related to not-to-exceed limits?

* * * * *

§ 1039.520 What testing must I perform to establish deterioration factors?

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§ 1039.525 How do I adjust emission levels to account for infrequently regenerating aftertreatment devices?

* * * * *

Subpart G – Special Compliance Provisions

§ 1039.601 What compliance provisions apply to these engines?

* * * * *

§ 1039.615 What special provisions apply to engines using noncommercial fuels?

* * * * *

§ 1039.620 What are the provisions for exempting engines used solely for competition?

* * * * *

§ 1039.625 What requirements apply under the program for equipment-manufacturer flexibility?

* * * * *

(e) Introductory Text DELETE,
REPLACE WITH:
Standards. If you produce equipment with exempted engines under this section, the engines must meet emission standards specified in this paragraph (e). Note that we consider engines to be meeting emission standards even if they are certified with a family emission limit that is higher than the emission standard that would otherwise apply.

* * * * *

(e)(1) DELETE,
REPLACE WITH:
(e)(1) Equipment manufacturers using the provisions of paragraph (d)(4) of this section, must use engines that, at a minimum, meet the applicable Tier 1 or Tier 2 emission standards in Title 13, CCR, § 2423(b)(1)(a).

* * * * *

(e)(3) DELETE,
REPLACE WITH:
(e)(3) In all other cases, engines at or above 56 kW and at or below 560 kW must meet the appropriate Tier 3 standards described in Title 13, CCR, § 2423(b)(1)(a). Engines below 56 kW and engines above 560 kW must meet the appropriate Tier 2 standards described in Title 13, CCR, § 2423(b)(1)(a).

* * * * *

(f)(4) DELETE,
REPLACE WITH:
(f)(4) An e-mail address and phone number to contact for further information, or a website that includes this contact information.

* * * * *

(g)(1) DELETE,
REPLACE WITH:
(g)(1) Before you use the provisions of this section, send the Executive Officer or his/her designee a written notice of your intent, including:

* * * * *

(ii) The name, phone number and e-mail address of a person to contact for more information.

* * * * *

(iv) The name and address of each company you expect to produce engines for the equipment you manufacture under this section.

* * * * *

(g)(2) DELETE,
REPLACE WITH:
(g)(2) For each year that an equipment manufacturer uses the provisions of this section, the manufacturer must send the Executive Officer a written report by March 31 of the following year. In the report, the manufacturer shall identify the total count of units sold by the manufacturer in the preceding year for each power category, based on actual U.S.-directed production volume and, if available, California-directed production volume. The manufacturer shall also identify in the report the percentages of U.S.-directed production volumes and, if available, California-directed production volumes, that correspond to the number of units in each power category and the cumulative numbers and percentages of units for all the units sold by the manufacturer under this section for each power category. The percentage figures may be omitted if the manufacturer states in the report that it will not be using the percent-of-production allowances in paragraph (b)(1) of this section. If the manufacturer(s) of the engine installed in the equipment has not already been identified as required in §1039.625(g)(1)(iv), the equipment manufacturer shall identify the name and address of this engine manufacturer(s) in the report.

* * * * *

(h)(1) DELETE,
REPLACE WITH:
(h)(1) The model number, serial number, engine family name, and the date of manufacture for each engine and piece of equipment.

(j)(2) DELETE,
REPLACE WITH:
(j)(2) Engine labeling. Engine manufacturers shall meet the labeling requirements provided in §1039.135 for all engines produced under the allowances of this section, except that manufacturers may omit the family emission limits from the label only if the limits are more stringent than the emissions standards. Additionally, the following statement must be substituted for the statement of compliance required under §1039.135(12):

> "THIS ENGINE COMPLIES WITH CALIFORNIA EMISSION REQUIREMENTS UNDER 13 CCR 2423(d). SELLING OR INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER THAN FOR THE EQUIPMENT FLEXIBILITY PROVISIONS CITED MAY BE A VIOLATION OF STATE LAW SUBJECT TO CIVIL PENALTY." [Insert Engine Family Name]

The referencing of similar federal requirements in combination with California references under this provision is permitted. Furthermore, the Executive Officer may, upon request, approve alternate labeling specifications provided that they meet the intent of this requirement.

§ 1039.626 What special provisions apply to equipment imported under the equipment-manufacturer flexibility program?

