ATTACHMENT A

PROPOSED THIRD 15-DAY REGULATION ORDER

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PROPOSED REGULATION ORDER

The originally proposed regulatory language is shown in ~~strikethrough~~ to indicate proposed deletions from existing regulations and regular text indicates the additions originally proposed to existing regulations. Deletions and additions to the originally proposed language that were made public with the first "Notice of Public Availability of Modified Text and Availability of Additional Documents and/or Information" are shown in ~~double strikethrough~~ and double underline format, respectively. Additional proposed deletions and additions to the originally proposed language that were made public with the "Second Notice of Public Availability of Modified Text" are shown in ~~**bold double strikeout**~~ and **bold double underline** format, respectively. Additional further proposed deletions and additions to the originally proposed language that are made public for comment with the "Third Notice of Public Availability of Modified Text and Availability of Additional Documents" are shown in ~~***italicized bold double strikethrough***~~ and ***italicized bold double underline*** format, respectively.

Repeal existing sections 95480, 95480.1, 95480.2, 95480.3, 95480.4, 95480.5, 95481, 95482, 95483, 95484, 95485, 95486, 95487, 95488, 95489, and 95490, title 17, California Code of Regulations, as follows:

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

~~Subarticle 7. Low Carbon Fuel Standard~~

~~§ 95480. Purpose~~

~~The purpose of this regulation is to implement a low carbon fuel standard, which will reduce greenhouse gas emissions by reducing the full fuel-cycle, carbon intensity of the transportation fuel pool used in California, pursuant to the California Global Warming Solutions Act of 2006 (Health & Safety Code (H&S), section 38500 et.seq.).~~

~~NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 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). 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).~~

~~§ 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(b), (c) and (d) 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:~~

~~(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 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). 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).~~

~~§ 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 calendar 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 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). 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).~~

~~§ 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 with ARB, pursuant to this section, as a regulated party in the LCFS Reporting Tool (LRT), by providing the organization name,~~

~~organization address, organization federal employer identification number, primary contact name, telephone number and email address.~~

~~(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 opt-in regulated party 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 for an opt-in fuel subject to section 95480.1(b) may choose whichever 2020 CI value specified in section 95482(b) and (c), for gasoline and diesel substitutes, respectively, applies to that opt-in fuel. A regulated party choosing a CI value pursuant to this paragraph (3) must use an energy economy ratio (EER) in its 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.~~

~~(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) 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 Officer 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.~~

~~(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~~
~~Stationary Source Division~~
~~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 any regulated party that has opted into the LCFS program, including a regulated party that has opted out of the LCFS regulation.~~

~~NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 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). 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).~~

~~§ 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) 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 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). 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).~~

~~§ 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);~~

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

~~(3) Submittal of information to the Executive Officer pursuant to the crude oil innovative method provisions set forth in section 95486(b)(2)(A)4.~~

~~(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 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). 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).~~

~~§ 95481. Definitions and Acronyms.~~

~~(a) *Definitions.* For the purposes of sections 95480 through 95490, the definitions in Health and Safety Code sections 39010 through 39060 shall apply, except as otherwise specified in this section, sections 95480.1 through 95480.5, or sections 95482 through 95489:~~

~~(1) "Aggregation Indicator" means an identifier 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.~~

~~(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.~~

~~(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.~~

~~(5) "Battery electric vehicle (BEV)" means any vehicle that operates solely by use of a battery or battery pack, or that is powered primarily through the use of an electric battery or battery pack but uses a flywheel or capacitor that stores energy produced by the electric motor or through regenerative braking to assist in vehicle operation.~~

~~(6) "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.~~

~~(7) "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.~~

~~(8) "Biofuel Production Facility" means an identifier that refers to the production facility in which the biofuel was produced.~~

~~(9) "Biogas" (also called biomethane) means natural gas that 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.~~

~~(10) "Biogas CNG" means CNG consisting solely of compressed biogas.~~

~~(11) "Biogas LNG" means LNG consisting solely of liquefied biogas.~~

~~(12) "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.~~

~~(13) "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.~~

~~(14) "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.~~

~~(15) "Business Partner" 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.~~

~~(16) "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).~~

~~(17) "Compressed Natural Gas (CNG)" means natural gas that has been compressed to a pressure greater than ambient pressure.~~

~~(18) "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).~~

~~(19) "Day" means a calendar day unless otherwise specified as a business day.~~

~~(20) "Diesel Fuel" (also called conventional diesel fuel) has the same meaning as specified in title 13, CCR, section 2281(b).~~

~~(21) "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.~~

~~(22) "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.~~

~~(23) "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.~~

~~(24) "Electric Vehicle (EV)," for purposes of this regulation, refers to Battery Electric Vehicles (BEVs) and Plug-In Hybrid Electric Vehicles (PHEVs).~~

~~(25) "Executive Officer" means the Executive Officer of the Air Resources Board, or his or her designee.~~

~~(26) "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.~~

~~(27) "Finished fuel" means a fuel that is used directly in a vehicle for transportation purposes without requiring additional chemical or physical processing.~~

~~(28) "Fossil CNG" means CNG that is derived solely from petroleum or fossil sources, such as oil fields and coal beds.~~

~~(29) "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).~~

~~(30) "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.~~

~~(31) "HDV" means a heavy-duty vehicle that is rated at 14,001 or more pounds gross vehicle weight rating (GVWR).~~

~~(32) "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.~~

~~(33) "Hybrid electric vehicle (HEV)" means any vehicle that can draw propulsion energy from both of the following on-vehicle sources of stored energy: 1) a consumable fuel and 2) an energy storage device such as a battery, capacitor, or flywheel.~~

~~(34) "Import" means to bring a product from outside California into California.~~

~~(35) "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.~~

~~(36) "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).~~

~~(37) "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.~~

~~(38) "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.~~

~~(39) "Liquefied Natural Gas (LNG)" means natural gas that has been liquefied.~~

~~(40) "Liquefied petroleum gas (LPG or propane)" has the same meaning as defined in Vehicle Code section 380.~~

~~(41) "LRT Reporting Deadlines" means the quarterly and annual reporting dates specified in section 95484(b)(1).~~

~~(42) "Motor vehicle" has the same meaning as defined in section 415 of the Vehicle Code.~~

~~(43) "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.~~

~~(44) "Multimedia evaluation" has the same meaning as specified in H&S section 43830.8(b) and (c).~~

~~(45) "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.~~

~~(46) "On-road" means a vehicle that is designed to be driven on public highways and roadways and that is registered or is capable of being registered by the California Department of Motor Vehicles (DMV) under Vehicle Code section 4000 et seq. or DMV's equivalent in another state, province, or country; or the International Registration Plan. A vehicle covered under ARB's In-Use Off-Road Regulation, title 13, CCR, section 2449, is not covered under this definition.~~

~~(47) "Petroleum Intermediate" means a petroleum product that can be further processed to produce CARBOB, diesel, or other petroleum blendstocks.~~

~~(48) "Physical Pathway Code (PPC)" means the code that describes the applicable physical pathway, as defined in section 95484(c)(2).~~

~~(49) "Plug-In Hybrid Electric Vehicle (PHEV)" means a hybrid electric vehicle with the capability to charge a battery from an off-vehicle electric energy source that cannot be connected or coupled to the vehicle in any manner while the vehicle is being driven.~~

~~(50) "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.~~

~~(51) "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 of a fuel that has its production facility for that fuel located outside California and has opted into the LCFS pursuant to section 95480.3.~~

~~(52) "Production facility" means, with respect to any liquid fuel (other than LNG), a facility at which the fuel is produced. "Production facility" means, with respect to natural gas (CNG, LNG or biogas), a facility 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.~~

~~(53) "Public access fueling facility" means a fueling facility that is not a private access fueling dispenser.~~

~~(54) "Regulated party" means a person who, pursuant to section 95484(a), must meet the average carbon intensity requirements in section 95482 or 95483.~~

~~(55) "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.~~

~~(56) "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.~~

~~(57) "Transaction Date" means the title transfer date as shown on the Product Transfer Document.~~

~~(58) "Transaction Quantity" means the amount of fuel reported in a transaction. A Transaction Quantity may be reported in gallons, KWh, scf, or other appropriate units.~~

~~(59) "Transaction Type" means 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 for "transportation fuel."~~

~~(60) "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 Code of Federal Regulations.~~
~~(7) "CI" means carbon intensity.~~
~~(8) "CNG" means compressed natural gas.~~

~~(9) "EER" means energy economy ratio.~~
~~(10) "EV" means electric vehicle.~~
~~(11) "FCV" means fuel cell vehicles.~~
~~(12) "FFV" means flex fuel vehicles.~~
~~(13) "gCO2E/MJ" means grams of carbon dioxide equivalent per mega joule.~~
~~(14) "GREET" means the Greenhouse gases, Regulated Emissions, and Energy use in Transportation model.~~
~~(15) "GVWR" means gross vehicle weight rating.~~
~~(16) "HDV" means heavy-duty vehicles.~~
~~(17) "HEV" means hybrid electric vehicle.~~
~~(18) "ICEV" means internal combustion engine vehicle.~~
~~(19) "LCFS" means Low Carbon Fuel Standard.~~
~~(20) "LDV" means light-duty vehicles.~~
~~(21) "LNG" means liquefied natural gas.~~
~~(22) "LPG" means liquefied petroleum gas.~~
~~(23) "LRT" means LCFS reporting tool.~~
~~(24) "MCON" means marketable crude oil name.~~
~~(25) "MDV" means medium-duty vehicles.~~
~~(26) "MT" means metric tons of carbon dioxide equivalent.~~
~~(27) "PHEV" means plug-in hybrid vehicles.~~
~~(28) "TEOR" means thermally enhanced oil recovery.~~
~~(29) "ULSD" means California ultra low sulfur diesel.~~

~~NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 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). 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).~~

~~§ 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(b).~~

~~(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)*~~
~~2010~~	~~Reporting Only~~
~~2011~~	~~95.61~~
~~2012~~	~~95.37~~
~~2013~~	~~97.96~~
~~2014~~	~~97.47~~
~~2015~~	~~96.48~~
~~2016~~	~~95.49~~
~~2017~~	~~94.00~~
~~2018~~	~~92.52~~
~~2019~~	~~91.03~~
~~2020 and subsequent years~~	~~89.06~~

~~* 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 supplied to 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 supplied to California refineries in 2010.~~

(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)*~~
~~2010~~	~~Reporting Only~~
~~2011~~	~~94.47~~
~~2012~~	~~94.24~~
~~2013~~	~~97.05~~

~~2014~~	~~96.56~~
~~2015~~	~~95.58~~
~~2016~~	~~94.60~~
~~2017~~	~~93.13~~
~~2018~~	~~91.66~~
~~2019~~	~~90.19~~
~~2020 and subsequent years~~	~~88.23~~

~~** 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 supplied to 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 supplied to California refineries in 2010.~~

~~NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 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). 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).~~

~~§ 95483. Average Carbon Intensity Requirements for Alternative Fuels~~

~~(a) The requirements of this section apply to a regulated party that provides an alternative fuel as a transportation fuel in California.~~

~~(b) *Carbon Intensity Requirements for an Alternative Fuel Other Than a Biomass-Based Diesel Fuel -Intended for Use in a Single Fuel Vehicle.*~~

~~(1) A regulated party must use the average carbon intensity value for gasoline set forth in section 95482(b) for its alternative fuel, other than biomass-based diesel fuel, if the alternative fuel is used or intended to be used in any single-fuel:~~

~~(A) light-duty vehicle, or~~

~~(B) medium-duty vehicle.~~

~~(2) A regulated party must use the average carbon intensity value for diesel fuel set forth in section 95482(c) for its alternative fuel, other than biomass-based diesel fuel, that is used or intended to be used in any single-fuel application not identified in section 95483(b)(1).~~

~~(c) *Carbon Intensity Requirements for Biomass-Based Diesel Fuel Provided for Use in a Single Fuel Vehicle.* A regulated party must use the average carbon intensity value for diesel fuel set forth in section 95482(c) if its biomass-based diesel fuel is used or intended to be used in any single-fuel:~~

~~(1) light-duty vehicle;~~

~~(2) medium-duty vehicle;~~

~~(3) heavy-duty vehicle;~~

~~(4) off-road transportation application;~~

~~(5) off-road equipment application;~~

~~(6) locomotive or commercial harbor craft application; or~~

~~(7) non-stationary source application not otherwise specified in 1-6 above.~~

~~(d) *Carbon Intensity Requirements for Transportation Fuels Intended for Use in Multi-Fuel Vehicles.*~~

~~(1) For an alternative fuel provided for use in a multi-fueled vehicle, a regulated party must use:~~

~~(A) the average carbon intensity value for gasoline set forth in section 95482(b) if one of the fuels used in the multi-fuel vehicle is gasoline; or~~

~~(B) the average carbon intensity value for diesel fuel set forth in section 95482(c) if one of the fuels used in the multi-fuel vehicle is diesel fuel.~~

~~(2) For an alternative fuel provided for use in a multi-fueled vehicle (including a bi-fuel vehicle) that does not use gasoline or diesel fuel, a regulated party must use:~~

~~(A) the average carbon intensity value for gasoline set forth in section 95482(b) if that alternative fuel is used or intended to be used in:~~

~~1. light-duty vehicle, or~~

~~2. medium-duty vehicle.~~

~~(B) the average carbon intensity value for diesel set forth in section 95482(c) if that alternative fuel is used or intended to be used in an application not identified in section 95483(d)(2)(A).~~

~~NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 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). 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).~~

~~§ 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. 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~~ $\cancel{Deficits^{XD}_{Incremental20XX}}$, ~~as defined and set forth in section 95486(b)(2)(A)1., 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~~ $\cancel{Deficits^{XD}_{Base}}$, ~~as defined and set forth in section 95486(b)(2)(A)1., 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. 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~~ $\cancel{Deficits^{XD}_{Incremental20XX}}$ ~~, as defined and set forth in section 95486(b)(2)(A)1, in the transferor's annual credits and deficits balance calculation set forth in section 95485(a)(2); and the recipient under b. above must include~~ $\cancel{Deficits^{XD}_{Base}}$ ~~, as defined and set forth in section 95486(b)(2)(A)1., 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, CCR, 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. 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 $Deficits^{XD}_{Incremental20XX}$, as defined and set forth in section 95486(b)(2)(A)1., 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., 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. 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 $Deficits^{XD}_{Incremental20XX}$, as defined and set forth in section 95486(b)(2)(A)1., 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., 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. 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 $Deficits^{XD}_{Incremental20XX}$, as defined and set forth in section 95486(b)(2)(A)1., 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., 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 EVs 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 Executive Officer 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.1) For transportation fuel supplied to a fleet of three or more EVs, a person 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 Executive Officer 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.~~

~~(C.2) For transportation fuel supplied to a fleet through the use of a battery switch station, the station owner is eligible to be a regulated party. If the station owner is not the regulated party for a specific amount 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 Executive Officer approval.~~

~~(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 Executive Officer 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 Executive Officer approval. To receive credit for this transportation fuel, the Electrical Distribution Utility must meet all requirements set forth in section 95484(a)(6)(A).~~

~~(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) *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)(3) and 95484(b)(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 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.

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)(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, CCR, 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), 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.).~~

~~The marketable crude oil name (MCON) or other crude oil name designation, volume (in gal), and Country (or State) of origin for each crude supplied to the refinery during the quarter.~~

~~(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)(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 (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)(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)(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 electricity dispensed (in kW-hr).~~

~~4. For each workplace private access charging facility, the amount of electricity dispensed (in kW-hr).~~

~~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(b)(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 of its refineries, the MCON or other crude oil name designation, volume (in gal), and Country (or State) of origin for each crude supplied to the refinery during the annual compliance period.~~

~~(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;~~

~~(D) any other quantity not specified in section 95484(b)(5)(A) to~~

~~95484(b)(5)(C) must be expressed to the nearest whole unit applicable for that quantity.~~

~~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~~
~~Fuel pathway code~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~
~~Transaction type~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~
~~Transaction date~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~
~~Business Partner~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~
~~Biofuel Production Facility~~	~~x~~	~~x~~	~~n/a~~	~~x~~	~~x~~
~~Physical pathway code~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~
~~Aggregation~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~
~~Application / EER~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~
~~Volume of each blendstock (Gal)~~	~~x~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~
~~MCON or other crude oil name designation, volume (in gal), and country (or state) of origin for each crude supplied to the refinery~~	~~x~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~
~~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~~

~~***Value will be calculated or stored in the compliance tool.*~~

~~(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)(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)(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)(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)(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)(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(c)(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(c)(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(c)(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 title 17, CCR, §§ 91000 – 91022 and the California Public Records Act (Government Code section 6250 et seq.).

(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 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). 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).

§ 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). 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)~~
~~Denatured Ethanol (gal)~~	~~81.51 (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:~~

$$\cancel{Credits^{Gen}(MT) = \sum_{i}^{n} Credits_i^{gasoline} + \sum_{i}^{n} Credits_i^{diesel}}$$

$$\cancel{Deficits^{Gen}(MT) = \sum_{i}^{n} Deficits_i^{gasoline} + \sum_{i}^{n} Deficits_i^{diesel}}$$

[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.