* * * * *

(b)(1) DELETE,
REPLACE WITH:
(b)(1) Before ~~January 1 of the first year~~ you ~~intend to~~ use the provisions of this section, send the Executive Officer of the Air Resources Board, or his/her designee, a written notice of your intent, including:

* * * * *

§ 1039.627 What are the incentives for equipment manufacturers to use cleaner engines?

* * * * *

§ 1039.630 What are the economic hardship provisions for equipment manufacturers?

* * * * *

§ 1039.635 What are the hardship provisions for engine manufacturers?

* * * * *

§ 1039.640 What special provisions apply to branded engines?

* * * * *

§ 1039.645 What special provisions apply to engines used for transportation refrigeration units?

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§ 1039.650 [Reserved]

* * * * *

§ 1039.660 What special provisions apply to Independent Commercial Importers?

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Subpart H – Averaging, Banking, and Trading for Certification

§ 1039.701 General provisions.

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§ 1039.705 How do I generate and calculate emission credits?

* * * * *

(a) DELETE,
REPLACE WITH:
(a) [Reserved]

(b) DELETE,
REPLACE WITH:
(b) For each participating family, calculate positive or negative emission credits relative to the otherwise applicable emission standard. Calculate positive emission credits for a family that has an FEL below the standard. Calculate negative emission credits for a family that has an FEL above the standard. Sum your positive and negative credits for the model year before rounding. Round the sum of emission credits to the nearest kilogram (kg), using consistent units throughout the following equation:

Emission credits (kg) = (Std - FEL) × (Volume) × (AvgPR) × (UL) × (10^{-3})

Where:

Std = the emission standard, in grams per kilowatt-hour, that applies under subpart B of this part for engines not participating in the ABT program of this subpart (the "otherwise applicable standard").

FEL = the family emission limit for the engine family, in grams per kilowatt-hour.

Volume = the number of engines eligible to participate in the averaging, banking, and trading program within the given engine family during the model year, as described in paragraph (c) of this section.

AvgPR = the average maximum engine power of all the engine configurations within an engine family, calculated on a sales-weighted basis, in kilowatts.

UL = the useful life for the given engine family, in hours.

* * * * *

§ 1039.710 How do I average emission credits?

* * * * *

§ 1039.715 How do I bank emission credits?

DELETE,
REPLACE WITH:
(a) Banking is the retention of emission credits by the manufacturer generating the emission credits for use in future model years for averaging or trading.

(b) You may designate any emission credits you plan to bank in the reports you submit under §1039.730 as reserved credits. During the model year and before the due date for the final report, you may designate your reserved emission credits for averaging or trading.

(c) Reserved credits become actual emission credits when you submit your final report. However, we may revoke these emission credits if we are unable to verify them after reviewing your reports or auditing your records.

§ 1039.720 How do I trade emission credits?

* * * * *

(b) DELETE,
REPLACE WITH:
(b) You may trade actual emission credits as described in this subpart. You may also trade reserved emission credits, but we may revoke these emission credits based on our review of your records or reports or those of the company with which you traded emission credits. You may trade banked credits within an averaging set to any certifying manufacturer.

* * * * *

§ 1039.725 What must I include in my application for certification?

* * * * *

(b)(2) DELETE,
REPLACE WITH:
(b)(2) Detailed calculations of projected emission credits (positive or negative) based on projected production volumes. We may require you to include similar calculations from your other engine families to demonstrate that you will be able to avoid a negative credit

balance for the model year. If you project negative emission credits for a family, state the source of positive emission credits you expect to use to offset the negative emission credits.

§ 1039.730 What ABT reports must I send to ARB?

* * * * *

(b)(3) DELETE,
REPLACE WITH:
(b)(3) The FEL for each pollutant. If you change the FEL after the start of production, identify the date that you started using the new FEL and/or give the engine identification number for the first engine covered by the new FEL. In this case, identify each applicable FEL and calculate the positive or negative emission credits as specified in §1039.225.

(b)(4) DELETE,
REPLACE WITH:
(b)(4) The projected and actual U.S.-directed production volumes, and California production volumes if available, for the model year. If you changed an FEL during the model year, identify the actual production volume associated with each FEL.

(b)(5) DELETE,
REPLACE WITH:
(b)(5) Maximum engine power for each engine configuration, and the average engine power weighted by U.S.-directed production volumes, and California production volumes if available, for the engine family.