~~where:~~

~~$Credits^{Gen}$ 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	3.4	Electricity / BEV, or PHEV*	2.7
H2 / FCV	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 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). 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).~~

~~§ 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 responsible ("regulated party's fuel").~~

~~(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 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 all 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 no carbon intensity value for the production facility is posted pursuant to section 95486(f)(2)(B), and the production facility has not 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 from Table 7 in section 95486(b).~~

~~(b) *Method 1 – ARB Lookup Table.*~~

~~(1) To generate carbon intensity values, the Executive Officer 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. CA-GREET, or other model determined by the Executive Officer to be at least equivalent to the CA-GREET, version 1.8b., shall be used by the Executive Officer to generate carbon intensity values.~~

~~To generate carbon intensity values for crude oil production and transport to California refineries, the Executive Officer uses the Oil Production Greenhouse Gas Emissions Estimator (OPGEE) model version 1.0 (September 2012), which is incorporated herein by reference. The OPGEE model is available for downloading on ARB's website at http://www.arb.ca.gov/fuels/lcfs/lcfs.htm. OPGEE, or other model determined by the Executive Officer to be at least equivalent to the OPGEE, version 1.0., shall be used by the Executive Officer to generate carbon intensity values for crude oil production and transport to California refineries.~~

~~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," Pathway CBOB001;~~

~~(A.1) Supplement Version 2.0 (September 12, 2012) to Stationary Source Division, Air Resources Board (February 27, 2009, v.2.1), "Detailed CaliforniaModified 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 Version 2.0 (September 12, 2012) to Stationary Source Division, Air Resources Board (February 27, 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," Pathway ULSD001;~~

~~(C.1) Supplement Version 2.0 (September 12, 2012) 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 Corn Ethanol," Pathways ETHC001, ETHC002, ETHC003, ETHC004, ETHC005, ETHC006, ETHC007, ETHC008, ETHC009, ETHC0010, ETHC0011, ETHC0012, ETHC013;~~

~~(E) [reserved for future use];~~

~~(F) 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," Pathways CNG001, CNG002;~~

~~(G) 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," Pathway CNG003;~~

~~(H) Stationary Source Division, Air Resources Board (February 27, 2009, v.2.1), "Detailed California-Modified GREET Pathway for California Average and Marginal Electricity," Pathways ELC001, ELC002;~~

~~(I) 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," Pathways HYG001, HYG002, HYG003, HYG004, HYG005;~~

~~(J) 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," Pathways LNG001, LNG002, LNG003, LNG 004, LNG005;~~

~~(K) 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),” Pathways LNG006, LNG007;~~

~~(L) 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,” Pathway CNG004;~~

~~(M) 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,” Pathways LNG008, LNG009;~~

~~(N) Stationary Source Division, Air Resources Board (September 23, 2009, v.2.0), “Detailed California-Modified GREET Pathway for Biodiesel from Used Cooking Oil,” Pathways BIOD002, BIOD003;~~

~~(O) Stationary Source Division, Air Resources Board (September 23, 2009, v.2.0), “Detailed California-Modified GREET Pathway for CoProcessed Renewable Diesel from Tallow (U.S. Sourced),” Pathways RNWD002, RNWD003;~~

~~(P) 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,” Pathways ETHS001, ETHS002, ETHS003;~~

~~(Q) Stationary Source Division, Air Resources Board (December 14, 2009, v.3.0), “Detailed California-Modified GREET Pathway for Biodiesel from Midwest Soybeans,” Pathway BIOD001;~~

~~(R) Stationary Source Division, Air Resources Board (December 14, 2009, v.3.0), “Detailed California-Modified GREET Pathway for Renewable Diesel from Midwest Soybeans,” Pathway RNWD001;~~

~~(S) Archer Daniels Midland Company Method B Application Package (May 18, 2011), http://www.arb.ca.gov/fuels/lcfs/2a2b/apps/adm-15day-070811.pdf, Pathways ETHC014, ETHC015, ETHC016, ETHC017, ETHC018, ETHC019, ETHC020, ETHC021;~~

~~(T) POET Method 2A Application Package (February 20, 2011) http://www.arb.ca.gov/fuels/lcfs/2a2b/apps/poet-15day-070811.pdf, Pathways ETCH025, ETCH026, ETCH027, ETCH028, ETCH029, ETCH030, ETCH031, ETCH032, ETCH033, ETCH034, ETCH035;~~

~~(U) Trinidad Bulk Traders LTD Method 2B Application Package (November 23, 2010), http://www.arb.ca.gov/fuels/lcfs/2a2b/apps/tbtl-rpt-ncbi-121410.pdf, Pathways ETHS004, ETHS005, ETHS006;~~

~~(V) Green Plains Holdings II LLC—Lakota Plant Division Method 2A Application Package, (November 3, 2010),~~

~~http://www.arb.ca.gov/fuels/lcfs/2a2b/apps/gp-lak-sum-ncbi-121410.pdf, Pathway ETHC024;~~

~~(W) Green Plains Central City LLC, Method 2A Application Package (October 20, 2010), http://www.arb.ca.gov/fuels/lcfs/2a2b/apps/gp-cct-rpt-ncbi-121410.pdf, Pathway ETHC023;~~

~~(X) Louis Dreyfus Commodities, Elkhorn Valley Ethanol LLC Method 2A Application Package (December 1, 2010), http://www.arb.ca.gov/fuels/lcfs/2a2b/apps/ld-nor-rpt-ncbi-121410.pdf, Pathway ETHC022;~~

~~(Y) Stationary Source Division, Air Resources Board (June 30, 2011, v. 2.0), http://www.arb.ca.gov/fuels/lcfs/2a2b/internal/mw-uco-bd-070811.pdf, "Detailed California-Modified GREET Pathway for Biodiesel Produced in the Midwest from Used Cooking Oil and Used in California," Pathways BIOD004, BIOD005; and~~

~~(Z) Stationary Source Division, Air Resources Board (November 3, 2011, Version 2.0) "California-Modified GREET Pathway for the Production of Biodiesel from Corn Oil at Dry Mill Ethanol Plants," Pathway BIOD007;~~

~~Table 6. Carbon Intensity Lookup Table for Gasoline and Fuels that Substitute for Gasoline~~

~~*Fuel*~~	~~*Pathway Identifier*~~	~~*Pathway Description*~~	~~*Carbon Intensity Values (gCO2e/MJ)*~~		
			~~*Direct Emissions*~~	~~*Land Use or Other Indirect Effect*~~	~~*Total*~~
~~CARBOB~~	~~CBOB001~~	~~CARBOB - based on the average crude oil supplied to California refineries and average California refinery efficiencies~~	~~99.18~~	~~0~~	~~99.18~~
~~Ethanol from Corn~~	~~ETHC001~~	~~Midwest average; 80% Dry Mill; 20% Wet Mill; Dry DGS; NG~~	~~69.40~~	~~30~~	~~99.40~~
	~~ETHC002~~	~~California average; 80% Midwest Average; 20% California; Dry Mill; Wet DGS; NG~~	~~65.66~~	~~30~~	~~95.66~~
	~~ETHC003~~	~~California; Dry Mill; Wet DGS; NG~~	~~50.70~~	~~30~~	~~80.70~~
	~~ETHC004~~	~~Midwest; Dry Mill; Dry DGS, NG~~	~~68.40~~	~~30~~	~~98.40~~
	~~ETHC005~~	~~Midwest; Wet Mill, 60% NG, 40% coal~~	~~75.10~~	~~30~~	~~105.10~~

~~Fuel~~	~~Pathway Identifier~~	~~Pathway Description~~	~~Carbon Intensity Values (gCO2e/MJ)~~		
			~~Direct Emissions~~	~~Land Use or Other Indirect Effect~~	~~Total~~
	~~ETHC006~~	~~Midwest; Wet Mill, 100% NG~~	~~64.52~~	~~30~~	~~94.52~~
	~~ETHC007~~	~~Midwest; Wet Mill, 100% coal~~	~~90.99~~	~~30~~	~~120.99~~
	~~ETHC008~~	~~Midwest; Dry Mill; Wet, DGS; NG~~	~~60.10~~	~~30~~	~~90.10~~
	~~ETHC009~~	~~California; Dry Mill; Dry DGS, NG~~	~~58.90~~	~~30~~	~~88.90~~
	~~ETHC010~~	~~Midwest; Dry Mill; Dry DGS; 80% NG; 20% Biomass~~	~~63.60~~	~~30~~	~~93.60~~
	~~ETHC011~~	~~Midwest; Dry Mill; Wet DGS; 80% NG; 20% Biomass~~	~~56.80~~	~~30~~	~~86.80~~
	~~ETHC012~~	~~California; Dry Mill; Dry DGS; 80% NG; 20% Biomass~~	~~54.20~~	~~30~~	~~84.20~~
	~~ETHC013~~	~~California; Dry Mill; Wet DGS; 80% NG; 20% Biomass~~	~~47.44~~	~~30~~	~~77.44~~
	~~ETHC014~~	~~2B Application*: Midwest; Dry Mill; Plant energy use not to exceed a value the applicant classifies as confidential; No grid electricity use; Coal use not to exceed 71% of fuel use (by energy); Coal carbon content not to exceed 48%~~	~~60.99~~	~~30~~	~~90.99~~
	~~ETHC015~~	~~2B Application*: Midwest; Dry Mill; Plant energy use not to exceed a value the applicant classifies as confidential; No grid electricity use; Biomass must be at least 5% of the fuel use (by energy); Coal use not to exceed 66% of fuel use (by energy); Coal carbon content not to exceed 48%~~	~~59.08~~	~~30~~	~~89.08~~
	~~ETHC016~~	~~2B Application*: Midwest; Dry Mill; Plant energy use not to exceed a value the applicant classifies as confidential; No grid electricity use; Biomass must be at least 10% of the fuel use (by energy); Coal use not to exceed 60% of fuel use (by energy); Coal carbon content not to exceed 48%~~	~~57.16~~	~~30~~	~~87.16~~

~~Fuel~~	~~Pathway Identifier~~	~~Pathway Description~~	~~Carbon Intensity Values (gCO2e/MJ)~~		
			~~Direct Emissions~~	~~Land Use or Other Indirect Effect~~	~~Total~~
	~~ETHC017~~	~~2B Application*: Midwest; Dry Mill; Plant energy use not to exceed a value the applicant classifies as confidential; No grid electricity use; Biomass must be at least 15% of the fuel use (by energy); Coal use not to exceed 54% of fuel use (by energy); Coal carbon content not to exceed 48%~~	~~55.24~~	~~30~~	~~85.24~~
	~~ETHC018~~	~~2B Application*: Midwest; Dry Mill; Plant energy use not to exceed a value the applicant classifies as confidential; No grid electricity use; Coal use not to exceed 71% of fuel use (by energy); Coal carbon content not to exceed 48%~~	~~59.80~~	~~30~~	~~89.80~~
	~~ETHC019~~	~~2B Application*: Midwest; Dry Mill; Plant energy use not to exceed a value the applicant classifies as confidential; No grid electricity use; Biomass must be at least 5% of the fuel use (by energy); Coal use not to exceed 65% of fuel use (by energy); Coal carbon content not to exceed 48%~~	~~57.86~~	~~30~~	~~87.86~~
	~~ETHC020~~	~~2B Application*: Midwest; Dry Mill; Plant energy use not to exceed a value the applicant classifies as confidential; No grid electricity use; Biomass must be at least 10% of the fuel use (by energy); Coal use not to exceed 59% of fuel use (by energy); Coal carbon content not to exceed 48%.~~	~~55.91~~	~~30~~	~~85.91~~
	~~ETHC021~~	~~2B Application*: Midwest; Dry Mill; Plant energy use not to exceed a value the applicant classifies as confidential; No grid electricity use; Biomass must be at least 15% of the fuel use (by energy); Coal use not to exceed 53% of fuel use (by energy); Coal carbon content not to exceed 48%~~	~~53.96~~	~~30~~	~~83.96~~
	~~ETHC022~~	~~2A Application*: Midwest; Dry Mill; 15% Dry DGS, 85% Partially Dry DGS; NG; Plant energy use not to exceed a value the applicant classifies as confidential~~	~~57.16~~	~~30~~	~~87.16~~
	~~ETHC023~~	~~2A Application*: Midwest; Dry Mill; Partially Dry DGS; NG; Plant energy use not to exceed a value the applicant classifies as confidential~~	~~54.29~~	~~30~~	~~84.29~~

~~Fuel~~	~~Pathway Identifier~~	~~Pathway Description~~	~~Carbon Intensity Values (gCO2e/MJ)~~		
			~~Direct Emissions~~	~~Land Use or Other Indirect Effect~~	~~Total~~
	~~ETHC024~~	~~2A Application*: Midwest; Dry Mill; 75% Dry DGS, 25% Wet DGS; NG; Plant energy use not to exceed a value the applicant classifies as confidential~~	~~61.60~~	~~30~~	~~91.60~~
	~~ETHC025~~	~~2A Application*: Dry Mill; Dry DGS; Raw starch hydrolysis; Amount and type of fuel use, and amount of grid electricity use not to exceed a value the applicant classifies as confidential~~	~~62.44~~	~~30~~	~~92.44~~
	~~ETHC026~~	~~2A Application*: Dry Mill; Dry DGS; Raw starch hydrolysis/ combined heat and power; Amount and type of fuel use, and amount of grid electricity use not to exceed a value the applicant classifies as confidential~~	~~58.49~~	~~30~~	~~88.49~~
	~~ETHC027~~	~~2A Application*: Dry Mill; Dry DGS; Raw starch hydrolysis/biomass & landfill gas fuels; Amount and type of fuel use, and amount of grid electricity use not to exceed a value the applicant classifies as confidential~~	~~58.50~~	~~30~~	~~88.50~~
	~~ETHC028~~	~~2A Application*: Dry Mill; Dry DGS; Raw starch hydrolysis/corn fractionation; Amount and type of fuel use, and amount of grid electricity use not to exceed a value the applicant classifies as confidential~~	~~61.66~~	~~30~~	~~91.66~~
	~~ETHC029~~	~~2A Application*: Dry Mill; Dry DGS; Conventional cook/combined heat and power; Amount and type of fuel use, and amount of grid electricity use not to exceed a value the applicant classifies as confidential~~	~~60.52~~	~~30~~	~~90.52~~
	~~ETHC030~~	~~2A Application*: Dry Mill; Dry DGS; Raw starch hydrolysis/biogas process fuel; Amount and type of fuel use, and amount of grid electricity use not to exceed a value the applicant classifies as confidential~~	~~44.70~~	~~30~~	~~74.70~~

~~Fuel~~	~~Pathway Identifier~~	~~Pathway Description~~	~~Carbon Intensity Values (gCO2e/MJ)~~		
			~~Direct Emissions~~	~~Land Use or Other Indirect Effect~~	~~Total~~
	~~ETHC031~~	~~2A Application*: Dry Mill; Wet DGS; Raw starch hydrolysis; Amount and type of fuel use, and amount of grid electricity use not to exceed a value the applicant classifies as confidential~~	~~53.69~~	~~30~~	~~83.69~~
	~~ETHC032~~	~~2A Application*: Dry Mill; Wet DGS; Raw starch hydrolysis/ combined heat and power; Amount and type of fuel use, and amount of grid electricity use not to exceed a value the applicant classifies as confidential~~	~~50.01~~	~~30~~	~~80.01~~
	~~ETHC033~~	~~2A Application*: Dry Mill; Wet DGS; Raw starch hydrolysis/corn fractionation; Amount and type of fuel use, and amount of grid electricity use not to exceed a value the applicant classifies as confidential~~	~~50.26~~	~~30~~	~~80.26~~
	~~ETHC034~~	~~2A Application*: Dry Mill; Wet DGS; Conventional cook/combined heat and power; Amount and type of fuel use, and amount of grid electricity use not to exceed a value the applicant classifies as confidential~~	~~50.47~~	~~30~~	~~80.47~~
	~~ETHC035~~	~~2A Application*: Dry Mill; Wet DGS; Raw starch hydrolysis/biogas process fuel; Amount and type of fuel use, and amount of grid electricity use not to exceed a value the applicant classifies as confidential~~	~~43.21~~	~~30~~	~~73.21~~
~~Ethanol from Sugarcane~~	~~ETHS001~~	~~Brazilian sugarcane using average production processes~~	~~27.40~~	~~46~~	~~73.40~~
	~~ETHS002~~	~~Brazilian sugarcane with average production process, mechanized harvesting and electricity co-product credit~~	~~12.40~~	~~46~~	~~58.40~~
	~~ETHS003~~	~~Brazilian sugarcane with average production process and electricity co-product credit~~	~~20.40~~	~~46~~	~~66.40~~
	~~ETHS004~~	~~2B Application*: Brazilian sugarcane processed in the CBI with average production process; Thermal process power supplied with NG~~	~~32.94~~	~~46~~	~~78.94~~

~~Fuel~~	~~Pathway Identifier~~	~~Pathway Description~~	~~Carbon Intensity Values (gCO2e/MJ)~~		
			~~Direct Emissions~~	~~Land Use or Other Indirect Effect~~	~~Total~~
	~~ETHS005~~	~~2B Application*: Brazilian sugarcane processed in the CBI with average production process, mechanized harvesting and electricity co-product credit; Thermal process power supplied with NG~~	~~17.94~~	~~46~~	~~63.94~~
	~~ETHS006~~	~~2B Application*: Brazilian sugarcane processed in the CBI with average production process and electricity co-product credit; Thermal process power supplied with NG~~	~~25.94~~	~~46~~	~~71.94~~
~~Compressed Natural Gas~~	~~CNG001~~	~~California NG via pipeline; compressed in CA~~	~~67.70~~	~~0~~	~~67.70~~
	~~CNG002~~	~~North American NG delivered via pipeline; compressed in CA~~	~~68.00~~	~~0~~	~~68.00~~
	~~CNG003~~	~~Landfill gas (bio-methane) cleaned up to pipeline quality NG; compressed in CA~~	~~11.26~~	~~0~~	~~11.26~~
	~~CNG004~~	~~Dairy Digester Biogas to CNG~~	~~13.45~~	~~0~~	~~13.45~~
~~Liquefied Natural Gas~~	~~LNG001~~	~~North American NG delivered via pipeline; liquefied in CA using liquefaction with 80% efficiency~~	~~83.13~~	~~0~~	~~83.13~~
	~~LNG002~~	~~North American NG delivered via pipeline; liquefied in CA using liquefaction with 90% efficiency~~	~~72.38~~	~~0~~	~~72.38~~
	~~LNG003~~	~~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~~
	~~LNG004~~	~~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~~
	~~LNG005~~	~~Overseas-sourced LNG delivered as LNG to CA; no re-gasification or re-liquefaction in CA~~	~~77.50~~	~~0~~	~~77.50~~
	~~LNG006~~	~~Landfill Gas (bio-methane) to LNG liquefied in CA using liquefaction with 80% efficiency~~	~~26.31~~	~~0~~	~~26.31~~

~~Fuel~~	~~Pathway Identifier~~	~~Pathway Description~~	~~Carbon Intensity Values (gCO2e/MJ)~~		
			~~Direct Emissions~~	~~Land Use or Other Indirect Effect~~	~~Total~~
	~~LNG007~~	~~Landfill Gas (bio-methane) to LNG liquefied in CA using liquefaction with 90% efficiency~~	~~15.56~~	~~0~~	~~15.56~~
	~~LNG008~~	~~Dairy Digester Biogas to LNG liquefied in CA using liquefaction with 80% efficiency~~	~~28.53~~	~~0~~	~~28.53~~
	~~LNG009~~	~~Dairy Digester Biogas to LNG liquefied in CA using liquefaction with 90% efficiency~~	~~17.78~~	~~0~~	~~17.78~~
~~Electricity~~	~~ELC001~~	~~California average electricity mix~~	~~124.10~~	~~0~~	~~124.10~~
	~~ELC002~~	~~California marginal electricity mix of natural gas and renewable energy sources~~	~~104.71~~	~~0~~	~~104.71~~
~~Hydrogen~~	~~HYGN001~~	~~Compressed H2 from central reforming of NG (includes liquefaction and re-gasification steps)~~	~~142.20~~	~~0~~	~~142.20~~
	~~HYGN002~~	~~Liquid H2 from central reforming of NG~~	~~133.00~~	~~0~~	~~133.00~~
	~~HYGN003~~	~~Compressed H2 from central reforming of NG (no liquefaction and re-gasification steps)~~	~~98.80~~	~~0~~	~~98.80~~
	~~HYGN004~~	~~Compressed H2 from on-site reforming of NG~~	~~98.30~~	~~0~~	~~98.30~~
	~~HYGN005~~	~~Compressed H2 from on-site reforming with renewable feedstocks~~	~~76.10~~	~~0~~	~~76.10~~

~~* Specific conditions apply.~~

~~Table 7. Carbon Intensity Lookup Table for Diesel and Fuels that Substitute for Diesel~~

~~Fuel~~	~~Pathway Identifier~~	~~Pathway Description~~	~~Carbon Intensity Values (gCO2e/MJ)~~		
			~~Direct Emissions~~	~~Land Use or Other Indirect Effect~~	~~Total~~

~~Fuel~~	~~Pathway Identifier~~	~~Pathway Description~~	~~Carbon Intensity Values (gCO2e/MJ)~~		
			~~Direct Emissions~~	~~Land Use or Other Indirect Effect~~	~~Total~~
~~Diesel~~	~~ULSD001~~	~~ULSD - based on the average crude oil supplied to California refineries and average California refinery efficiencies~~	~~98.03~~	~~0~~	~~98.03~~
~~Biodiesel~~	~~BIOD002~~	~~Conversion of waste oils (Used Cooking Oil) to biodiesel (fatty acid methyl esters - FAME) where "cooking" is required~~	~~15.84~~	~~0~~	~~15.84~~
	~~BIOD003~~	~~Conversion of waste oils (Used Cooking Oil) to biodiesel (fatty acid methyl esters - FAME) where "cooking" is not required~~	~~11.76~~	~~0~~	~~11.76~~
	~~BIOD001~~	~~Conversion of Midwest soybeans to biodiesel (fatty acid methyl esters -FAME)~~	~~21.25~~	~~62~~	~~83.25~~
	~~BIOD004~~	~~Conversion of waste oils (Used Cooking Oil) to biodiesel (fatty acid methyl esters - FAME) where "cooking" is required. Fuel produced in the Midwest~~	~~18.72~~	~~0~~	~~18.72~~
	~~BIOD005~~	~~Conversion of waste oils (Used Cooking Oil) to biodiesel (fatty acid methyl esters - FAME) where "cooking" is not required. Fuel produced in the Midwest~~	~~13.83~~	~~0~~	~~13.83~~
	~~BIOD007~~	~~Conversion of corn oil, extracted from distillers grains prior to the drying process, to biodiesel~~	~~4.00~~	~~0~~	~~4.00~~
~~Renewable Diesel~~	~~RNWD002~~	~~Conversion of tallow to renewable diesel using higher energy use for rendering~~	~~39.33~~	~~0~~	~~39.33~~
	~~RNWD003~~	~~Conversion of tallow to renewable diesel using lower energy use for rendering~~	~~19.65~~	~~0~~	~~19.65~~
	~~RNWD001~~	~~Conversion of Midwest soybeans to renewable diesel~~	~~20.16~~	~~62~~	~~82.16~~
~~Compressed Natural Gas~~	~~CNG001~~	~~California NG via pipeline; compressed in CA~~	~~67.70~~	~~0~~	~~67.70~~
	~~CNG002~~	~~North American NG delivered via pipeline; compressed in CA~~	~~68.00~~	~~0~~	~~68.00~~
	~~CNG003~~	~~Landfill gas (bio-methane) cleaned up to pipeline quality NG; compressed in CA~~	~~11.26~~	~~0~~	~~11.26~~
	~~CNG004~~	~~Dairy Digester Biogas to CNG~~	~~13.45~~	~~0~~	~~13.45~~

~~Fuel~~	~~Pathway Identifier~~	~~Pathway Description~~	~~Carbon Intensity Values (gCO2e/MJ)~~		
			~~Direct Emissions~~	~~Land Use or Other Indirect Effect~~	~~Total~~
~~Liquefied Natural Gas~~	~~LNG001~~	~~North American NG delivered via pipeline; liquefied in CA using liquefaction with 80% efficiency~~	~~83.13~~	~~0~~	~~83.13~~
	~~LNG002~~	~~North American NG delivered via pipeline; liquefied in CA using liquefaction with 90% efficiency~~	~~72.38~~	~~0~~	~~72.38~~
	~~LNG003~~	~~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~~
	~~LNG004~~	~~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~~
	~~LNG005~~	~~Overseas-sourced LNG delivered as LNG to CA; no re-gasification or re-liquefaction in CA~~	~~77.50~~	~~0~~	~~77.50~~
	~~LNG006~~	~~Landfill Gas (bio-methane) to LNG liquefied in CA using liquefaction with 80% efficiency~~	~~26.31~~	~~0~~	~~26.31~~
	~~LNG007~~	~~Landfill Gas (bio-methane) to LNG liquefied in CA using liquefaction with 90% efficiency~~	~~15.56~~	~~0~~	~~15.56~~
	~~LNG008~~	~~Dairy Digester Biogas to LNG liquefied in CA using liquefaction with 80% efficiency~~	~~28.53~~	~~0~~	~~28.53~~
	~~LNG009~~	~~Dairy Digester Biogas to LNG liquefied in CA using liquefaction with 90% efficiency~~	~~17.78~~	~~0~~	~~17.78~~
~~Electricity~~	~~ELC001~~	~~California average electricity mix~~	~~124.10~~	~~0~~	~~124.10~~
	~~ELC002~~	~~California marginal electricity mix of natural gas and renewable energy sources~~	~~104.71~~	~~0~~	~~104. 71~~
~~Hydrogen~~	~~HYGN001~~	~~Compressed H2 from central reforming of NG (includes liquefaction and re-gasification steps)~~	~~142.20~~	~~0~~	~~142.20~~
	~~HYGN002~~	~~Liquid H2 from central reforming of NG~~	~~133.00~~	~~0~~	~~133.00~~
	~~HYGN003~~	~~Compressed H2 from central reforming of NG (no liquefaction and re-gasification steps)~~	~~98.80~~	~~0~~	~~98.80~~

~~Fuel~~	~~Pathway Identifier~~	~~Pathway Description~~	~~Carbon Intensity Values (gCO2e/MJ)~~		
			~~Direct Emissions~~	~~Land Use or Other Indirect Effect~~	~~Total~~
	~~HYGN004~~	~~Compressed H2 from on-site reforming of NG~~	~~98.30~~	~~0~~	~~98.30~~
	~~HYGN005~~	~~Compressed H2 from on-site reforming with renewable feedstocks~~	~~76.10~~	~~0~~	~~76.10~~

~~Table 8. Carbon Intensity Lookup Table for Crude Oil Production and Transport~~

~~Country of Origin~~	~~Crude Identifier~~	~~Carbon Intensity Values (gCO2e/MJ)~~
	~~Baseline Crude Average*~~	~~11.39~~
	~~Annual Crude Average**~~	~~See 95486(b)(2)(A)1.~~
~~Angola~~	~~Dalia~~	~~7.86~~
	~~Girassol~~	~~10.43~~
	~~Greater Plutonio~~	~~8.82~~
~~Argentina~~	~~Canadon Seco~~	~~7.54~~
	~~Escalante~~	~~7.51~~
	~~Hydra~~	~~8.03~~
~~Australia~~	~~Pyrenees~~	~~5.96~~
~~Brazil~~	~~Albacora Leste~~	~~7.35~~
	~~Frade~~	~~6.62~~
	~~Marlim~~	~~6.75~~
	~~Marlim Sul~~	~~9.69~~
	~~Ostra~~	~~5.71~~
	~~Polvo~~	~~5.62~~
~~Cameroon~~	~~Lokele~~	~~24.02~~

~~Canada~~	~~Albian Heavy Synthetic~~	~~21.02~~
	~~Cold Lake~~	~~18.74~~
	~~Federated~~	~~7.77~~
	~~Koch Alberta~~	~~7.61~~
	~~Mixed Sweet Blend~~	~~7.75~~
	~~Suncor Synthetic A~~	~~24.49~~
	~~Suncor Synthetic C~~	~~24.49~~
	~~Syncrude Sweet Premium~~	~~21.87~~
~~Colombia~~	~~Castilla Blend~~	~~6.45~~
	~~Vasconia~~	~~6.63~~
~~Ecuador~~	~~Napo~~	~~7.45~~
	~~Oriente~~	~~9.34~~
~~Iraq~~	~~Basra Light~~	~~12.08~~
~~Kuwait/Saudi Arabia Partitioned Zone~~	~~Eocene~~	~~5.59~~
	~~Ratawi~~	~~5.77~~
~~Nigeria~~	~~Bonny Light~~	~~17.88~~
~~Oman~~	~~Oman~~	~~12.30~~
~~Peru~~	~~Loreto~~	~~5.82~~
	~~Mayna~~	~~7.14~~
~~Russia~~	~~ESPO~~	~~12.09~~
~~Saudi Arabia~~	~~Arab Extra Light~~	~~6.86~~
	~~Arab Light~~	~~6.75~~
~~Trinidad and Tobago~~	~~Calypso~~	~~6.95~~
~~United States~~	~~Alaska North Slope~~	~~12.81~~

	~~California Average Production~~	~~12.90~~
~~Venezuela~~	~~Boscan~~	~~12.53~~
	~~Petrozuata~~	~~23.58~~
	~~Zuata Sweet~~	~~23.50~~

~~* Based on production and transport of the crude oil supplied to California refineries during the baseline calendar year, 2010~~
~~** Based on production and transport of the crude oil supplied to California refineries during a specified calendar year or years. 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 or years.~~

~~(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)4.~~

~~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~~

$$\cancel{Deficits^{XD}_{Base}\ (MT) = (CI^{XD}_{Standard} - CI^{XD}_{BaselineAvg}) \times E^{XD} \times C}$$

~~Incremental Deficit Calculation to Mitigate Increases in the Carbon-Intensity of Crude Oil~~

$$\cancel{If\ CI^{XD}_{20XXCrudeAvg} > CI^{XD}_{BaselineCrudeAvg}\ then:}$$

$$\cancel{Deficits^{XD}_{Incremental\ 20XX} =}$$

$$- \quad ^{XD} \quad) \times E^{XD} \times C$$

~~$(CI^{XD}_{BaselineCrudeAvg} \quad CI_{20XXCrudeAva}$~~

~~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);~~

~~$CI^{XD}_{BaselineAva}$ 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, 2010. For purposes of this provision, $CI^{XD}_{BaselineAva}$ 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, 2010.~~

~~$CI^{XD}_{BaselineCrudeAva}$ is the California average crude oil carbon-intensity value, in gCO2E/MJ, attributed to the production and transport of the crude oil supplied as petroleum feedstock to California refineries during the baseline calendar year, 2010. For purposes of this provision, $CI^{XD}_{BaselineCrudeAva}$ 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, 2010.~~

~~$CI^{XD}_{20XXCrudeAva}$ is the California average crude oil carbon-intensity value, in gCO2E/MJ, attributed to the production and transport of the crude oil supplied as petroleum feedstock to California refineries during specified calendar years. For purposes of this provision, $CI^{XD}_{20XXCrudeAva}$ for CARBOB (XD = "CARBOB") and diesel~~

$CI^{XD}_{20XXCrudeAva}$

$CI^{XD}_{2012CrudeAva}$

~~fuel (XD = "diesel") is the Annual Crude Average carbon intensity value set forth in the Lookup Table. will be updated annually. will be calculated using data for crude oil supplied to California refineries during the calendar year 2012.~~

~~$CI^{XD}_{2013CrudeAva}$ will be calculated using data for crude oil supplied to California refineries during the calendar years 2012 and 2013.~~

~~$CI^{XD}_{2014CrudeAva}$ will be calculated using data for crude oil supplied to California refineries during the calendar years 2012, 2013, and 2014. All subsequent updates to $CI^{XD}_{20XXCrudeAva}$ will be calculated using data for crude oil supplied to California refineries during the most recent three calendar years.~~

~~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 $CI^{XD}_{20XXCrudeAva}$ 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. Process for Calculating the Annual Crude Average Carbon Intensity Value.~~

~~a. The Annual Crude Average carbon intensity value will be calculated using a volume-weighted average of individual crude carbon intensity values. Volumes for individual crudes will be the total volumes reported by all regulated parties in~~

~~the Annual Compliance Reports for the calendar year. Individual crude carbon intensity values are those listed in Table 8.~~

~~b. Within 15 days of receiving the Annual Compliance reports, the Executive Officer shall post the Annual Crude Average carbon intensity calculation at the ARB-LCFS website (http://www.arb.ca.gov/fuels/lcfs/lcfs.htm) for public comment. Written comments shall be accepted for 15 calendar days following the date on which the analysis was posted. Only comments related to potential factual or methodological errors in the posted Annual Crude Average carbon intensity value may be considered. The Executive Officer shall evaluate the comments received and, if the Executive Officer deems it necessary, may request in writing additional information or clarification from the commenters. Commenters shall have 10 days to respond to these requests. The Executive Officer shall post the final Annual Crude Average carbon intensity value at the ARB-LCFS website within 15 days of completion of the comment period, if no comments are received. If comments are received, the Executive Officer shall post the final Annual Crude Average carbon intensity value within 15 days of receiving any additional information or clarification requested from the commenters by the Executive Officer.~~

~~4. Credit for Purchasing Crudes Produced using Innovative Crude Production Methods.~~

~~A regulated party may receive credit for fuel or blendstock derived from petroleum feedstock which has been produced using innovative methods. For the purpose of this section, an innovative method means crude production using carbon capture and sequestration or solar steam generation that was implemented by the crude producer during or after the year 2010 and results in a reduction in carbon intensity for crude oil recovery (well to refinery entrance gate) of 1.00 gCO2E/MJ or greater. The crude oil producer 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:~~

$$Credits^{XD}_{Innov}(MT) = \left(CI^{XD}_{Without} - CI^{XD}_{With} \right)_{Innov} \times E^{XD}_{Innov} \times C$$

~~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 (hereinafter referred to as the comparison baseline method);~~

~~$^{XD}_{Innov}$ 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).~~

~~a. General Requirements. The innovative crude oil production method must be approved for use pursuant to this section before a regulated party can receive credit under the LCFS regulation for producing fuels or blendstocks from the innovative crude. This regulatory approval must be initiated by the crude oil producer through a written application to the Executive Officer. The application must contain at least the following:~~

~~i. A description of the innovative method, the comparison baseline method, and how emissions are reduced;~~

~~ii. An engineering drawing(s) or process flow diagram(s) that illustrate the innovative method;~~

~~iii. Calculations using the OPGEE model, or alternative model approved by the Executive Officer, to estimate the carbon intensities for the production of the crude using the innovative method and the comparison baseline method. The calculations must identify all modified parameters in the model and demonstrate that the inputs to the model accurately reflect the conditions specific to the crude production process;~~

iv. Any other technical documentation to support the applicant's claim that emissions will be reduced from the use of the innovative method.

b. Scientific Defensibility and Substantiality. For a proposed application for the use of innovative crude oil production methods to be approved, the applicant must demonstrate both that the innovative method is scientifically defensible and that it meets a substantiality requirement. These requirements are specified below:

i. Scientific Defensibility. A crude oil producer that seeks approval for an innovative crude oil production method bears the sole burden of demonstrating that the proposed innovative crude oil production method is scientifically defensible. Proof that a proposed innovative crude oil production method is scientifically defensible may rely on, but is not limited to, publication of the proposed innovative crude oil production method 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).

ii. Substantiality Requirement. For each of its crude oils for which a crude oil producer is seeking approval as an innovative crude oil production method, the applicant must demonstrate that the proposed innovative crude oil production method has a well-to-refinery gate carbon intensity that is at least 1.00 gram CO2-eq/MJ less than the well-to-refinery gate carbon intensity for the crude oil produced using the comparison baseline method. "Well-to-refinery gate" means all the steps involved in the extraction, production and transport of the crude oil to California, but it does not include the carbon intensity due to refining the crude oil, transporting the fuel, or the vehicle's use of the fuel.

c. Application and Data Submittal. A crude oil producer may apply to the Executive Officer for approval of an innovative crude oil production method under the LCFS. Unless otherwise noted, all applications for an innovative crude oil

~~production method shall comply with the requirements below.~~

~~i. An applicant that submits any information or documentation in support of a proposed innovative crude oil production method must include a written statement clearly showing that the applicant understands and agrees to the following:~~

~~A. The applicant 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;~~

~~B. All information in the application not identified as trade secrets are subject to public disclosure pursuant to title 17, CCR, sections 91000-91022 and the California Public Records Act (Government Code sec. 6250 et seq.); and~~

~~C. If the application is approved, the carbon intensity values will be incorporated into the Crude Lookup Table and LCFS Reporting Tool~~

~~ii. All applications shall include a detailed description of the innovative method and its comparison baseline method. The description must include:~~

~~A. Schematic flow charts that identify the system boundaries used for the purposes of performing the life cycle analyses on the proposed innovative crude oil production method and the comparison baseline method. Each piece of equipment or stream appearing on the process flow diagrams shall be clearly identified and shall include data on its energy and materials balance. The system boundary shall be shown in the schematic.~~

~~B. A description of all feedstocks used, including their points of origination, all feedstock transportation distances and modes, and all processing to which feedstocks are subject. This discussion shall cover energy and~~

~~chemical use, transport modes and distances, storage, and processing. A description of all non-feedstock inputs used in the crude production process.~~

~~C. A description of all co-products, byproducts, and waste products.~~

~~D. A description of all facilities involved in the production of the crude oil and other byproducts, co-products, and waste products.~~

~~E. A list of all combustion-powered equipment, along with their respective capacities, sizes, or rated power, fuel utilization type, and proposed use throughout the crude production lifecycle.~~

~~F. A description of the thermal and electrical energy consumption that occurs throughout the crude production life cycle. All fuels used (natural gas, biogas, coal, biomass, etc.) must be identified. The regional electrical energy generation fuel mix used in the analysis must be identified. Internally generated power such as cogeneration and combined heat and power must also be described.~~

~~G. A description of the transportation modes used throughout the crude production 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.~~

~~iii. The application shall include complete life cycle assessments performed on the proposed innovative crude oil production method and its comparison baseline method using OPGEE or an alternative model approved by the Executive Officer. Electronic copies of the models shall be provided. The descriptions of the life cycle assessment results must provide~~

~~A. Detailed information on the energy consumed, the greenhouse gas emissions generated, and the final carbon intensity.~~

~~B. Documentation of all non-default model input values used in the carbon intensity calculation process. If values for any significant crude oil production parameters are unknown, the application shall so state and model default values shall be used for these parameters in the analysis.~~

~~C. Detailed description of all supporting calculations that were performed outside of the model.~~

~~D. Documentation of all modifications other than those covered by item (II) above, made to the model. This discussion shall include sufficient specific detail to enable the Executive Officer to replicate all such modifications and, in combination with the inputs and supporting calculations identified in items II and III above, replicate the carbon intensity results reported in the application.~~

~~iv. A list of references covering all information sources used in the preparation of the life cycle analysis. All reference citations in the lifecycle analysis report shall include in-text parentheticals stating the author's last name and date of publication. All in-text parenthetical citations shall correspond to complete publication information provided in the list of references, and complete publication information 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.~~

~~v. 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 innovative crude oil production method described in the application packet. The transmittal letter shall be the original copy, be on company letterhead, be signed by an officer of the~~

~~applicant with authority to attest to the veracity of the information in the application and to sign on behalf of the applicant, and be from the applicant and not from an entity representing the applicant (such as a consultant or legal counsel).~~

~~vi. 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 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.~~

~~vii. All applications, supporting documents, and all other relevant data or calculation or other documentation, except for the transmittal letter described in paragraph (v) above, shall be submitted electronically such as via e-mail or an online-based interface unless the Executive Officer has approved or requested in writing another submission format.~~

~~d. Application Approval Process. The application must be approved pursuant to this section before a regulated party may obtain credit under the LCFS regulation for producing fuels or blendstocks from the innovative crude.~~

~~i. 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:~~

~~A. The application is complete, or~~

~~B. The application is incomplete and the Executive Officer will identify which requirements of section 95486(b)(2)(A)(4)a-c. above have not been met.~~

1. ~~The applicant will be permitted to submit additional information to meet the requirements to section 95486(b)(2)(A)(4)a-c.~~

2. ~~If the applicant is unable to achieve a complete application within 180 days of the Executive Officer's receipt of the application, the application will be denied on that basis, and the applicant will be informed in writing.~~

ii. ~~Once the Executive Officer has deemed an application to be complete, it will be posted for public comment at http://www.arb.ca.gov/fuels/lcfs/lcfs.htm. Comments will be accepted for 10 calendar days following the date on which the application was posted. Only comments related to potential factual or methodological errors may be considered. The Executive Officer will forward to the applicant all comments identifying potential factual or methodological errors. Within 30 days, the applicant shall either make revisions to its application and submit those revisions to the Executive Officer, or submit a detailed written response to the Executive Officer explaining why no revisions are necessary.~~

iii. ~~An application submitted pursuant to this section shall not be approved if the Executive Officer determines:~~

A. ~~Based upon the application information submitted pursuant to this section, the proposed crude production method is not innovative, as that term is defined in this section.~~

B. ~~Based upon the application information submitted pursuant to this section, the applicant's carbon intensity calculations cannot be replicated using the ARB OPGEE model.~~

iv. ~~If the Executive Officer finds that an application meets the requirements set forth in subsection 95486(b)(2)(A)4, the Executive Officer will take final action to approve the crude oil carbon intensity value and the associated innovative crude oil production~~