* * * * *

(c)(1) DELETE,
REPLACE WITH:
(c)(1) Show that your net balance of emission credits from all your participating engine families in each averaging set in the applicable model year is not negative.

* * * * *

(f)(2) DELETE,
REPLACE WITH:
(f)(2) If you or we determine within 270 days after the end of the model year that errors mistakenly decreased your balance of emission credits, you may correct the errors and recalculate the balance of emission credits. You may not make these corrections for errors that are determined more than 270 days after the end of the model year. If you report a negative balance of emission credits, we may disallow corrections under this paragraph (f)(2).

* * * * *

§ 1039.735 What records must I keep?

* * * * *

(b) DELETE,
REPLACE WITH:
(b) Keep the records required by this section for at least eight years after the due date for the end-of-year report. You may not use emission credits for any engines if you do not keep all the records required under this section. You must therefore keep these records to continue to bank valid credits. Store these records in any format and on any media, as long as you can promptly send us organized, written records in English if we ask for them. You must keep these records readily available. We may review them at any time.

* * * * *

(d)(6) DELETE,
REPLACE WITH:
(d)(6) Purchaser. You must also identify the purchaser and destination for each engine you produce to the extent this information is available.

(e) We may require you to keep additional records or to send us relevant information not required by this section in accordance with the California Health and Safety Code, Division 26, and corresponding regulations.

§ 1039.740 What restrictions apply for using emission credits?

* * * * *

§ 1039.745 What can happen if I do not comply with the provisions of this subpart?

* * * * *

Subpart I – Definitions and Other Reference Information

§ 1039.801 What definitions apply to this part?

* * * * *

ADD:
40 CFR part 1039 or Part 1039 means Part 1039 and applicable subparts of the California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, PART I-D, when referenced in unrevised (i.e., " * * * * * * ") sections. When referenced in revised sections, the term

40 CFR part 1039 refers to the federal regulations of the same title, last amended on June 28, 2011.

40 CFR part 1065 DELETE,
REPLACE WITH:
40 CFR part 1065 or Part 1065 means Part 1065 and applicable subparts of the California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, PART I-E, when referenced in unrevised (i.e., " * * * * * * ") sections. When referenced in revised sections, the term 40 CFR part 1065 refers to the federal regulations of the same title, last amended on June 28, 2011.

40 CFR part 1068 DELETE,
REPLACE WITH:
40 CFR part 1068 or Part 1068 means Part 1068 and applicable subparts of the California Exhaust Emission Standards and Test Procedures for New 2011 and Later Tier 4 Off-Road Compression-Ignition Engines, PART I-F, when referenced in unrevised (i.e., " * * * * * * ") sections. When referenced in revised sections, the term 40 CFR part 1068 refers to the federal regulations of the same title, last amended on June 28, 2011.

* * * * *

ADD:
Alcohol-fueled engine means an engine that is designed to run using an alcohol fuel. For purposes of this definition, alcohol fuels do not include fuels with a nominal alcohol content below 25 percent by volume.

* * * * *

ADD:
Carryover means relating to certification based on emission data generated from an earlier model year as described in §1039.235(d).

Certification DELETE,
REPLACE WITH:
Certification means relating to the process of obtaining an executive order for an engine family complying with the off-road compression-ignition engine emission standards and requirements specified in Title 13, CCR, Chapter 9, §§ 2420-2427.

* * * * *

Constant Speed Operation DELETE,
REPLACE WITH:
Constant-speed operation has the meaning given in §1065.1001.

* * * * *

ADD:
Date of manufacture has the meaning given in §1068.30.

* * * * *

Emission-control system DELETE,
REPLACE WITH:
Emission-control system means any device, system, or element of design that controls or reduces the emissions of regulated pollutants from an engine.

* * * * *

Engine configuration DELETE,
REPLACE WITH:
Engine configuration means a unique combination of engine hardware and calibration within an engine family. Engines within a single engine configuration differ only with respect to normal production variability or factors unrelated to emissions.

* * * * *

Intermediate test speed DELETE,
REPLACE WITH:
Intermediate test speed has the meaning given in §1065.1001.

Model year (2) DELETE,
REPLACE WITH:
(2) For an engine that is converted to an off-road engine after being placed into service as a stationary engine, or being certified and placed into service as a vehicle, model year means the calendar year in which the engine was originally produced. For a vehicle that is converted to be an off-road engine without having been certified, model year means the calendar year in which the engine becomes a new off-road engine. (see definition of "new off-road engine," paragraph (2).).