~~method, describing all limitations and operational conditions to which the innovative crude oil production method will be subject, by amending this section 95486 in accordance with Government Code section 11340, et seq. If the Executive Officer finds that an application does not meet the requirements of subsection 95486(b)(2)(A)4, the application will not be approved, and the applicant will be notified in writing and the basis for the disapproval shall be identified.~~

~~v. Recordkeeping. Each crude oil producer that has crude approved as innovative must maintain records identifying each facility at which it produces crude oil for sale in California under the approved innovative crude oil production method. For each such facility, the crude oil producer must compile records for at least three years showing:~~

~~A. The annual volume of crude oil produced using the approved innovative crude oil production method and the annual volume of crude subsequently sold in California under the approved innovative crude oil production method.~~

~~B. Compliance with all limitations and operational conditions identified by the Executive Officer in paragraph iv, above.~~

~~If the crude oil approved as innovative is marketed as part of a crude blend, the crude oil producer must also maintain for at least three years annual records identifying the constituent crudes that comprise the blend and the percentage that each constituent crude contributes to the blend.~~

~~These records shall be submitted to the Executive Officer within 20 days of a written request received from the Executive Officer or his/her designee, provided the request is made before the expiration of the period during which the records are required to be retained.~~

~~(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, or modifications to one or more inputs to an alternative model(s) used by the Executive Officer under section 95486(b)(1) 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 inputs to CA-GREET or other alternative model(s) approved by the Executive Officer pursuant to section 95486(b)(1) 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 or other alternative model(s) approved by the Executive Officer pursuant to section 95486(b)(1) 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 CA-GREET, or, pursuant to section 95486 (b)(1), an alternative model that has been determined by the Executive Officer to be at least equivalent to 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 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 CA-GREET can be modified successfully to generate the proposed new pathway. Alternatively, the regulated party may demonstrate to the Executive Officer's written satisfaction that, pursuant to section 95486 (b)(1), a method that is at least equivalent to CA-GREET could successfully be employed to generate the proposed new pathway carbon intensity. If the Executive Officer determines that the CA-GREET model or a proposed alternative 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 certification of a proposed Method 2A or 2B pathway, 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. Any use of a proposed Method 2A or 2B before Executive Officer approval is granted shall constitute a violation of this regulation for each day that the violation occurs. 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 certified 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.~~

~~(3) *Fuel Pathway Application Requirements.*~~

~~(A) No fuel pathway may be certified under this subsection (f) 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 or other generally recognized national consensus standards.~~

~~2. The proposed fuel pathway would be covered by an approved Multimedia Analysis, as required under section 95487.~~

~~3. 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.~~

~~4. 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 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 certification shall, unless otherwise noted, include the following:~~

1. ~~A completed Method 2A/2B application form, available at http://www.arb.ca.gov/fuels/2a2b-app.doc, which includes the following information.~~

   a. ~~Company name and mailing address~~
   b. ~~Name and contact information for a primary contact person~~
   c. ~~Name and contact information for Consultant/Third Party Application Preparer~~
   d. ~~LCFS Reporting Tool Organization ID code (if known)~~
   e. ~~U.S. Environmental Protection Agency (U.S. EPA) Company ID (if known)~~
   f. ~~U.S. EPA Facility ID (if known)~~
   g. ~~Pathway application type and brief description of proposed pathway~~
   h. ~~For Method 2A applicants only:~~
      i. ~~Reference pathway~~
      ii. ~~Compositional differences (if any) between the fuel produced by the new sub-pathway and the reference pathway identified~~
   i. ~~Final carbon Intensity of the proposed pathway or sub-pathway~~
   j. ~~Annual volume of fuel that would be produced using the proposed new pathway (millions of gallons per year [MGY])~~
   k. ~~Annual volume of fuel produced using the proposed new pathway that would enter the California market~~
   l. ~~Lower Heating Value of the fuel to be produced from the new pathway (megajoules per gallon)~~
   m. ~~The range of production volumes over which the proposed pathway carbon intensity value is valid.~~
   n. ~~Any information that may be helpful in determining the land use change impacts (if any) of the proposed pathway~~

2. ~~A lifecycle 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 1.8b 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 regional 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 the Executive Officer to enter the reported inputs into a copy of CA-GREET 1.8b 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 allow the Executive Officer to duplicate all such modifications 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. All reference citations in the lifecycle analysis report shall include in text parentheticals stating the author's last name and date of publication. All in text parenthetical citations shall correspond to complete publication information provided in the list of references, and complete publication information 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 operation. 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 (the special information column need not be populated for every record).

4. If transportation distances other than the CA-GREET defaults are used in the life cycle analysis of the proposed fuel pathway, receipts covering a period of no less than two years for all affected hauling trips shall be provided. Each set of invoices 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 special information 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 at least equivalent to the calculation methodology used by CA-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. If energy is supplied to the fuel production facility by a co-located cogeneration plant and that plant also supplies energy to other facilities, those other facilities must be identified and described.~~

9. ~~A copy of the federal Renewable Fuel Standard 2 (RFS2) Third Party Engineering Review Report required pursuant to 40 CFR 80.1450, 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 80.1451(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, and other non-original documents will not be accepted.~~

~~b. Be on company letterhead.~~

~~c. Be signed in blue ink by an officer of the applicant with authority to attest to the veracity of the information in the application and to sign on behalf of the applicant.~~

~~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 the application is complete or incomplete. If it is deemed incomplete, the Executive Officer shall identify which requirements of section 95486(f)(3)(C) above have not been met. The applicant will be permitted to submit additional information to meet the requirements to section 95486(f)(3)(C). If the applicant is unable to achieve a complete application within 180 calendar days of the Executive Officer's receipt of the application, the application shall be denied on that basis, and the applicant will be informed in writing.~~

~~(E) Once the Executive Officer has deemed an application to be complete, it will be posted to the Method 2A/2B website for public comment. Comments will be accepted for 10 calendar days~~

~~following the date on which the application was posted. Only comments related to potential factual or methodological errors may be considered. The Executive Officer will forward to the applicant all comments identifying potential factual or methodological errors. Within 30 days, the applicant shall either make revisions to its application and submit those revisions to the Executive Officer, or submit a detailed written response to the Executive Officer explaining why no revisions are necessary.~~

~~(F) If public comments are received pursuant to 95486(f)(3)(E) above, evaluation of the application will begin the first business day after the Executive Officer receives responding materials submitted by the applicant, as provided in section 95486(f)(3)(E). If no public comments are received pursuant to 95486(f)(3)(E), evaluation will begin the business day following close of the public comment period. The applicant will be informed in writing of the Executive Officer's findings by no later than 90 calendar days from the date that evaluation begins.~~

~~(G) 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 (F), above, will be deemed to have elapsed.~~

~~(H) As provided in this subsection, if the Executive Officer is unable to reach a determination within the time period specified in (F) above, the application will be denied without prejudice.~~

~~1. Applications denied without prejudice may be resubmitted for consideration under this section 95486.~~

~~2. If the basis of the denial was that the proposed pathway is not amenable to evaluation through the certification process described in section 95486(f)(3), the Executive Officer will inform the applicant in writing that an approval under the Method 2 certification process is not possible, but that he or she may request an evaluation under the terms of the California Administrative Procedure Act (Government Code section 11340.6) as an amendment to the Low Carbon Fuel Standard.~~

~~(I) The Executive Officer will evaluate all applications against the following criteria.~~

~~1. The Executive Officer will first replicate the applicant's carbon intensity calculations. Replication 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 95486(f)(3)(C)2.b.i.~~

~~ii. The Executive Officer will then apply all CA-GREET modifications reported by the applicant under provision 95486(f)(3)(C)2.b.ii.~~

~~iii. If the Executive Officer is able to duplicate the applicant's CA-GREET results, the Executive Officer will proceed to (I)2. below. 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 verify the energy consumption inputs to the CA-GREET carbon intensity calculations that were submitted by the applicant pursuant to 95486(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.~~

~~(J) If the Executive Officer finds that an application meets the requirements of subsection 95486(f)(3)(I) and determines that the applicant has satisfactorily made the demonstrations identified in subsection 95486(c), then the Executive Officer will certify 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 (F), above.~~

~~(K) If the Executive Officer at any time determines that a certified fuel pathway does not meet the operational conditions specified in the written certified notification issued by the Executive Officer as specified in paragraph (J), above, the Executive Officer shall revoke or modify the certification 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, CCR, section 60040, et seq.~~

~~(L) *Recordkeeping.*~~

~~1. Each fuel provider that has been certified 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 certified fuel pathway. For each such facility, the entity must compile records for at least three years 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 in section 1. above. 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.~~

~~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 retained. 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.~~

~~These records shall be submitted to the Executive Officer within 20 days of a written request received from the Executive Officer or his/her designee, provided the request is made before the expiration of the period during which the records are required to be retained.~~

~~NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 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). 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).~~

~~§ 95487. Requirements for Multimedia Evaluation~~

~~(a) *Pre-Sale Approval Requirement.* Except as provided for in section 95487(c), a regulated party must not sell, supply, distribute, import, offer for sale, or offer for use in California a regulated fuel unless one of the following conditions has first been met:~~

~~(1) a multimedia evaluation for the regulated fuel has been conducted pursuant to the requirements specified in this regulation, and that evaluation has been approved by the Executive Officer; or~~

~~(2) a multimedia evaluation for the regulated fuel has been conducted, and that evaluation was approved by the Executive Officer prior to the date the Office of Administrative Law (OAL) approves the LCFS regulation.~~

~~(b) *Requirements.*~~

~~(1) The Executive Officer, or his or her designee, shall not approve a multimedia evaluation subject to this section 95487(b) unless the evaluation has undergone the process for review and approval specified in H&S section 43830.8, including but not limited to, receiving peer review and approval by the California Environmental Policy Council pursuant to H&S section 43830.8(d)-(g). For purposes of H&S section 43830.8(a), each Executive Officer approval of a regulated fuel for compliance with the LCFS regulation under section 95487(a)(1) shall constitute compliance with the requirement in H&S section 43830.8(a) for conducting a multimedia evaluation prior to adoption of a "regulation that establishes a specification for motor vehicle fuel."~~

~~(2) All multimedia evaluations subject to this section 95487 shall be evaluated in accordance with the California Environmental Protection Agency (Cal/EPA) guidance document entitled, *Guidance Document and Recommendations on the Types of Scientific Information Submitted by Applicants for California Fuels Environmental Multimedia Evaluations (June 2008)*, which can be downloaded at http://www.arb.ca.gov/fuels/multimedia/080608guidance.pdf, and which is incorporated herein by reference.~~

~~(c) *Exemptions.*~~

~~(1) *Negative Declaration For ARB-Adopted New Or Amended Fuel Specifications*. The requirements of this section 95487 do not apply to a regulated fuel if:~~

~~(A) the regulated fuel is subject to a proposed ARB regulation establishing a new or amending an existing fuel specification, which ARB adopts after the date OAL approves the LCFS regulation; and~~

~~(B) the California Environmental Policy Council, following an initial evaluation of the proposed regulation, conclusively determines that the regulation will not have any significant adverse impact on public health or the environment.~~

~~(2) *CaRFG, Diesel Fuel, E100, E85, CNG, LNG, and Hydrogen.* The requirements of this section 95487 do not apply to a regulated fuel if:~~

~~(A) the fuel is subject to an ARB-adopted fuel specification; and~~

~~(B) the Executive Officer does not amend that fuel specification after OAL approves the LCFS regulation.~~

~~Fuels subject to this section 95487(c)(2) include CaRFG, diesel fuel, E100, E85, CNG, LNG, and hydrogen. The exemption applies only to the extent that the Executive Officer does not amend the fuel specification for any of the above fuels. When OAL approves an ARB amendment to a fuel specification identified above, the exemption shall no longer apply for that fuel.~~

~~(3) *Biomass-Based Diesel and Electricity.* The requirements of this section 95487 do not apply to a regulated fuel that:~~

~~(A) is subject to the Division of Measurement Standards' Engine Fuels Standards (4 CCR §4140 et seq.); but~~

~~(B) is not subject to an ARB-adopted fuel specification.~~

~~Fuels subject to this section 95487(c)(3) include biomass-based diesel and electricity. The exemption applies only to the extent that the Executive Officer does not adopt a fuel specification for any of the above fuels. When OAL approves an ARB-adopted fuel specification for a fuel identified above, the exemption shall no longer apply for that fuel.~~

~~NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 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). 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).~~

~~§ 95488. 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:~~

$$\text{Compliance Obligation} = \text{Deficits}^{Gen} + \text{Deficits}^{Carried\ Over} -$$

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

~~where:~~

~~Deficits^{Gen} are the total deficits generated pursuant to section 95485(a) for the current compliance period;~~

~~$\text{Deficits}^{Carried\ Over}$ are the deficits carried over from the previous compliance period;~~

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

~~$\text{Credits}^{Acquired}$ 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;~~

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

~~$\text{Credits}^{Retired}$ 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 95488(a)(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 95488(a)(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 may be 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:

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

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 10282011-v1, which is hereby incorporated by reference and 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.

Except as provided in section 95488(e) below, the Executive Officer will treat information submitted in Credit Transfer Forms as Confidential Business Information.

(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 transfer. 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. A credit facilitator may, with the consent of the parties, conduct a "blind transaction" where the Buyer of the credit does not know the identity of the Seller, and/or the Seller of the credit does not know the identity of the Buyer. 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 been 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, 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, 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 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). 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).~~

~~§ 95489. Regulation Review~~

~~As provided in this section, the Executive Officer shall conduct two reviews of the implementation of the LCFS program. The first review shall be completed and presented to the Board by January 1, 2012; the second review shall be completed and presented to the Board by January 1, 2015.~~

~~(a) The scope of each review shall include, at a minimum, consideration of the following areas:~~

~~(1) The LCFS program's progress against LCFS targets;~~
~~(2) Adjustments to the compliance schedule, if needed;~~
~~(3) Advances in full, fuel-lifecycle assessments;~~
~~(4) Advances in fuels and production technologies, including the feasibility and cost-effectiveness of such advances;~~
~~(5) The availability and use of ultralow carbon fuels to achieve the LCFS standards and advisability of establishing additional mechanisms to incentivize higher volumes of these fuels to be used;~~
~~(6) An assessment of supply availabilities and the rates of commercialization of fuels and vehicles;~~
~~(7) The LCFS program's impact on the State's fuel supplies;~~
~~(8) The LCFS program's impact on state revenues, consumers, and economic growth;~~
~~(9) An analysis of the public health impacts of the LCFS at the state and local level, including the impacts of local infrastructure or fuel production facilities in place or under development to deliver low carbon fuels, using an ARB approved method of analysis developed in consultation with public health experts from academia and other government agencies;~~
~~(10) An assessment of the air quality impacts on California associated with the implementation of the LCFS; whether the use of the fuel in the State will affect progress towards achieving State or federal air quality standards, or results in any significant changes in toxic air contaminant emissions; and recommendations for mitigation to address adverse air quality impacts identified;~~

~~(11) Identification of hurdles or barriers (e.g., permitting issues, infrastructure adequacy, research funds) and recommendations for addressing such hurdles or barriers;~~

~~(12) Significant economic issues; fuel adequacy, reliability, and supply issues; and environmental issues that have arisen; and~~

~~(13) The advisability of harmonizing with international, federal, regional, and state LCFS and lifecycle assessments.~~

~~(b) The Executive Officer shall establish an LCFS advisory panel by July 1, 2010. Panel participants should include representatives of the California Energy Commission; the California Public Utilities Commission; fuel providers; storage and distribution infrastructure owner/operators; consumers; engine and vehicle manufacturers; environmental justice organizations; environmental groups; academia; public health; and other stakeholders and government agencies as deemed appropriate by the Executive Officer. The advisory panel shall participate in the reviews of the LCFS program required by this section, and the Executive Officer shall solicit comments and evaluations from the panel on the ARB staff's assessments of the areas and elements specified in section (a) above, as well as on other topics relevant to the periodic reviews.~~

~~(c) The Executive Officer shall conduct the reviews specified above in a public process and shall conduct at least two public workshops for each review prior to presenting the reports to the Board. In presenting the results of each program review to the Board, the Executive Officer shall propose any amendments or such other action as the Executive Officer determines is warranted.~~

~~NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 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). 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).~~

~~§ 95490. Enforcement Protocols.~~

~~Notwithstanding section 95484(b) and (c), 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) and (c). 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) and (c). 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 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). 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).~~

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LOW CARBON FUEL STANDARD

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PROPOSED REGULATION ORDER

Adopt new sections 95480, 95481, 95482, 95483, 95483.1, 95483.2, 95484, 95485, 95486, 95487, 95488, 95489, ~~95890,~~ 95491, 95492, 95493, 95494, 95495, 95496, and 95497, title 17, California Code of Regulations, to read as follows:

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

Subarticle 7. Low Carbon Fuel Standard

§ 95480. Purpose.

The purpose of this regulation is to implement a low carbon fuel standard, which will reduce the full fuel-cycle, carbon intensity of the transportation fuel pool used in California, pursuant to the California Global Warming Solutions Act of 2006 (Health & Safety Code [H&S], section 38500 et seq.).

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, ~~43000.5, 43013~~ and 43018 Health and Safety Code; 42 U.S.C. section 7545, 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, 39515, 39516, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511 and 43000, Health and Safety Code; Section 25000.5, Public Resources Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

§ 95481. Definitions and Acronyms.

(a) *Definitions.* For the purposes of sections 95480 through 95497, the definitions in Health and Safety Code sections 39010 through 39060 shall apply, except as otherwise specified in this section or sections 95482 through 95497:

(1) "Above the rack" means sales of 10,000 gallons or more of diesel fuel at pipeline origin points, pipeline batches in transit, and at terminal tanks before the diesel has been loaded into trucks or other means of non-bulk transfer.

(2) "Account Administrator" means the person who can establish and activate user accounts for the reporting party organization as well as upload data (but not necessarily "submit" reports) into the LRT-CBTS. Account administrators with "signatory authority" may submit Quarterly and Annual Reports; initiate and view all credit transfers and credit transfer activity; access the Credit Balance ledger for the organization; and select/authorize broker(s) to represent them.

(3~~2~~) "AEZ-EF Model" means the Agro-Ecological Zone Emissions Factor model (~~February 21~~December 31, 2014), posted at http://www.arb.ca.gov/fuels/lcfs/lcfs.htm and available for download at ~~http://www.arb.ca.gov/fuels/lcfs/lcfs_meetings/aezef-model.xlsm~~ http://www.arb.ca.gov/fuels/lcfs/lcfs_meetings/aez-ef_model_v52.xlsm, which is ~~hereby~~ incorporated herein by reference.

(4~~3~~) "**Aggregated Transaction Indicator** ~~**Aggregation Indicator**~~" means an identifier for reported transactions that are a result of an aggregation or summing of more than one transaction in the LRT-CBTS. 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 fuel transaction reported as a single Transaction Number.

(5~~4~~) "Alternative fuel" means any transportation fuel that is not CaRFG or a diesel fuel, including those fuels specified in section 95482(a)(3) through (a)(12).

(6~~5~~) "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.

~~(6) "B100" means biodiesel meeting ASTM D6751-14 (2014) (*Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels*), which is incorporated herein by reference.~~

(7) "Battery electric vehicle (BEV)" means any vehicle that operates solely by use of a battery or battery pack, or that is powered primarily through the use of an electric battery or battery pack but uses a flywheel or capacitor that stores energy produced by the electric motor or through regenerative braking to assist in vehicle operation.