* * * * *

ADD:
Model year (5)(iii) For imported engines described in paragraph (5)(iii) of the definition of "new off-road engine," model year means the calendar year in which the engine is first assembled in its imported configuration, unless specified otherwise in this part or in §1068.

* * * * *

New nonroad engine DELETE,

REPLACE WITH:
New off-road engine means any of the following things:
(1) A freshly manufactured off-road engine for which the ultimate purchaser has never received the equitable or legal title. This kind of engine might commonly be thought of as "brand new." In the case of this paragraph (1), the engine is new from the time it is produced until the ultimate purchaser receives the title or the product is placed into service, whichever comes first.

(2) An engine originally manufactured as a vehicle or a stationary engine that is later used or intended to be used in a piece of off-road equipment. In this case, the engine is no longer a vehicle or stationary engine and becomes a "new off-road engine." The engine is no longer new when it is placed into off-road service. This paragraph (2) applies if a vehicle or a stationary engine is installed in off-road equipment, or if a vehicle or a piece of stationary equipment is modified (or moved) to become off-road equipment.

(3) An off-road engine that has been previously placed into service in an application we exclude under §1039.5, when that engine is installed in a piece of equipment that is covered by this part 1039. The engine is no longer new when it is placed into off-road service covered by this part 1039. For example, this would apply to a marine diesel engine that is no longer used in a marine vessel but is instead installed in a piece of off-road equipment subject to the provisions of this part.

(4) An engine not covered by paragraphs (1) through (3) of this definition that is intended to be installed in new off-road equipment. This generally includes installation of used engines in new equipment. The engine is no longer new when the ultimate purchaser receives a title for the equipment or the product is placed into service, whichever comes first.

(5) An imported off-road engine, subject to the following provisions:

(i) An imported off-road engine covered by a certificate of conformity issued under this part that meets the criteria of one or more of paragraphs (1) through (4) of this definition, where the original engine manufacturer holds the certificate, is new as defined by those applicable paragraphs.

(ii) An imported engine covered by a certificate of conformity issued under this part, where someone other than the original engine manufacturer holds the certificate (such as when the engine is modified after its initial assembly), is a new off-road engine when it is imported. It is no longer new when the ultimate purchaser receives a title for the engine or it is placed into service, whichever comes first.

(iii) An imported off-road engine that is not covered by a certificate of conformity issued under this part at the time of importation is new, but only if it was produced on or after the dates shown in the following table. This addresses uncertified engines and equipment initially placed into service that someone seeks to import into the United

States. Importation of this kind of engine (or equipment containing such an engine) is generally prohibited by §1068. However, the importation of such an engine is not prohibited if the engine has an earlier model year than that identified in the following table:

* * * * *

Nonmethane hydrocarbon DELETE,
REPLACE WITH:
Nonmethane hydrocarbons (NMHC) means the sum of all hydrocarbon species except methane. Refer to §1065.660 for NMHC determination.

* * * * *

ADD:
Owners manual means a document or collection of documents prepared by the engine manufacturer for the owner or operator to describe appropriate engine maintenance, applicable warranties, and any other information related to operating or keeping the engine. The owners manual is typically provided to the ultimate purchaser at the time of sale.

Oxides of Nitrogen DELETE,
REPLACE WITH:
Oxides of nitrogen has the meaning given in §1065.1001.

* * * * *

Power Category (5) Round DELETE,
REPLACE WITH:
(5) Round has the meaning given in §1065.1001.

* * * * *

Steady-state DELETE,
REPLACE WITH:
Steady-state has the meaning given in §1065.1001.

* * * * *

Total hydrocarbon DELETE,
REPLACE WITH:
Total hydrocarbon has the meaning given in 40 CFR 1065.1001. This generally means the combined mass of organic compounds measured by the specified procedure for measuring total hydrocarbon, expressed as a hydrocarbon with an atomic hydrogen-to-carbon ratio of 1.85:1.

Total hydrocarbon equivalent DELETE,
REPLACE WITH:
Total hydrocarbon equivalent has the meaning given in 40 CFR 1065.1001. This generally means the sum of the carbon mass contributions of non-oxygenated hydrocarbons, alcohols and aldehydes, or other organic compounds that are measured separately as contained in a gas sample, expressed as exhaust hydrocarbon from petroleum--fueled engines. The atomic hydrogen-to-carbon ratio of the equivalent hydrocarbon is 1.85:1.

* * * * *

§ 1039.805 What symbols, acronyms, and abbreviations does this part use?

* * * * *

ADD:
CH_4 methane

* * * * *

ADD:
N_2O nitrous oxide

* * * * *

§ 1039.810 DELETE.

§ 1039.815 What provisions apply to confidential information?

* * * * *

§ 1039.820 How do I request a hearing?

* * * * *

ADD:
§1039.825 What reporting and recordkeeping requirements apply under this part?

~~Under the Paperwork Reduction Act (44 U.S.C. 3501 et seq), the Office of Management and Budget approves the reporting and recordkeeping specified in the applicable regulations.~~ The following items illustrate the reporting and recordkeeping we require for engines and equipment regulated under this part:

(a) We specify the following requirements related to engine certification in this §1039:

(1) In §1039.20 we require engine manufacturers to label stationary engines that do not meet the standards in this part.

(2) In §1039.135 we require engine manufacturers to keep certain records related to duplicate labels sent to equipment manufacturers.

(3) [Reserved]

(4) In subpart C of this part we identify a wide range of information required to certify engines.

(5) [Reserved]

(6) [Reserved]

(7) In subpart G of this part we identify several reporting and recordkeeping items for making demonstrations and getting approval related to various special compliance provisions. For example, equipment manufacturers must submit reports and keep records related to the flexibility provisions in §1039.625.

(8) In §1039.725, 1039.730, and 1039.735 we specify certain records related to averaging, banking, and trading.

(b) We specify the following requirements related to testing in §1065:

(1) In §1065.2 we give an overview of principles for reporting information.

(2) In §1065.10 and 1065.12 we specify information needs for establishing various changes to published test procedures.

(3) In §1065.25 we establish basic guidelines for storing test information.

(4) In §1065.695 we identify data that may be appropriate for collecting during testing of in-use engines using portable analyzers.

(c) We specify the following requirements related to the general compliance provisions in §1068:

(1) In §1068.5 we establish a process for evaluating good engineering judgment related to testing and certification.

(2) In §1068.25 we describe general provisions related to sending and keeping information.

(3) In §1068.27 we require manufacturers to make engines available for our testing or inspection if we make such a request.

(4) In §1068.105 we require equipment manufacturers to keep certain records related to duplicate labels from engine manufacturers.

(5) In §1068.120 we specify recordkeeping related to rebuilding engines.

(6) In §1068, subpart C, we identify several reporting and recordkeeping items for making demonstrations and getting approval related to various exemptions.

(7) In §1068, subpart D, we identify several reporting and recordkeeping items for making demonstrations and getting approval related to importing engines.

(8) In §1068.450 and 1068.455 we specify certain records related to testing production-line engines in a selective enforcement audit.

(9) In §1068.501 we specify certain records related to investigating and reporting emission-related defects.

(10) In §1068.525 and 1068.530 we specify certain records related to recalling nonconforming engines.

Appendix I to Part 1039 – Reserved

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Appendix II to Part 1039 DELETE,
REPLACE WITH:
Appendix II to Part 1039 – Steady-state Duty Cycles

(a) The following duty cycles apply for ~~of~~ constant-speed engines:

(1) The following duty cycle applies for discrete-mode testing:

D2 mode number	Engine speed	Torque (percent) [1]	Weighting factors

1	Engine governed	100	0.05
2	Engine governed	75	0.25
3	Engine governed	50	0.30
4	Engine governed	25	0.30
5	Engine governed	10	0.10

[1] The percent torque is relative to maximum test torque.

(2) The following duty cycle applies for ramped-modal testing:

RMC mode	Time in mode (seconds)	Engine speed	Torque (percent) [1,2]
1a Steady-state	53	Engine Governed	100
1b Transition	20	Engine Governed	Linear transition
2a Steady-state	101	Engine Governed	10
2b Transition	20	Engine Governed	Linear transition
3a Steady-state	277	Engine Governed	75
3b Transition	20	Engine Governed	Linear transition
4a Steady-state	339	Engine Governed	25
4b Transition	20	Engine Governed	Linear transition
5 Steady-state	350	Engine Governed	50

[1] The percent torque is relative to maximum test torque.
[2] Advance from one mode to the next within a 20-second transition phase. During the transition phase, command a linear progression from the torque setting of the current mode to the torque setting of the next mode.