(8) "Biodiesel" means a fuel as defined in California Code of Regulations, title 4, section 4140(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 Code of Federal Regulations (CFR) part 79;~~
~~(B) A mono-alkyl ester;~~
~~(C) Meets ASTM D6751-08 (2014), *Standard Specification for Biodiesel Fuel Blend Stock (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.~~

(9) "Biodiesel Blend" means biodiesel blended with CARB diesel.~~a blend of biodiesel and diesel fuel containing 6 percent (B6) to 20 percent (B20) biodiesel and meeting ASTM D7467-13 (2013), *Specification for Diesel Fuel Oil, Biodiesel Blend (B6 to B20)*, which is incorporated herein by reference.~~

~~(10) "Biofuel Production Facility" means an identifier that refers to the production facility in which the biofuel was produced.~~

(10~~1~~) "Biogas" means the raw gaseous mixture comprised primarily of methane and carbon dioxide and derived from the anaerobic decomposition of organic matter in a landfill, lagoon, or ~~artificial~~ constructed reactor (digester). Biogas often contains a number of other impurities, such as hydrogen sulfide, and it cannot be directly injected into natural gas pipelines or combusted in most natural-gas-fueled vehicles. It can be used as a fuel in boilers and engines to produce electrical power. The biogas can be refined to produce near-pure methane, which is sold as biomethane.

(11~~2~~) "Bio-CNG" means biogas-derived biomethane which has been compressed to CNG. Bio-CNG has equivalent performance characteristics when compared to fossil CNG.

(12~~3~~) "Bio-LNG" means biogas-derived biomethane which has been compressed and liquefied into LNG. Bio-LNG has equivalent performance characteristics when compared to fossil LNG.

(13~~4~~) "Bio-L-CNG" means biogas-derived biomethane which has been compressed, liquefied, re-gasified, and re-compressed into L-CNG, and has performance characteristics at least equivalent to~~. Bio-L-CNG has equivalent or better performance characteristics than~~ fossil L-CNG.

(14~~5~~) "Biomass" means biogenic plant and animal material, especially agricultural or forest waste products which can be used as a source of fuel, or feedstock for the production of fuel, soil amendment, or fertilizer.~~any organic material not derived from fossil fuels, including agricultural crops, agricultural wastes and residues, waste pallets, crates, dunnage, manufacturing, construction wood wastes, landscape and right-of-way tree trimmings, mill residues that result from milling lumber, rangeland maintenance residues, biosolids, sludge derived from organic matter, and wood and wood waste from timbering operations, as defined in the "Renewable Energy Program: Overall Program Guidebook," 2nd~~

~~Ed., California Energy Commission, Report No. CEC-300-2007-003-ED2-CMF, January 2008.~~

(15~~6~~) "Biomass-based diesel" means a biodiesel (mono-alkyl ester) or a renewable diesel that complies with ASTM D975-14a, (2014), *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.

(16~~7~~) "Biomethane" is primarily methane derived from biogas after~~the refined end product when~~ carbon dioxide and other~~the~~ impurities present in the biogas are chemically or physically separated from the ~~methane in the~~gaseous mixture.~~, resulting in a product about 99 percent methane content. This product is called biomethane.~~ Biomethane has equivalent chemical, physical, and performance characteristics as ~~fossil-based~~ methane ~~in natural~~ gas.

(17~~8~~) "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 Greenhouse Gases, Regulated Emissions, and Energy use in Transportation version 2.0 (CA-GREET 2.0-T1 or CA-GREET2.0-T2) model, (May 22, 2015~~December 15, 2014~~), which is incorporated by reference. A blendstock that is used directly as a transportation fuel in a vehicle is considered a finished fuel.

(18~~9~~) "Broker" is a third-party user registered in the LRT-CBTS specifically to facilitate the transfer of credits between regulated parties.

(19~~20~~) "Business Partner" 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~~.

(20~~1~~) "Carbon intensity" means the amount of life cycle greenhouse gas emissions, per unit of fuel energy~~ of fuel delivered~~, expressed in grams of carbon dioxide equivalent per megajoule (gCO_2e/MJ).

(21~~2~~) "Compressed Natural Gas (CNG)" means natural gas that has been compressed to a pressure greater than ambient pressure.

(22~~3~~) "Credit Facilitator (CF)" is a ~~user account role in the~~ LRT-CBTS user assigned by a~~for~~ regulated party~~ies~~ to ~~assign to those personnel that~~ initiate and complete LCFS credit transfers on behalf of their registered organization.

(23~~4~~) "Credit Generator" means a fuel provider for an alternative fuel listed in section 95482(b) who may generate LCFS credits for that fuel by electing to opt into the LCFS pursuant to section 95483.1 and who meets~~meeting~~ the requirements of this regulation.

(24~~5~~) "Credits" and "deficits" mean the measures used for determining a regulated party's compliance with the average carbon intensity requirements in section~~s~~ 95484. Credits and deficits are denominated in units of metric tons of carbon dioxide equivalent (CO_2e), and are calculated pursuant to section 95486(b).

(25~~6~~) "Day" means a calendar day unless otherwise specified as a business day.

(26~~7~~) "Diesel Fuel" (also called conventional diesel fuel) has the same meaning as specified in California Code of Regulations, title 13, section 2281(b).

(27~~8~~) "Diesel Fuel Blend" means a blend of diesel fuel and biodiesel containing no more than 5 percent (B5) biodiesel by weight and meeting ASTM D975-14a, (2014), *Standard Specification for Diesel Fuel Oils*, which is incorporated herein by reference.

(28~~9~~) "E100," also known as "Denatured Fuel Ethanol," means nominally anhydrous ethyl alcohol meeting ASTM D4806-14 (2014), *Standard Specification for Denatured Fuel Ethanol for Blending with Gasolines for Use as Automotive Spark-Ignition Engine Fuel*, which is incorporated herein by reference.

(29~~30~~) "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.

(30~~1~~) "Electric Vehicle (EV)," for purposes of this regulation, refers to Battery Electric Vehicles (BEVs) and Plug-In Hybrid Electric Vehicles (PHEVs).

(31~~2~~) "Energy Economy Ratio (EER)" means the dimensionless value that represents the efficiency of a fuel as used in a powertrain as compared to a reference fuel. EERs are often a comparison of miles per gasoline gallon equivalent (mpge) between two fuels. EERs for fixed guideway systems are based on MJ/number of passenger-miles.

(32~~3~~) “Executive Officer” means the Executive Officer of the Air Resources Board, or his or her designee.

(33~~4~~) “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.

(34~~5~~) “Finished fuel” means a fuel that is used directly in a vehicle for transportation purposes without requiring additional chemical or physical processing.

(35~~6~~) “Fixed guideway system” means a system of public transit electric vehicles that can operate only on its own guideway (directly operated, or DO) constructed specifically for that purpose, such as light rail, heavy rail, cable car, street car, and trolley bus.

(36~~7~~) “Fossil CNG” means CNG that is derived solely from petroleum or fossil sources, such as oil fields and coal beds.

(37~~8~~) “Fossil LNG” means LNG that is derived solely from petroleum or fossil sources, such as oil fields and coal beds.

(38~~9~~) “Fossil L-CNG” means L-CNG that is derived solely from petroleum or fossil sources, such as oil fields and coal beds.

(39~~40~~) “FPC Obligated Amount” means the amount of transportation fuel or blendstock (e.g., gal, scf, kWh, kg) associated with a Fuel Pathway Code (FPC) for which a regulated party must meet the average carbon intensity requirements set forth in Tables 1 and 2 of section 95484.

(40~~1~~) “Fuel Pathway Code” means the identifier in the LRT-CBTS that applies to a specific fuel pathway approved pursuant to section 95488~~in the Lookup Table, as determined pursuant to section 95488(a)~~.

(41~~2~~) “Fuel Transport Mode” means the applicable combination of actual fuel delivery methods, such as truck routes, rail lines, pipelines, 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.

(42~~3~~) “GTAP” or “GTAP Model” means the Global Trade Analysis Project Model (December 2014), which is ~~hereby~~ incorporated herein by reference, and is a software ~~package comprised of RunGTAP (December 2014), a visual-~~

~~interface for use with the GTAP databases (posted at http://www.arb.ca.gov/fuels/lcfs/lcfs.htm in December 2014 and~~ available for download at https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=4577 ~~https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=4347)~~;

(43~~4~~) "Heavy-Duty Vehicle" means a heavy-duty vehicle that is rated at 14,001 or more pounds gross vehicle weight rating (GVWR).

(44~~5~~) "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.

(45~~6~~) "Hybrid electric vehicle (HEV)" means any vehicle that can draw propulsion energy from both of the following on-vehicle sources of stored energy: 1) a consumable fuel, and 2) an energy storage device, such as a battery, capacitor, or flywheel.

(46~~7~~) "Import" means to bring a product from outside California into California.

(47~~8~~) "Importer" means the person who owns the transportation fuel or blendstock, in the transportation equipment that held or carried the product, at the point the fuel~~equipment~~ entered California. For purposes of this definition, "transportation equipment" includes, but is not limited to, rail cars, cargo tanker trucks, and pipelines.

(48~~9~~) "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 95491(a).

(49~~52~~) "Life cycle 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 life cycle, 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.

(50~~1~~) "Light-Duty Vehicle" and "Medium-Duty Vehicle" means a vehicle category that includes both light-duty (LDV) and medium-duty vehicles (MDV).

(A) "LDV" means a vehicle that is rated at 8,500 pounds or less GVWR.

(B) “MDV” means a vehicle that is rated between 8,501 and 14,000 pounds GVWR.

(51~~0~~) “Liquefied Compressed Natural Gas (L-CNG)” means LNG that has been liquefied and transported to a dispensing station where it was then re-gasified and compressed to a pressure greater than ambient pressure.

(52~~3~~) “Liquefied Natural Gas (LNG)” means natural gas that has been liquefied.

(53~~4~~) “Liquefied petroleum gas (LPG or propane)” has the same meaning as defined in Vehicle Code section 380.

(54~~5~~) “Low-Complexity/Low-Energy-Use Refinery” means a refinery that meets both of the following criteria:

(A) A Modified Nelson Complexity Score equal to or less than 5 as calculated in section 95489(e)(1)(A).
(B) Total annual energy use equal to or less than 5 million MMBtu as calculated in section 95489(e)(1)(B).

~~(56) “LRT-CBTS Reporting Deadlines” means the quarterly and annual reporting dates specified in section 95491(a)(1).~~

(55~~7~~) “Modified Nelson Complexity Score” means a Nelson Complexity Score that is calculated without including lube oil and asphalt capacity, as set forth in section 95489(e)(1)(A).

(56~~8~~) “Motor vehicle” has the same meaning as defined in section 415 of the Vehicle Code.

(57~~9~~) “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. For 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.

~~(60) “Multimedia evaluation” has the same meaning as specified in H&S section 43830.8(b) and (c).~~

(58~~61~~) “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.

(59~~62~~) "Nelson Complexity Score" means the commonly used industry measure of a refinery's ability to convert crude oils to finished fuels, taking into consideration the complexity of the technologies incorporated within the process and related capacities as compared to crude distillation.

(60~~3~~) "On-road" means a vehicle that is designed to be driven on public highways and roadways and that is registered or is capable of being registered by the California Department of Motor Vehicles (DMV) under Vehicle Code sections 4000 et seq. – or DMV's equivalent in another state, province, or country; or the International Registration Plan. A vehicle covered under ARB's In-Use Off-Road Regulation, Code of Regulations, title 13, section 2449, is not covered under this definition.

(61~~4~~) "OPGEE" or "OPGEE Model" means the Oil Production Greenhouse gas Emissions Estimator Version 1.1 Draft ~~D~~E (~~October 1, 2014~~April 6, 2015) posted at http://www.arb.ca.gov/fuels/lcfs/lcfs.htm, which is hereby incorporated by reference.

(62~~5~~) "Petroleum Intermediate" means a petroleum product that can be further processed to produce CARBOB, diesel, or other petroleum blendstocks.

(63~~6~~) "Petroleum product" means all refined and semi-refined products that are produced at a refinery by processing crude oil and other petroleum-based feedstocks, including petroleum products derived from co-processing biomass and petroleum feedstock together. "Petroleum product" does not include plastics or plastic products.

(64~~7~~) "Plug-In Hybrid Electric Vehicle (PHEV)" means a hybrid electric vehicle with the capability to charge a battery from an off-vehicle electric energy source that cannot be connected or coupled to the vehicle in any manner while the vehicle is being driven.

(65~~8~~) "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.

(66~~9~~) "Producer" means, with respect to any fuel, the entity that made or prepared the fuel. This definition includes "out-of-state" producers where the production facility is out of the State of California and the entity has opted into the LCFS ~~production as long as~~ pursuant to section 95483.1.

(67~~0~~) "Product Transfer Document (PTD)" means a document that authenticates the transfer of ownership of fuel from a regulated party to the recipient of the fuel. A PTD is created by a regulated party to contain information collectively supplied by other fuel transaction documents, including bills of

lading, invoices, contracts, meter tickets, rail inventory sheets, Renewable Fuels Standard (RFS2) product transfer documents, etc.”

(68~~71~~) “Production facility” means, with respect to any ~~liquid~~ fuel (other than CNG, LNG and L-CNG), a facility at which the fuel is produced. "Production facility" means, with respect to natural gas (CNG, LNG, L-CNG, or biomethane), a facility at which fuel is converted, compressed, liquefied, refined, treated, or otherwise processed into CNG, LNG, L-CNG, biomethane, or biomethane-natural gas blend that is ready for transportation use in a vehicle without further physical or chemical processing.

(69~~72~~) “Public access fueling facility” means a fueling facility that is not a private-access fueling dispenser.

(70~~3~~) “Regulated party” means a person who, pursuant to section 95483 or 95483.1, must meet the average carbon intensity requirements in section 95484.

(71~~4~~) “Renewable Hydrocarbon ~~d~~Diesel” means a diesel fuel that is produced from nonpetroleum renewable resources but is not a mono-alkyl ester and which is registered as a motor vehicle or fuel additive under 40 Code of Federal Regulations part 79.~~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.~~

(72~~5~~) “Reporting Party” means any person who, pursuant to section 95483 or 95483.1 is the initial regulated party holding the compliance obligation, and any person to whom the compliance obligation has been transferred directly or indirectly from the initial upstream regulated party.

(73~~6~~) “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.

(74~~7~~) “Steam Quality” means the ratio of the mass of vapor to the total mass of a vapor-liquid mixture of water at its saturation temperature.

(75~~8~~) "Transaction Date" means the title transfer date as shown on the Product Transfer Document.

(76~~9~~) "Transaction Quantity" means the amount of fuel reported in a transaction. A Transaction Quantity may be reported in gallons, KWh, scf, or other appropriate units.

(77~~80~~) "Transaction Type" means the nature of a fuel-based transaction as defined below:

(A) "Production ~~for use~~ in California" means the transportation fuel was produced at a facility in California for use in California~~designated for use only in California at production, and acquired a compliance obligation under LCFS regardless of production inside or outside of California~~;

(B) "Production for Import" means the transportation fuel was produced outside of California and imported into California for use in transportation. This transaction type is to be reported by out-of-state producers who claim the initial LCFS obligation for fuel imported into California.

(C) "Import" means the transportation fuel was produced outside of California and later brought by any party other than its producer into California for use in transportation. This transaction type is to be reported by non-producers who claim the initial LCFS obligation for out-of-state fuel imported into California.

(D~~B~~) "Purchased with Obligation" means the transportation fuel was purchased with the compliance obligation from a reporting party;

(E~~C~~) "Purchased without Obligation" means the transportation fuel was purchased without the compliance obligation from a reporting party;

(F~~D~~) "Sold with Obligation" means the transportation fuel was sold with the compliance obligation by a reporting party;

(G~~E~~) "Sold without Obligation" means the transportation fuel was sold without the compliance obligation by a reporting party;

(H~~F~~) "Export" means a transportation fuel was reported with compliance obligation under the LCFS but was later exported outside of California;

(I~~G~~) "Loss of Inventory" means the fuel entered the California fuel pool but was not used due to volume loss;

(J~~H~~) "Gain of Inventory" means the fuel entered the California fuel pool due to a volume gain;

(K~~I~~) "Not Used for Transportation" means a transportation fuel was reported with compliance obligation under the LCFS but was later not used for transportation purposes in California or otherwise determined to be exempt under section 95482(d);

(L~~J~~) "EV Charging" means providing electricity to recharge EVs~~plug-in electric vehicles, including battery electric vehicles and plug-in hybrid electric vehicles~~;

(M~~K~~) "Fixed Guideway Charging" means fueling light rail or heavy rail, exclusive right-of-way bus operations, or trolley coaches with electricity;

(N~~L~~) "Forklift Fueling~~Charging~~" means providing fuel (electricity, hydrogen, etc.) to~~electricity to recharge electric~~ forklifts;

(O~~M~~) "NGV Fueling" means the dispensing of natural gas at a fueling station designed for fueling natural gas vehicles.

(78~~1~~) "Transmix" means a mixture of refined products that forms when these products are transported through a pipeline. This mixture is typically a combination of two of the following: gasoline, diesel, or jet fuel.

(79~~82~~) "Transportation fuel" means any fuel used or intended for use as a motor vehicle fuel or for transportation purposes in a non-vehicular source.

(b) *Acronyms.* For the purposes of sections 95480 through 95497, the following acronyms apply.

~~(1)~~ "AEZ-EF" means Agro-Ecological Zone Emissions Factor model.
~~(2)~~ "ASTM" means ASTM International (formerly American Society for Testing and Materials).
~~(3)~~ "BEV" means battery electric vehicles.
~~(4)~~ "CA-GREET" means California-modified Greenhouse Gases, Regulated Emissions, and Energy use in Transportation model.
~~(5)~~ "CARBOB" means California reformulated gasoline blendstock for oxygenate blending.
~~(6)~~ "CaRFG" means California reformulated gasoline.
~~(7)~~ "CEC" means California Energy Commission.
~~(8)~~ "CFR" means ~~code of federal regulations~~ Code of Federal Regulations.
~~(9)~~ "CI" means carbon intensity.
~~(10)~~ "CNG" means compressed natural gas.
~~(11)~~ "EER" means energy economy ratio.
~~(12)~~ "EV" means electric vehicle.
~~(13)~~ "FCV" means fuel cell vehicles.
~~(14) "FFV" means flexible-fuel vehicles.~~
~~(15) "FOA" means Fuel Obligated Amount.~~
~~(16) "FPCOA" means FPC Obligated Amount.~~
~~(17)~~ "gCO_2e/MJ" means grams of carbon dioxide equivalent per megajoule.
~~(18) "GREET" means the Greenhouse Gases, Regulated Emissions, and Energy use in Transportation model.~~
~~(19)~~ "GTAP" means the Global Trade Analysis Project model.
~~(20)~~ "GVWR" means gross vehicle weight rating.
~~(21)~~ "HDV" means heavy-duty vehicles.

~~(22)~~ “HDV-CIE” means a heavy-duty vehicle compression-ignition engine.
~~(23)~~ “HDV-SIE” means a heavy-duty vehicle spark-ignition engine.
~~(24)~~ “HEV” means hybrid electric vehicle.
~~(25)~~ “ICEV” means internal combustion engine vehicle.
~~(26)~~ “~~I~~iLUC” means indirect land use change.
~~(27)~~ “LCFS” means Low Carbon Fuel Standard.
~~(28)~~ “LDV” means light-duty vehicles.
~~(29)~~ “L-CNG” means liquefied compressed natural gas.
~~(30)~~ “LNG” means liquefied natural gas.
~~(31)~~ “LPG” means liquefied petroleum gas.
~~(32)~~ “LRT-CBTS” means LCFS Reporting Tool and Credit Bank & Transfer System.~~”~~
~~(33)~~ “MCON” means marketable crude oil name.
(~~34)~~ “MDV” means medium-duty vehicles.
~~(35)~~ “MMBtu” means million British Thermal Units.
~~(36)~~ “MT” means metric tons of carbon dioxide equivalent.
~~(37)~~ “NGV” means a natural gas vehicle.
~~(38)~~ “OPGEE” means Oil Production Greenhouse gas Emissions Estimator Model
~~(39)~~ “PHEV” means plug-in hybrid vehicles.
~~(40)~~ “TEOR” means thermally enhanced oil recovery.
~~(41)~~ “ULSD” means California ultra-low sulfur diesel.

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, ~~43000.5, 43013~~ and 43018 Health and Safety Code; 42 U.S.C. section 7545, 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, 39515, 39516, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511 and 43000, Health and Safety Code; Section 25000.5, Public Resources Code; and *Western Oil and Gas Ass’n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

§ 95482. Fuels Subject to Regulation.

(a) *Applicability of the Low Carbon Fuel Standard.* Except as provided in this section, the California Low Carbon Fuel Standard regulation, California Code of Regulations (CCR), title 17, sections 95480 through 95497 (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 95483, 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”), fossil liquefied natural gas (“Fossil LNG”), or fossil liquefied compressed natural gas (“Fossil L-CNG);

(4) Bio-CNG, bio-LNG, or bio-L-CNG;
(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.

(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 sections 95484(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 95483.1 and meeting the requirements of this regulation:

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

(c) *Exemption for Specific Alternative Fuels*. The LCFS regulation does not apply to an alternative fuel that meets the criteria in either subsections (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) Military tactical vehicles and tactical support equipment, as defined in title 13, CCR, section 1905(a) and CCR, title 17, section 93116.2(a)(36), respectively;
(2) Locomotives not subject to the requirements specified in CCR, title 17, section 93117;
(3) Ocean-going vessels, as defined in CCR, title 17, section 93118.5(d). This exemption does not apply to recreational and commercial harbor craft, as defined in CCR, title 17, section 93118.5(d); and
(4) Aircraft.

(e) Nothing in this LCFS regulation (Cal. Code Regs., tit. 17, §§ 95480 et seq.) may be construed to amend, repeal, modify, or change in any way the California reformulated gasoline regulations (CaRFG, Cal.Code Regs., tit. 13, §§ 2260 et seq.), the California diesel fuel regulations (Cal.Code Regs., tit. 13, §§ 2281-2285 and Cal.Code Regs., tit. 17, § 93114), or any other applicable State or federal requirements. A person, including 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 the CaRFG requirements and obtaining any necessary approvals, exemptions, or orders from either the State or federal government.

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

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, ~~43000.5, 43013~~ and 43018 Health and Safety Code; 42 U.S.C. section 7545, 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, 39515, 39516, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, and 43000, Health and Safety Code; Section 25000.5, Public Resources Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

§ 95483. Regulated Parties.

Except as provided in this section, the LCFS applies to any person who, as a regulated party defined in section 95481 and specified in section 95483(a), is responsible for a transportation fuel in a calendar year. The purpose of this part is to establish the criteria by which ~~a~~ regulated party status 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.

(a) *Regulated Parties for Gasoline and Diesel*.

(1) *Designation of Producers and Importers as Regulated Parties*.

(A) *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:

1. With respect to the CARBOB, the regulated party is the producer or importer of the CARBOB; and

2. With respect to the oxygenate, the regulated party is the producer or importer of the oxygenate.

(B) *All Other Gasoline.* For any other gasoline that does not fall within section 95483(a)(1)(A) the regulated party is the producer or importer of the gasoline. Where additional oxygenate is added to gasoline, the regulated party with respect to the oxygenate is initially the producer or importer of the oxygenate.

(C) *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:

1. With respect to the diesel fuel, the regulated party is the producer or importer of the diesel fuel; and

2. With respect to the biomass-based diesel, the regulated party is the producer or importer of the biomass-based diesel.

(D) *All Other Diesel Fuels.* For any other diesel fuel that does not fall within section 95483(a)(1)(C), the regulated party is the producer or importer of the diesel fuel.

(2) *Effect of Transfer of CARBOB, Diesel Fuel, or Diesel Fuel Blends by Regulated Party.*

~~(A) *Threshold Determination Whether Recipient of CARBOB, Diesel Fuel or Diesel Fuel Blends is a Producer or Importer.* Whenever a person who is the regulated party for CARBOB, Diesel Fuel or Diesel Fuel Blends transfers ownership of the CARBOB, Diesel Fuel or Diesel Fuel Blends, the recipient must notify the transferor whether the recipient is a producer or importer for purposes of this section.~~

~~(B) *Producer or Importer Acquiring CARBOB, Diesel Fuel, or Diesel Fuel Blends Becomes the Regulated Party Unless Specified Conditions are Met.* Except as provided for in section 95483(a)(2)(C), when a person who is the regulated party transfers ownership of the CARBOB, Diesel Fuel or Diesel Fuel Blends to a producer or importer, the recipient of ownership of the CARBOB, Diesel Fuel or Diesel Fuel Blends (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 section 95491(c)(1) and the transferor and recipient must meet the requirements specified in the subsection below:~~

~~For purposes of section 95485(a), except as provided in subsection (B)3. of this provision:~~

~~1. The transferor must include the $Deficits^{XD}_{Incremental20XX}$, as defined and set forth in section 95489(b), in the transferor's annual credits and deficits balance calculation set forth in section 95485(b)(2); and~~

~~2. The recipient must include $Deficits^{XD}_{Base}$, as defined and set forth in section 95489(b), in the recipient's annual credits and deficits balance calculation set forth in section 95485(b)(2).~~

~~3. Subsections (B)1. and (B)2. above notwithstanding, the transferor and recipient of CARBOB, Diesel Fuel, or Diesel Fuel Blends 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(b)(2).~~

~~(C) *Transfer of CARBOB, Diesel Fuel, or Diesel Fuel Blend to a Producer or Importer and Retaining Compliance Obligation.* Section 95483(a)(2)(B) notwithstanding, a regulated party transferring ownership of CARBOB, 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 CARBOB, Diesel Fuel or Diesel Fuel Blend by providing the recipient at the time of transfer with a product transfer document that prominently states the information specified in section 95491(c)(1).~~

~~(D) *If Recipient is not a Producer or Importer, Regulated Party Transferring CARBOB, Diesel Fuel, or Diesel Fuel Blends Remains*~~

~~*Regulated Party Unless Specified Conditions are Met.* When a person who is the regulated party for CARBOB, Diesel Fuel or Diesel Fuel Blends transfers ownership of the CARBOB, Diesel Fuel or Diesel Fuel Blends to a person who is not a producer or importer, the transferor remains the regulated party unless the conditions of section 95484(a)(2)(E) are met.~~

~~(E) *Conditions under which a Non-Producer and Non-Importer Acquiring Ownership of CARBOB, Diesel Fuel, or Diesel Fuel Blends 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. A person, ~~who is neither a producer nor an importer and~~ who acquires ownership of Diesel Fuel or Diesel Fuel Blends from the regulated party above the rack, may become the regulated party for the Diesel Fuel or Diesel Fuel Blends 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 section 95491(c), and the transferor and recipient must meet the requirements specified in the subsection below:

For purposes of section 95485(a), except as provided in subsection 3. of this provision:

(A)~~1.~~ The transferor must include the $Deficits^{XD}_{Incremental20XX}$, as defined and set forth in section 95489(b), in the transferor's annual credits and deficits balance calculation set forth in section 95485(b)(2); and

(B)~~2.~~ The recipient must include $Deficits^{XD}_{Base}$, as defined and set forth in section 95489(b), in the recipient's annual credits and deficits balance calculation set forth in section 95485(b)(2).

(C)~~3.~~ Subsections (A)~~E)1.~~ and (B)~~E)2.~~ above notwithstanding, the transferor and recipient of CARBOB, Diesel Fuel or Diesel Fuel Blends 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 ~~i~~in the

annual credits and deficits balance calculation set forth in section 95485(b)(2).

(3) *Effect of Transfer by Regulated Party of Oxygenate or Biomass-Based Diesel to be Blended with CARBOB, Gasoline, Diesel Fuel, or Diesel Fuel Blends.*

(A) *Person Acquiring the Oxygenate or Biomass-Based Diesel Becomes the Regulated Party Unless Specified Conditions are Met.* Except as provided in section 95483(a)(3)(B), when a person who is the regulated party for oxygenate or biomass-based diesel to be blended with CARBOB, Gasoline, Diesel Fuel or Diesel Fuel Blends transfers ownership of the oxygenate or biomass-based diesel before it has been blended with CARBOB, Gasoline, Diesel Fuel or Diesel Fuel Blends, the new owner~~recipient of ownership~~ of the oxygenate or 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 the information specified in section 95491(c)(1).

(B) *Transfer of Oxygenate or Biomass-Based Diesel and Retaining Compliance Obligation.* Section 95483(a)(3)(A) notwithstanding, a regulated party transferring ownership of oxygenate or Biomass-Based Diesel may elect to remain the regulated party and retain the LCFS compliance obligation for the transferred oxygenate or Biomass-Based Diesel by providing the recipient at the time of transfer with a product transfer document that prominently states the information specified in 95491(c)(1).

(4) *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.

(A) Blending the additional oxygenate into the gasoline is not prohibited by CCR, title 13, section 2262.5(d).

(B) 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.

(C) The transferor provides the recipient a product transfer document that prominently states the information specified in section

95491(c), and the transferor and recipient must meet the requirements specified in the subsection below:

For purposes of section 95485(a), except as provided in subsection (C)3. of this provision:

1. The transferor must include the $Deficits^{XD}_{Incremental20XX}$, as defined and set forth in section 95489(b), in the transferor's annual credits and deficits balance calculation set forth in section 95485(b)(2); and

2. The recipient must include $Deficits^{XD}_{Base}$, as defined and set forth in section 95489(b), in the recipient's annual credits and deficits balance calculation set forth in section 95485(b)(2).

3. Subsections (C)1. and (C)2. above notwithstanding, the transferor and recipient of CARBOB, Diesel Fuel, or Diesel Fuel Blends 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(b)(2).

(D) The written contract between the parties includes an agreement that the recipient of the gasoline will be blending additional oxygenate into the gasoline.

~~(5) *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 95483(a)(1)(C)~~.

(b) *Regulated Parties for Liquid Alternative Fuels not Blended with Gasoline or Diesel Fuel.* For a liquid alternative fuel, including 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.

(c) *Regulated Parties for Blends of Liquid Alternative Fuels and Gasoline or Diesel Fuel.*

(1) *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:

(A) 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

(B) 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.

(2) *Effect of Transfer of a Blend of Liquid Alternative Fuel and Gasoline or Diesel Fuel and Compliance Obligation.* Except as provided for in section 95483(c)(3) ~~95483(a)(4)(C)~~, on each occasion that a person transfers ownership of fuel that falls within section 95483(c) ~~95483(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 the information specified in section 95491(c)(1).

(3) *Effect of Transfer of a Blend of Liquid Alternative Fuel and Gasoline or Diesel Fuel and Retaining Compliance Obligation.* Section 95483(c)(2) ~~95483(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 prominently states the information specified in section 95491(c)(1).

(d) *Regulated Parties for Natural Gas (Including CNG, LNG, L-CNG, and Biomethane).*

(1) *Designation of Regulated Parties for Fossil CNG and Bio-CNG.*

(A) *Where Bio-CNG is Added to Fossil CNG.* For fuel consisting of a fossil CNG and bio-CNG blend, the regulated party is initially the following:

1. With respect to the fossil CNG, the regulated party is the entity that owns the natural gas fueling equipment at the facility at which the fossil CNG and bio-CNG blend is dispensed to motor vehicles for their transportation use; and

2. With respect to the bio-CNG, the regulated party is the producer or importer of the biomethane injected into the pipeline for delivery to the CNG dispensing station.

(B) *Where No Bio-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.

(2) *Designation of Regulated Parties for Fossil LNG and Bio-LNG.*

(A) *Where Bio-LNG is Added to Fossil LNG.* For a fuel consisting of a fossil LNG and bio-LNG blend, the regulated party is initially the following:

1. With respect to the fossil LNG, the regulated party is the entity that owns the fossil LNG right before it is transferred to storage at the facility at which the liquefied blend is dispensed to motor vehicles for their transportation use; and

2. With respect to the bio-LNG, the regulated party is the producer or importer of the biomethane injected into the pipeline for delivery to the LNG production facility.

(B) *Where No Bio-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 right before it is transferred to storage at the facility at which the fossil LNG is dispensed to motor vehicles for their transportation use.

(3) *Designation of Regulated Parties for LNG that is Re-Gasified and Compressed to CNG (L-CNG).*

(A) *Where Bio-LNG is Added to Fossil LNG prior to Re-Gasification and Compression to CNG.*

1. With respect to the L-CNG re-gasified and compressed from fossil LNG, the regulated party is the entity that owns the fossil LNG right before it is transferred to the facility at which the liquefied blend is re-gasified and dispensed to motor vehicles for their transportation use; and

2. With respect to the bio-L-CNG re-gasified and compressed from bio-LNG, the regulated party is the producer or importer of the biomethane injected into the pipeline for delivery to the LNG production facility.

(B) *Where No Bio-LNG is Added to Fossil LNG prior to Compression to CNG.* For fuel consisting solely of fossil LNG re-gasified and compressed to CNG, the regulated party is initially the person that owns the fossil LNG right before it is transferred to the facility at which the fossil LNG is re-gasified and dispensed to motor vehicles for their transportation use.

(4) *Designation of Regulated Party for Bio-CNG or Bio-LNG or Bio-L-CNG Supplied Directly to Vehicles for Transportation Use.* For fuel consisting solely of bio-CNG, bio–LNG, or Bio-L-CNG 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 bio-CNG or biogas-LNG or bio-L-CNG.

(5) *Effect of Transfer of Fuel by Regulated Party.*

(A) *Transferor Remains Regulated Party Unless Conditions are Met.* When a person who is the regulated party for a fuel specified in section 95483(d)(1) through (4), transfers ownership of the fuel, the transferor remains the regulated party unless the conditions of the following subsection are met.

(B) *Conditions Under Which a Person Acquiring Ownership of a Fuel Becomes the Regulated Party.* Notwithstanding the previous subsection (A), a person acquiring ownership of a fuel specified in section 95483(d)(1) through (4) 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 the information specified in section 95491(c).

(e) *Regulated Parties for Electricity.* For electricity used as a transportation fuel, the party who is eligible to generate credits is determined as specified below:

(1) For on-road transportation fuel supplied through electric vehicle (EV) charging in a single- or multi-family residence, the Electrical Distribution Utility is eligible to generate credits in its~~their~~ service territory. To receive such credits,~~credit for electricity supplied as a transportation fuel under any provision in this section,~~ the Electrical Distribution Utility must:

(A) Use all credit proceeds to benefit current or future EV customers;~~:~~

(B) Educate the public on the benefits of EV transportation (including environmental benefits and costs of EV charging, or total cost of ownership, as compared to gasoline);~~. These efforts may include, but are not limited to:~~

~~1. public meetings~~
~~2. EV dealership flyers~~
~~3. utility customer bill inserts~~
~~4. advertising~~
~~5. web page content~~

(C) Provide rate options that encourage off-peak charging and minimize adverse impacts to the electrical grid; and~~.~~

(D) Include in annual compliance reporting the following supplemental information: an itemized summary of efforts to meet requirements ~~subsections~~ (A) through (C) above and costs associated with meeting the requirements. ~~ARB will post the supplemental information for public review by May 31st of each year.~~For investor owned utilities, this requirement may be satisfied by supplying a copy of the annual implementation report required under Order 4 of Public Utilities Commission of California (PUC) Decision 14-12-083, or any successor PUC Decisions.

(2) For on-road transportation fuel supplied through public access EV charging, the Electrical Distribution Utility is eligible to generate credits in its service territory. Upon submittal to and approval by the Executive Officer of its written request to opt in and generate the credits under this provision, 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 generate the credits~~. If the EVSP is not reporting for a specific volume of fuel, or has not fully complied with the requirements of this subarticle, the Electrical Distribution Utility is eligible to generate credits~~ for the electricity ~~with Executive Officer approval~~. To receive credit for transportation fuel supplied through public access EV charging equipment, ~~the following requirements apply:~~the EVSP or Electrical Distribution Utility must meet the requirements set forth in section 95483(e)(1)(B) through (D).

~~(A) Use all credit proceeds to benefit current or future EV customers~~.

~~(B) Educate the public on the benefits of EV transportation (including environmental benefits and costs of EV charging, or total cost of~~

~~ownership, as compared to gasoline). These efforts may include, but are not limited to:~~

~~1. public meetings~~
~~2. EV dealership flyers~~
~~3. utility customer bill inserts~~
~~4. advertising~~
~~5. web page content~~

~~(C) Provide rate options that encourage off-peak charging and minimize adverse impacts to the electrical grid.~~

~~(D) Include in annual compliance reporting the following supplemental information: an itemized summary of efforts to meet requirements subsections (A) through (C) above and costs associated with meeting the requirements. ARB will post the supplemental information for public review by May 31st of each year.~~

(3) EV Fleets

(A) For on-road transportation fuel supplied to a fleet of EVs, ~~a person operating a fleet (fleet operator) is eligible to generate credits.~~the Electrical Distribution Utility is eligible to generate credits in its service territory, and must meet the requirements set forth in section 95483(e)(1)(B) through (D). Upon submittal to and approval by the Executive Officer of the fleet operator's written request to opt in and generate credits associated with a specified fleet,~~If the fleet operator is not generating credits for a specific volume of fuel, or has not otherwise fully complied with the requirements of this subsection,~~ the ~~Electrical Distribution Utility~~fleet operator is eligible to generate the credits for the electricity~~ with Executive Officer approval~~. To receive credit for transportation fuel supplied to an EV fleet, an accounting of the number of EVs in the fleet must be included as supplemental information in annual compliance reporting.

(B) For on-road transportation fuel supplied ~~to a fleet~~ through the use of a battery switch station, the ~~station owner is eligible generate credits~~Electrical Distribution Utility is eligible to generate credits in its service territory, and must meet the requirements set forth in section 95483(e)(1)(B) through (D). Upon submittal to and approval by the Executive Officer of the station owner's written request to opt in and generate credits associated with a specific location or locations, the station owner ~~If the station owner is not generating credits for a specific amount of fuel, or has not otherwise fully complied with the requirements of this subsection,~~

~~the Electrical Distribution Utility~~ is eligible to generate the credits for the electricity~~ with Executive Officer approval~~.

(4) For on-road transportation fuel supplied through private access EV charging equipment at a business or workplace, the ~~business owner is eligible to generate credits.~~Electrical Distribution Utility is eligible to generate credits in its service territory, and must meet the requirements set forth in section 95483(e)(1)(B) through (D). Upon submittal to and approval by the Executive Officer of the site host's written request to opt in and generate credits associated with a specific location or locations,~~If the business owner is not generating credits for a specific volume of fuel, or has not fully complied with the requirements of this subsection,~~ the ~~Electrical Distribution Utility~~site host is eligible to generate the credits for the electricity~~ with Executive Officer approval~~. To receive credit for transportation fuel supplied through private access EV charging equipment at a business or workplace, the following requirements apply to a site host that opts in:

(A) Educate employees on the benefits of EV transportation (including environmental benefits and costs of EV charging, or total cost of ownership, as compared to gasoline) through outreach efforts directed to all employees, such as meetings, flyers, and preferred parking; and~~that may include, but are not limited to:~~

~~1. employee meetings~~
~~2. public meetings~~
~~3. EV dealership flyers~~
~~4. employee flyers~~
~~5. web page content~~
~~6. preferred parking~~

(B) Include in annual compliance reporting the following supplemental information: a summary of efforts to meet the requirement in 95483(e)(4)(A), above,~~requirement 1~~ and an accounting of the number of EVs known to be charging at the business.