(b) The following duty cycles apply for variable-speed engines with maximum engine power below 19 kW:

(1) The following duty cycle applies for discrete-mode testing:

G2 mode number	Engine speed [1]	Torque (percent) [2]	Weighting factors
1	Maximum test speed	100	0.09
2	Maximum test speed	75	0.20
3	Maximum test speed	50	0.29
4	Maximum test speed	25	0.30
5	Maximum test speed	10	0.07
6	Warm idle	0	0.05

[1] Speed terms are defined in §1065.
[2] The percent torque is relative to the maximum torque at the commanded test speed.

(2) The following duty cycle applies for ramped-modal testing:

RMC mode	Time in mode (seconds)	Engine speed [1,3]	Torque (percent) [2,3]
1a Steady-state	41	Warm Idle	0
1b Transition	20	Linear transition	Linear transition
2a Steady-state	135	Maximum Test Speed	100
2b Transition	20	Maximum Test Speed	Linear transition
3a Steady-state	112	Maximum Test Speed	10
3b Transition	20	Maximum Test Speed	Linear transition
4a Steady-state	337	Maximum Test Speed	75
4b Transition	20	Maximum Test Speed	Linear transition
5a Steady-state	518	Maximum Test Speed	25
5b Transition	20	Maximum Test Speed	Linear transition
6a Steady-state	494	Maximum Test Speed	50
6b Transition	20	Linear transition	Linear transition
7 Steady-state	43	Warm Idle	0

[1] Speed terms are defined in §1065.
[2] The percent torque is relative to the maximum torque at the commanded engine speed.
[3] Advance from one mode to the next within a 20-second transition phase. During the transition phase, command a linear progression from the torque setting of the current mode to the torque setting of the next mode, and simultaneously command a similar linear progression for engine speed if there is a change in speed setting.

(c) The following duty cycles apply for variable-speed engines with maximum engine power at or above 19 kW:

(1) The following duty cycle applies for discrete-mode testing:

C1 mode number	Engine speed [1]	Torque (percent) [2]	Weighting factors
1	Maximum test speed	100	0.15
2	Maximum test speed	75	0.15
3	Maximum test speed	50	0.15
4	Maximum test speed	10	0.10
5	Intermediate test	100	0.10
6	Intermediate test	75	0.10
7	Intermediate test	50	0.10
8	Warm Idle	0	0.15

[1] Speed terms are defined in §1065.
[2] The percent torque is relative to the maximum torque at the commanded test speed.

(2) The following duty cycle applies for ramped-modal testing:

RMC mode	Time in mode (seconds)	Engine speed [1,3]	Torque (percent) [2,3]
1a Steady-state	126	Warm Idle	0
1b Transition	20	Linear Transition	Linear Transition
2a Steady-state	159	Intermediate Speed	100
2b Transition	20	Intermediate Speed	Linear Transition
3a Steady-state	160	Intermediate Speed	50
3b Transition	20	Intermediate Speed	Linear Transition
4a Steady-state	162	Intermediate Speed	75
4b Transition	20	Linear Transition	Linear Transition
5a Steady-state	246	Maximum Test Speed	100
5b Transition	20	Maximum Test Speed	Linear Transition
6a Steady-state	164	Maximum Test Speed	10
6b Transition	20	Maximum Test Speed	Linear Transition
7a Steady-state	248	Maximum Test Speed	75
7b Transition	20	Maximum Test Speed	Linear Transition
8a Steady-state	247	Maximum Test Speed	50
8b Transition	20	Linear Transition	Linear Transition
9 Steady-state	128	Warm Idle	0

[1] Speed terms are defined in 40 CFR part 1065.
[2] The percent torque is relative to the maximum torque at the commanded engine speed.
[3] Advance from one mode to the next within a 20-second transition phase. During the transition phase, command a linear progression from the torque setting of the current mode to the torque setting of the next mode, and simultaneously command a similar linear progression for engine speed if there is a change in speed setting.

Appendix III to Part 1039 DELETE.

Appendix IV to Part 1039 DELETE.

Appendix V to Part 1039 – [Reserved]

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Appendix VI to Part 1039 – Nonroad Compression-Ignition Composite Transient Cycle

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APPENDIX L

PROPOSED TEST PROCEDURES

Part I – E (Part 1065)

(2011 and Later Model Years)

Tier 4 Off-Road Compression-Ignition Engines

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