(5) In the event that there is measured on-road electricity as a transportation fuel that is not covered in subsections ~~(B) through (D)~~95483(e)(1) through (4) above, the Electrical Distribution Utility is eligible to generate credits for the electricity with Executive Officer approval, and must meet the requirements set forth in section 95483(e)(1)(B) through (D).

(6) For transportation fuel supplied to a fixed guideway system, the transit agency operating the system is eligible to generate credits for electricity used to propel the system. Upon submittal to and approval by the Executive Officer of the transit agency's written acknowledgment that it will

not opt in and generate credits under this provision.~~If the transit agency is not generating credits for a specific volume of fuel,~~ the Electrical Distribution Utility is eligible to generate the credits~~report~~ for the electricity~~ with written consent of the transit agency with Executive Officer approval~~, and must meet the requirements set forth in section 95483(e)(1)(B) through (D).

(7) For transportation fuel supplied to electric forklifts, the Electrical Distribution Utility is eligible to generate credits for the electricity, and must meet the requirements set forth in section 95483(e)(1)(B) through (D). **Upon submittal to and approval by the Executive Officer of the electric forklift fleet operator's written request that it will opt in and generate credits associated with a specified fleet, the fleet operator is eligible to generate the credits for the electricity. To receive credit for transportation fuel supplied to an electric forklift fleet, an accounting of the number and of electric forklifts in the fleet must be included by the fleet operator as supplemental information in annual compliance reporting.**

(f) *Regulated Parties for Hydrogen or a Hydrogen Blend.*

(1) *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 person who owns the finished hydrogen fuel at the time the finished fuel is created is eligible to generate credits. A hydrogen blend is considered to be a finished hydrogen fuel at completion of blending.

(2) *Conditions under which a Person Acquiring Ownership of Finished Hydrogen Fuel Becomes Eligible to Generate Credits.* A person who acquires ownership of finished hydrogen fuel is eligible to generate credits 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 is eligible to generate credits. For the transfer of eligibility to generate credits to be effective, the transferor must also provide the recipient a product transfer document that prominently states the information specified in section 95491(c)(1).

(3) For hydrogen fuel cell forklifts, the forklifts fleet owner is eligible to generate credits for the hydrogen.

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, ~~43000.5, 43013~~ and 43018 Health and Safety Code; 42 U.S.C. section 7545, 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, 39515, 39516, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, and 43000, Health and Safety Code; Section 25000.5, Public Resources Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

§ 95483.1. Opt-In Parties.

(a) *Eligibility.* Only a person who meets one or more of the following criteria can elect to opt into the LCFS program, thereby becoming a credit generator subject to the requirements of a regulated party in the LCFS program for a specified volume of fuel or crude oil.

(1) A person who provides a fuel specified in section 95482 and meets the requirements of section 95483(d), (e) or (f), whichever applies to that fuel;

(2) 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. A credit generator under this subsection may retain the compliance obligation, for a specific volume of fuel or blendstock, only if that person sells the fuel to a regulated party.

(3) A person who is in the distribution/marketing chain of imported fuel and is positioned on that chain between the producer under (2) and the importer ("intermediate entity"). The intermediate entity is subject to the following requirements.

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 95483.1; or
2. The producer did not opt in under section 95483.1(a)(2).

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

(D) The fuel delivered under subsection (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.

(F) The demonstrations in subsections (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 credit generator pursuant to this subsection, the person must retain documentation to support the demonstrations required in subsections (A) through (E), above, and must submit such documentation to the Executive Officer within 30 calendar days upon request.

(4) 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 95483(d). The natural gas supplier must provide written documentation to the Executive Officer demonstrating all the following before opting in to the LCFS:

(A) The person who falls within the provisions of section 95483(d) understands that it has the ability to opt into the LCFS program as a regulated party;

(B) The person has affirmatively elected not to become a credit generator in the LCFS program;

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

(D) As a consequence of the above election, the person 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.

(5) A producer of crude oil that has an innovative production method approved by the Executive Officer under section 95489(d). A producer may simultaneously apply to opt in and apply for approval of an innovative method pursuant to section 95489(d).

(b) *Procedure.* Opting into the LCFS program is available only to a person that is eligible under subsection (a), above. The procedure for opting into and opting out of the LCFS for such a person is set forth as follows.

(1) Opting into the LCFS program becomes effective when the fuel provider or crude oil producer establishes an account in the Low Carbon Fuel Standard Reporting Tool and Credit Bank & Transfer System (LRT-CBTS), pursuant to section 95483.2. The opt-in credit generator

may not report and generate credits and deficits based on transactions that precede the quarter in which the party opted in.

(2) Establishing an account in the LRT-CBTS under subsection (b)(1) above as a regulated party means that the fuel provider or crude oil producer 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 95493, in exchange for gaining the ability to generate and trade LCFS credits.

(c) *Opting Out.* A fuel provider or crude oil producer, who elected to become a credit generator by opting into the LCFS pursuant to subsection (a) above, may decide later to return to exempt status pursuant to this section. For a credit generator to elect to opt out of the LCFS regulation and for it to be effective, the credit generator must complete all actions specified below. The actions are to be completed and documentation to be submitted in the LRT-CBTS as specified below:

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

(D) Provide a 90-day notice of intent to opt out and a proposed effective data for the completion of the opt-out process;

(E) Submit any outstanding quarterly progress reports and annual compliance reports; and

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

(2) *Effective Opt-Out Date.* Prior to the effective opt-out date, the credit generator must submit a final quarterly progress report for the quarter in which opt-out occurs, submit a final annual compliance report (covering the year through the opt-out date in which the opt-out is effective), and submit verification that any remaining deficits have been eliminated. The Executive Officer shall notify the credit generator of the final “approval” status of the opt-out. Any credits that remain in the credit generator’s account at the time of the effective opt-out date shall be forfeited and the credit generator’s account in the LRT-CBTS shall be closed.

(d) *Recordkeeping Requirements.* The provisions and requirements in section 95491 (b) through (e) shall apply to any credit generator that has opted into or out of the LCFS program.

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, ~~43000.5, 43013~~ and 43018 Health and Safety Code; 42 U.S.C. section 7545, 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, 39515, 39516, 38571, 38580, 39000, 39001, 39002, 39003, 39515,

39516, 41510, 41511 and 43000, Health and Safety Code; Section 25000.5, Public Resources Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

§ 95483.2. Establishing a LCFS Reporting Tool Account

(a) *Eligibility and Restrictions.*

(1) To establish an account in the LRT-CBTS, a reporting party must qualify pursuant to section 95483 or 95483.1.

(2) A reporting party that desires to establish separate accounts for separate subsidiaries must register each subsidiary separately. Each company that receives a user account must file quarterly and annual reports and demonstrate compliance separately.

(b) *Requirements to Establish Account.*

(1) A reporting party, including a regulated or opt-in party, must register in the LRT-CBTS. The on-line application form requires:

(A) Organization Name, Address, State and County, Date, and Place of Incorporation.

(B) Organization Federal Employer Identification Number (FEIN), Primary Contact Name, Business and Mobile Phone, E-mail Address, Username, and Password.

A letter on company letterhead stating the basis for qualifying for an account pursuant to sections 95483 or 95483.1 of the LCFS and naming the primary account administrator and at least one secondary account administrator. This letter must be signed by the business owner, a managing partner, or a corporate officer. A signed pdf copy must be uploaded in the LRT-CBTS to complete the application process. The original is to be mailed to:

California Air Resources Board
c/o Low Carbon Fuel Standard Program
P.O. Box 2815
Sacramento, CA 95812

(C) The name, title, and relationship to the reporting party for a primary and at least one secondary account administrator (e.g., "Primary account administrator is John Doe, Vice President for Fuels Marketing, Employee. Secondary account representative is Sue

Smith, principal consultant, ABC Consulting Group, consultant to [Entity]").

(D) The primary account administrator and the secondary account administrator(s) must attest in writing, as follows:

1. "I certify under penalty of perjury under the laws of the State of California as follows: I was selected as the primary account administrator or the secondary account administrator, as applicable, by an agreement that is binding on all persons who have the legal right to control LCFS credits held in the account. I have all the necessary authority to carry out the duties and responsibilities contained in California Code of Regulations, title 17, sections 95480 et seq. on behalf of such persons and that each such person shall be fully bound by my representations, actions, inactions, or submissions and by any order or decision issued to me by the Executive Officer or a court regarding the account."

2. The certification must be on the company letterhead and signed and dated by the account administrators. A pdf version must be uploaded into LRT-CBTS Organization Registration page and the original with signature must be mailed to address above.

(2) The primary and secondary account administrators can be changed by following steps set forth in section 95483.2 (b)(1)(C) and (D) above. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous account administrators prior to the time and date when the Executive Officer receives the superseding information shall be binding on the registered party.

(3) Applicants may be denied registration:

(A) Based on information provided;

(B) If the Executive Officer determines the applicant has provided false or misleading information; or

(C) If the Executive Officer determines the applicant has withheld information material to its application.

(c) *Account Management Roles and Duties.*

(1) Account administrators are responsible for submitting quarterly and annual reports and making any changes to the company profile within LRT-CBTS.

(2) Account administrators may designate users within the company who can review data or review and upload data, but not submit reports.

(3) An account administrator can identify in the LRT-CBTS one or more employees to act as a Credit Facilitator.

(4) A Credit Facilitator is a reporting party employee, registered in the LRT-CBTS as a Credit Facilitator, who has permission to review all reports and data and can initiate and complete credit transfers, add credits to the listing of "Credits to Sell," and access the Incoming and Outgoing Credit Transfer Logs.

(5) A Broker is not a reporting party employee. Once registered by the Executive Officer and authorized in the LRT-CBTS by an account administrator, a Broker may represent the reporting party in LCFS credit transfers. The on-line Broker registration application form includes:

(A) Broker's Organization Name, Address, State and County, Date, and Place of Incorporation, if applicable.

(B) Broker Organization's Federal Employer Identification Number (FEIN), Primary Contact Name, Business and Mobile Phone, E-mail Address, Username, and Password.

(C) Broker's statement attesting: "By submitting this Broker Registration Application to the LCFS Program for an account in the LRT-CBTS, I am submitting to the jurisdiction of the California courts. I certify under penalty of perjury that I have not been convicted of a felony in the last five years."

(d) *Deadline to Establish an Account.*

(1) Reporting parties who had LRT-CBTS accounts as of the date this section becomes effective must complete the steps set forth in subsection 95483.2(b), above, within 90 days of this subsection's effective date. Failure to do so will result in account closure and forfeit of any credits.

(2) All other regulated parties responsible for any transportation fuels pursuant to section 95483 must complete registration at least 30 days prior to the date for filing any report required under this subsection.

(3) An opt-in party, other than one subject to the deadline in subsection (d)(1) above, can register anytime during a calendar year. All quarterly and annual reporting is then required, beginning with the quarter in which registration was approved.

(4) Any Broker must register in LRT-CBTS prior to facilitating any LCFS credit trades.

(e) *Account Approval.* The account is established when the Executive Officer approves the application.

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, ~~43000.5, 43013~~ and 43018 Health and Safety Code; 42 U.S.C. section 7545, 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, 39515, 39516, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516 and 43000, Health and Safety Code; Section 25000.5, Public Resources Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

§ 95484. Average Carbon Intensity Requirements.

(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.

(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 (gCO_2e/MJ)***
2010	Reporting Only
2011~~*~~	95.61
2012	95.37
2013~~**~~	97.96
2014	97.96
2015	97.96
2016~~***~~	~~97.20~~96.50

Year	Average Carbon Intensity (gCO_2e/MJ)
2017	~~95.71~~95.02
2018	~~94.22~~93.55
2019	~~91.74~~91.08
2020 and subsequent years	~~89.26~~88.62

* The average carbon intensity requirements for years 2011 and 2012 reflect reductions from base year (2010) CI values for CaRFG (95.85) calculated using the CI for crude oil supplied to California refineries in 2006.
** The average carbon intensity requirements for years 2013 to 2015~~2020~~ reflect reductions from revised base year (2010) CI values for CaRFG (98.95) calculated using the CI for crude oil supplied to California refineries in 2010.
*** In 2015 the LCFS was readopted and the CI modeling updated. The average carbon intensity requirements for years 2016 to 2020 reflect reductions from revised base year (2010) CI values for CaRFG (98.47).

(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 (gCO_2e/MJ)
2010	Reporting Only
2011*	94.47
2012	94.24
2013**	97.05
2014	97.05
2015	97.05
2016***	~~100.76~~99.97
2017	~~99.22~~98.44
2018	~~97.68~~96.91

Year	*Average Carbon Intensity (gCO_2e/MJ)*
2019	~~95.11~~94.36
2020 and subsequent years	~~92.54~~91.81

~~*~~ The average carbon intensity requirements for years 2011 and 2012 reflect reductions from base year (2010) CI values for ULSD (94.71) calculated using the CI for crude oil supplied to California refineries in 2006.
** The average carbon intensity requirements for years 2013 to 2015~~2020~~ reflect reductions from revised base year (2010) CI values for ULSD (98.03) calculated using the CI for crude oil supplied to California refineries in 2010.
*** In 2015 the LCFS was readopted and the CI modeling updated. The average carbon intensity requirements for years 2016 to 2020 reflect reductions from revised base year (2010) CI values for ULSD (102.01).

(d) *Carbon Intensity Requirements for an Alternative Fuel Other Than a Biomass-Based Diesel Fuel Intended for Use in a Single-Fuel Vehicle.*

(1) A regulated party must use the average carbon intensity value for gasoline set forth in section 95484(b) for its alternative fuel, other than biomass-based diesel fuel, if the alternative fuel is used or intended to be used in any single-fuel light- or medium-duty vehicle.

(2) A regulated party must use the average carbon intensity value for diesel fuel set forth in section 95484(c) for its alternative fuel, other than biomass-based diesel fuel, that is used or intended to be used in any single-fuel application not identified in section 95484(d)(1).

(e) *Carbon Intensity Requirements for Biomass-Based Diesel Fuel Provided for Use in a Single-Fuel Vehicle.* A regulated party must use the average carbon intensity value for diesel fuel set forth in section 95484(c) if its biomass-based diesel fuel is used or intended to be used in any single-fuel:

(1) light-, medium-, or heavy-duty vehicle;

(2) off-road transportation application;

(3) off-road equipment application;

(4) locomotive or commercial harbor craft application; or

(5) non-stationary source application not otherwise specified in subsections (1) through (4) above.

(f) *Carbon Intensity Requirements for Transportation Fuels Intended for Use in Multi-Fuel Vehicles.*

(1) For an alternative fuel provided for use in a multi-fueled vehicle, a regulated party must use:

(A) the average carbon intensity value for gasoline set forth in section 95484(b) if one of the fuels used in the multi-fuel vehicle is gasoline; or

(B) the average carbon intensity value for diesel fuel set forth in section 95484(c) if one of the fuels used in the multi-fuel vehicle is diesel fuel.

(2) For an alternative fuel provided for use in a multi-fueled vehicle (including a bi-fuel vehicle) that does not use gasoline or diesel fuel, a regulated party must use:

(A) the average carbon intensity value for gasoline set forth in section 95484(b) if that alternative fuel is used or intended to be used in a light- or medium-duty vehicle.

(B) the average carbon intensity value for diesel set forth in section 95484(c) if that alternative fuel is used or intended to be used in an application not identified in section 95484(f)(2)(A).

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, ~~43000.5, 43013~~ and 43018 Health and Safety Code; 42 U.S.C. section 7545, 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, 39515, 39516, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516 and 43000, Health and Safety Code; Section 25000.5, Public Resources Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

§ 95485. Demonstrating Compliance.

(a) *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 that is equal to its compliance obligation.

(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 1st through December 31st 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:

$$ComplianceObligation = Deficits^{Generated} + Deficits^{CarriedOver}$$

$$CreditBalance = \left(Credits^{Gen} + Credits^{Acquired} + Credits^{CarriedOver}\right) - \left(Credits^{Retired} + Credits^{Sold} + Credits^{OnHold} + Credits^{Exported}\right)$$

where:

$Deficits^{Generated}$ are the ~~total~~ deficits generated pursuant to sections 95486 and 95489 ~~for~~in the current compliance period;

$Deficits^{CarriedOver}$ are the deficits carried over from the previous compliance period and not deferred pursuant to section 95485(c);

$Credits^{Gen}$ are the ~~total~~ credits generated pursuant to ~~-~~sections 95486 and 95489 in the current compliance period;

$Credits^{Aquired}$ are the ~~total~~ credits purchased or otherwise acquired in the current compliance period, including carry back credits acquired pursuant to section 95486;

$Credits^{CarriedOver}$ are the credits carried over from the previous compliance period;

$Credits^{Retired}$ are the ~~total~~ credits retired within the LCFS in the current compliance period;

$Credits^{Sold}$ are the ~~total~~ credits sold or otherwise transferred in the current compliance period; and

$Credits^{OnHold}$ are the credits placed on hold due to enforcement/administrative action. While on hold these credits cannot be used for meeting an annual compliance obligation.

$Credits^{Exported}$ are the ~~total~~ credits exported to programs outside the LCFS in the current compliance period.

(c) *Credit Clearance Market.*

(1) If a regulated party does not~~cannot~~ retire sufficient credits to meet its year-end compliance obligation under section 95485(a), that party must purchase its pro-rata share of credits in the Credit Clearance Market if one occurs.

(A) *Definition of Ongoing LCFS Credit Market.* The Ongoing LCFS credit market is defined as the routine LCFS market that operates throughout the year in which regulated parties and credit generators exchange LCFS credits. It is not the Credit Clearance Market.

(B) *If the Credit Clearance Market ~~O~~occurs*, a regulated party that fails to comply with section 95485(a) is nevertheless in compliance if the party:

1. Acquires its Pro-Rata Obligation in the Credit Clearance Market and retires that number of credits by July 31st of the year subsequent to the compliance year in question; and

2. Retires the remaining balance of its annual obligation, with interest, within five years.

(C) *If no Credit Clearance Market occurs*, the Executive Officer will record any party's unmet compliance obligation in that party's Accumulated Deficits account, and the regulated party will be deemed in compliance for that year, provided that it retires that Accumulated Deficit balance, with interest, within five years.

(2) *Acquisition of "Clearance Market" Credits to Meet an Annual Compliance Obligation.*

(A) *Clearance Market Period*. From June 1st to July 31st, a~~A~~ regulated party subject to section 95485(c)(1) must acquire credits pledged into the Credit Clearance Market~~ during June or July of the year subsequent to the compliance year in question,~~ to be retired toward compliance in the previous compliance year. Credits acquired for this purpose are defined as "Clearance Market" credits.

(B) *Use of Clearance Market Credits.* A Clearance Market credit can only be used for the purpose of meeting the regulated party's compliance obligation from an immediate prior year.

(C) *Applicability.* To qualify for compliance via the Credit Clearance Market, the regulated party must meet both of the following conditions:

1. The regulated party must have~~first~~ retired for compliance all of the credits ~~currently~~ in its possession; and

2. The regulated party must have unmet compliance obligations for the prior year, as reported to the Executive Officer on the Annual Compliance Report.

(3) *Procedure for Selling in the Clearance Market.*

(A) *Call for Credits*. On the first Monday in April, the Executive Officer shall issue to all regulated parties and credit generators a call for credits to be pledged for sale in the Clearance Market. When calling for credits, the Executive Officer will inform regulated parties of that year's Maximum Price for Credits (i.e., $200 plus inflation).

(B) Regulated parties and credit generators pledging credits for sale into the Clearance Market must report to the Executive Officer in the Annual Compliance Report (on or before April 30th) the quantity of any credits they are pledging for sale.

(C) *Calculation of the Maximum Price for Credits in the Clearance Market.* The maximum price for credits acquired, purchased or transferred via the Credit Clearance Market shall be set by the following formula:

1. $200/credit ($MTCO_2e$) in 2016.

2. This price shall be adjusted in subsequent years by a Consumer Price Index deflator in all years subsequent to 2016 to keep pace with inflation and remain at a constant price, in real terms.

3. The CPI deflator shall be the rate of inflation as measured by the most recently available twelve months of the Consumer Price Index for All Urban Consumers.

(D) *Eligibility to Sell.* Only regulated parties and credit generators that demonstrated compliance pursuant to section 95485(a) for the prior year can pledge credits for sale into the Clearance Market. Regulated parties that have an Accumulated Deficit obligation cannot pledge credits for sale into the Clearance Market.

(E) *Selling in the Clearance Market*. By pledging credits for sale in the Clearance Market, regulated parties and credit generators agree to the following provisions:

1. Regulated parties and credit generators pledging credits agree to withhold those credits from sale in the ongoing LCFS credit market until the Executive Officer determines whether a Clearance Market will occur and, if a Clearance Market will occur, until August 1st.

2. The Executive Officer will announce whether a Clearance Market will occur by May 15th of each year.

3. If the Executive Officer announces that a Clearance Market will not be held that year, regulated parties who have pledged credits to the Clearance Market ~~may~~shall be released from their agreement to withhold those credits from sale in the ongoing LCFS credit market.

4. If a Clearance Market does occur, regulated parties agree to sell or transfer credits at or below the Maximum Price for the pertinent year, until the Clearance Market closes on July 31st.

5. Regulated parties that have pledged credits to sell into the Clearance Market cannot reject an offer to purchase pledged credits at the Maximum Price, provided they have not sold or contractually agreed to sell those pledged credits.

(4) *Clearance Market Operation*. The Executive Officer will inform each regulated party that failed to meet the Annual Compliance obligation under section 95485(a) of its pro-rata share of credits available into the Clearance Market by June 1st.

(A) *Calculation of pro-rata shares.* Each regulated party's pro-rata share of credits available in the Clearance Market will be calculated by the following formula:

Regulated Party A's pro-rata share =

$$\left[\frac{(A's\ deficit)}{(total\ deficits)}\right] \times \lceil lesser\ of: (pledged\ credits)\ or\ (total\ deficits)\rceil$$

where:

"deficit" refers to one regulated party's obligation for the compliance year that has not been met pursuant to section 95485(a);

"$total\ deficits$" refers to the sum of all regulated parties' obligations for the compliance year that have not been met pursuant to section 95485(a); and

"$pledged\ credits$" means the sum of all credits pledged pursuant to section 95485(c)(3).

(B) *Publishing a list of parties participating in the Clearance Market*. On or before June 1st, the Executive Officer will post the following information on the LCFS web site:

1. The name of each party that did not meet the requirement of section 95485(a) and the number of credits that each party is obligated to acquire as their pro rata share; and

2. the name of each party that has pledged to provide credits for sale in the credit clearance market and the number of credits that each party has agreed to provide.

(C) *Clearance Market Operation Period.* If the Executive Officer has determined the Clearance Market will occur, the Clearance Market will operate from June 1st through July 31st.

(D) *Submission of Amended Annual Compliance Reports*. Regulated Parties that purchased credits in the Clearance Market must submit to the Executive Officer an Amended Annual Compliance Report by August 31st that accounts for the acquisition and retirement of their pro-rata share of Clearance Market credits, and for all deficits carried over as Accumulated Deficits.

(E) *Accumulated Deficits.* If, after purchasing its pro-rata share of credits and retiring those credits, a Regulated Party retains an unmet compliance obligation, the Executive Officer shall record remaining unmet deficits from that compliance year in an Accumulated Deficit account for that regulated party.

(5) *Rules Governing Accumulated Deficits.*

(A) *Compound Interest on Accumulated Deficits*. Regulated Parties with an Accumulated Deficit will be charged interest to be applied annually to all deficits in a regulated party's Accumulated Deficit account. Interest will be applied in terms of additional deficits that must be retired pursuant to section 95485(c)(1)(B), above, at a rate of 5 percent annually, applied on each May 1st~~January 1st, 366 days after the pertinent compliance year ended~~.

(B) *Repayment of Accumulated Deficits.* Regulated Parties that participate in the Clearance Market in order to meet their compliance obligations must repay all unmet deficits, plus interest no later than five years from the end of the compliance period in which any such deficit was incurred.

(C) *Restrictions on the Repayment of Accumulated Deficits.* Regulated Parties may repay unmet deficits as part of a subsequent annual report. However, no repayment of any accumulated deficits is

allowed unless the regulated party meets 100 percent of its current compliance obligation.

(D) *Prohibitions of Credit Transfers.* Regulated parties that have an Accumulated Deficit obligation cannot transfer or sell credits to another regulated party.

(d) *Limitations on the Use of Credits produced pursuant to sections* 95489*(f) and (g) (Related to Credits for the Refinery Investment Credit and the Renewable Hydrogen Refinery Credit).*

(1) A regulated party may use credits created pursuant to section 95489(f) to meet no more than 20 percent of its annual obligation.

(2) A regulated party may use credits created pursuant to section **~~95849~~95489**(g) to meet no more than 10 percent of its annual obligation.

(3) Use of credits created pursuant to sections 95489(f) and (g) to retire deficits incurred pursuant to section 95489(c) shall not count against the limitations established in sections 95485(d)(1) and (2).

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, ~~43000.5, 43013~~ and 43018 Health and Safety Code; 42 U.S.C. section 7545, 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, 39515, 39516, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, and 43000, Health and Safety Code; Section 25000.5, Public Resources Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

§ 95486. Generating and Calculating Credits and Deficits.

(a) *Generation and Acquisition of Transferrable Credits.*

(1) Upon submission and acceptance of a timely 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 or credit generator. Once banked, credits may be retained indefinitely, retired to meet a compliance obligation, or transferred to other regulated parties or credit generators.

(2) *No Retroactive Credit Generation.* Unless expressly provided elsewhere in this subarticle, no credits may be generated or claimed based on section 95489 provisions, supplying electricity for transportation, or any transaction or activity regarding a transportation fuel for any act occurring in a quarter for which the quarterly reporting deadline has passed. Notwithstanding this section, the Executive Officer may **remove a credit's**

provisional status~~ **convert provisional credits to fully transferrable credits**~~ at any time, pursuant to section 95488 (d) and (e). Where an application or demonstration pursuant to sections 95488 or 95489 has been completed but not yet approved, the applicant may report **transactions in**~~**, and**~~ the LRT-CBTS~~ **will reflect, information supporting provisional credits/deficits**~~. ~~***Such provisional credits may not be used for any purpose until fully recognized.***~~ When the Executive Officer approves the section 95488 or 95489 application or demonstration, the Executive Officer will recognize any ~~**such provisional**~~ credits generated during the quarter in which the approval takes place, and one previous quarter, provided that the application was complete during that previous quarter.

(3) 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 or his designee, and credits may be reversed or adjusted as necessary pursuant to section 95495.

(4) *Acquisition of "Carryback" Credits to Meet Obligation.*

(A) *Extended Credit Acquisition Period*. A regulated party may acquire, via purchase or transfer, additional credits between January 1st and March 31st ("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 "carryback" credits. All carryback credit transfers must be initiated in the LRT-CBTS by March 31st and completed by ~~April 15th~~ the buyer within 10 days as specified in section 95487(c)(1)(C)1. in order to be valid for meeting the compliance obligation of the year immediately prior.

(B) *Use of Carryback Credits*. A carryback 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;~~.~~

3. A regulated party electing to use carryback credits must identify the number and source of credits it desires to use as carryback credits in its annual compliance report submitted to the Executive Officer no later than April 30th of the year in which the additional credits were obtained; and~~.~~

4. A regulated party electing to use carryback credits must:

a. acquire and retire a sufficient amount of carryback and other credits to meet 100 percent of its compliance obligation in the prior compliance year, or

b. minimize its compliance shortfall by retiring all credits in its possession at the end of the previous compliance year, as well as all credits purchased during the extended period that are eligible to be used as carry back credits.

(b) *Calculation of Credits and Deficits Generated.* The amount of credits and deficits generated in a compliance period for an LCFS fuel will be calculated within the LRT-CBTS using the methods specified in sections 95486 and 95489. The total credits and deficits generated are used in determining the overall credit balance for a compliance period, pursuant to section 95485. 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 3, must be converted to MJ in the LRT-CBTS by multiplying by the corresponding energy density[2]:

Table 3. Energy Densities of LCFS Fuels and Blendstocks.

Fuel (units)	***Energy Density***
CARBOB (gal)	119.53 (MJ/gal)
CaRFG (gal)	115.83 (MJ/gal)
Diesel fuel (gal)	134.47 (MJ/gal)
Pure Methane (ft^3)	1.02 (MJ/ft^3)
Natural Gas (ft^3)~~CNG (scf)~~	1.04 (MJ/ft^3)~~0.98 (MJ/scf)~~
LNG (gal)	78.83 (MJ/gal)
Electricity (KWh)	3.60 (MJ/KWh)

[2] Energy density factors are based on the lower heating values of fuels in CA-GREET 2.0 using BTU to MJ conversion of 1055 J/Btu.

Hydrogen (kg)	120.00 (MJ/kg)
Undenatured Anhydrous Ethanol	80.53 (MJ/gal)
Denatured Ethanol (gal)	81.51 (MJ/gal)
FAME Biodiesel (gal)	126.13 (MJ/gal)
Renewable Diesel (gal)	129.65 (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:

$Credits^{Gen}$ 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 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) $Credits_i^{XD}/Deficits_i^{XD}(MT) = \left(CI_{standard}^{XD} - CI_{reported}^{XD}\right) \times E_{displaced}^{XD} \times C$

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”);

$CI_{standard}^{XD}$ is the average carbon intensity requirement of either gasoline (XD = “gasoline”) or diesel fuel (XD = “diesel”) for a given year as provided in sections 95484(b) and (c), respectively;

$CI_{reported}^{XD}$ is the adjusted carbon intensity value of a fuel or blendstock, in gCO_2e/MJ, calculated pursuant to section 95486(b)(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 95486(b)(3)(C); and

C is a factor used to convert credits to units of metric tons from gCO_2e 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 gCO_2e/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 4. For a vehicle-fuel combination not listed in Table 4, $EER^{XD} = 1$ 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 3, except as noted in section 95486(b)(3)(D).

(D) For Fixed Guideway Systems and Forklifts:

$$E_{displaced}^{XD} = E_i$$

where:

E_i is the energy of the fuel used to propel fixed guideway systems electric and hydrogen fuel cell forklifts. For fixed guideway system expansion beyond 2010, the formula for displaced energy in section 95486(b)(3)(C) may be used with Executive Officer approval.

Table 4. 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)	0.9
		CNG or LNG (Compression-Ignition Engines)	1.0
Electricity/BEV, or PHEV	3.4	Electricity/BEV, or PHEV* Truck	2.7
		Electricity/BEV or PHEV* Bus	4.2
		Electricity/Fixed Guideway, Heavy Rail	4.6
		Electricity/Fixed Guideway, Light Rail	3.3
		Electricity/Trolley Bus, Cable Car, Street Car	3.1
		Electricity Forklifts	3.8
H2/FCV	2.5	H2/FCV	1.9
		H2 Fuel Cell Forklifts	2.1

*BEV = battery electric vehicle, PHEV= plug-in hybrid electric vehicle, FCV = fuel cell vehicle, ICEV = internal combustion engine vehicle.

(c) *Credit Generation Frequency.* Beginning 2011 and every year afterwards, a regulated party may generate credits quarterly after ~~data are reconciled with its business partner.~~ the quarterly report has been submitted in the LRT. Regulated parties shall reconcile their data with their business partners before submission.

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, ~~43000.5, 43013~~ and 43018 Health and Safety Code; 42 U.S.C. section 7545, 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, 39515, 39516, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516 and 43000, Health and Safety Code; Section 25000.5, Public Resources Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

§ 95487. Credit Transactions.

(a) *General.* LCFS credits shall not constitute instruments, securities, or any other form of property.

(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 hold, purchase, sell, or trade LCFS credits, except as otherwise specified in subsection (C), below; and

(C) export credits for compliance with other greenhouse gas reduction initiatives including 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 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 95482(d) or are otherwise not one of the transportation fuels specified in section 95482(a).

(b) *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 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) For a regulated party that has not retired sufficient credits to meet 100 percent of its compliance obligation at the end of a compliance year, the LRT-CBTS will calculate the ratio of all credits retired to the deficits for the annual compliance period as specified in section 95485(a).~~

(2) *Credit Retirement Hierarchy.* The process developed in the LRT-CBTS to retire credits for purposes of meeting a compliance obligation will use the following default hierarchy:

(A) Credits acquired during the extended credit carryback purchase period of January 1st to March 31st following the prior compliance period and designated for carryback will be retired first;

(B) Credits acquired during a previous compliance period (in order of earliest completed transfer "recording date" first) will be retired next;

(C) Credits generated in a previous compliance year (in order of the earliest quarter first in which the credits were generated) will be retired last.

(c) *Credit Transfers between Parties.*

(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. Any such agreement must be fully documented in the LRT-CBTS pursuant to section 95487(c)(1)(B) and (C)~~ within a total of 20 business days~~.

(A) General *Requirements for Credit Transfers.* 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:

$$Total\ Credits = Credits^{Gen} + Credits^{Aquired} -$$

$$Sum\ of\,(Credits^{Retired} + Credits^{OnHold} + Credits^{Sold} + Credits^{Exported})$$

where:

$Credits^{Gen}$, $Credits^{Aquired}$, $Credits^{Retired}$, $Credits^{OnHold}$, $Credits^{Sold}$, and $Credits^{Exported}$ have the same meaning as those in section 95485(b).

(B) *Credit Seller Requirements.* When a credit transfer agreement has been reached, within 10 business days the Seller must initiate the documentation by completing and posting for the Buyer's review an online Credit Transfer Form (CTF) provided in the LRT-CBTS. The CTF shall contain the following fields:

1. The date on which the Buyer and Seller reached agreement;

2. Names of the Seller and Buyer Companies as registered in the LRT-CBTS;

3. The Federal Employer Identification Numbers (FEIN) of the Seller and Buyer Companies as registered in the LRT-CBTS;

4. First and Last Name of the person who performed the transaction on behalf of the Seller Company;

5. Contact information of the person who performed the transaction on behalf of the Seller Company;

6. First ~~n~~Name and Last Name of the person who performed the transaction on behalf of the Buyer Company;

7. Contact information of the person who performed the transaction on behalf of the Buyer Company;

8. The number of credits proposed to be transferred and any credit identification numbers assigned to the credits by the Executive Officer; and

9. The price or equivalent value of the consideration (in U.S. dollars) to be paid per credit proposed for transfer, excluding any fees.

~~Except as provided in section 95487(d) below, the Executive Officer will treat information submitted in the online Credit Transfer Forms as Confidential Business Information.~~

(C) *Credit Buyer Requirements.*

1. *Confirmation of Agreement for Credit Transfer.* Within 10 days of receiving the CTF from the Seller, the Buyer must confirm the accuracy of the information therein by signing and dating the CTF. The LRT-CBTS will capture the electronic signatures from the Seller and Buyer in the CTF and archive the completed CTF. If the Buyer and Seller have not fulfilled the requirements of this subsection 95487(c) within 20 days of reaching an agreement, the Executive Officer will deem the transaction void.

2. *Reporting to the Executive Officer.* The Buyer shall submit the Credit Transfer Form with all of the required information to the Executive Officer in the LRT-CBTS.

(D) *Recording 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 transfer. Within five business days of receiving a fully-completed CTF, the Executive Officer shall, either:

1. Process and approve the transfer request and update the account balances of the Seller and Buyer to reflect the proposed transfer, 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

2. Notify the parties that the proposed credit transfer is infeasible and identify the reasons for rejecting the transfer.

(2) *Facilitation of Credit Transfer.* A Seller or Buyer may elect to use a third-party broker as defined in section 95481 to facilitate the transfer of credits. A broker cannot own credits. A broker who will document transfers in LRT-CBTS must register in the LRT-CBTS, and the buyer, seller, or both must document, using the LRT-CBTS, authorization for broker to act on their behalf. A broker may, with the consent of the parties, conduct a "blind transaction" where the Buyer of the credit does not know the identity of the Seller, and/or the Seller of the credit does not know the identity of the Buyer. The broker may include, but is not limited to, a credit transfer service agency or broker who assists in arranging the transfer of credits.

(3) *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) *Public Disclosure of Credit and Deficit Balances and Credit Transfer Information.*

(1) The Executive Officer shall, 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 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, 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.

(e) *Prohibited Transactions.* A trade involving, related to, or associated with any of the following are prohibited:

(1) Any manipulative or deceptive device;

(2) A corner or an attempt to corner the market for ~~a~~ credits;

(3) Fraud, or an attempt to defraud any other entity;

(4) A false, misleading or inaccurate report concerning information or conditions that affects or tends to affect the price of a credit;

(5) An application, report, statement, or document required to be filed pursuant to this article which is false or misleading with respect to a material fact, or which omits to state a material fact necessary to make the contents therein not misleading. A fact is material if it is reasonably likely to influence a decision by a counterparty, the Executive Officer, the Board, or the Board's staff; or

(6) Any trick, scheme, or artifice to falsify or conceal a material fact, including use of any false statements or representations, written or oral, or documents made by or provided to an entity through which transactions in credits are settled, or are cleared~~; or~~.

~~(7) A fact is material if it is reasonably likely to influence a decision by a counterparty, the Executive Officer, the Board, or the Board's staff.~~

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, ~~43000.5, 43013~~ and 43018 Health and Safety Code; 42 U.S.C. section 7545, 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, 39515, 39516, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516 and 43000, Health and Safety Code; Section 25000.5, Public Resources Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

§ 95488. Obtaining and Using Fuel Pathways.

(a) *Applicability*. The requirements set forth in this section shall apply to Regulated Parties and other entities that obtained fuel pathway certifications or registrations under the provisions of the previous LCFS regulation order, and to Regulated Parties and other entities that are seeking fuel pathway certifications under the provisions set forth in section 95488(c) of this regulation order. **Except as provided in section 95488(a)(1) below, any fuel pathway certification that was approved under the former LCFS and any use of a fuel pathway by a fuel producer who registered under the former LCFS is automatically**

deactivated on the effective date of this subarticle. All fuel providers that initiate the process of securing a LCFS fuel pathway, as set forth in section 95488(c) of this regulation order on or after the effective date of this regulation order shall be bound by the provisions of this regulation order. Subsections (1) ***and****~~through~~* (2~~3~~), below, apply to entities that had obtained Method 1 registrations, or obtained or applied for fuel pathway certifications prior to the effective date of this regulation order.

(1) A fuel pathway certification or a registered fuel provider's use of a fuel pathway that is described in subsections (A)~~,~~ ***or*** (B)~~, or (C)~~ and was in effect on December 31, 2015, may remain valid for as long as one year after the effective date of this subsection, and shall then be automatically deactivated. The Executive Officer may revoke or modify the fuel pathway certification or a registered fuel producer's use of the pathway during the year after the effective date if the producer fails to follow operational conditions or reporting requirements in the pathway approval or under former section 95486(f). Fuel producers may apply for new certifications as set forth in section 95488(c) to replace pathway certifications that will be deactivated **or request recertification of legacy pathways as set forth in section 95488(a)(2) below**. The following pathway certifications and registered fuel producer use of pathways are eligible for the deactivation schedule in this subsection:

(A) Fuel pathways that were registered under the voluntary Biofuel Producer Registration system prior to **the effective date of this regulation order** ~~**December 1, 2014**~~. This provision applies to pathways obtained under the Method 1 provisions of the former LCFS (former sections 95486(a) and (b)), or the Method 2 provisions of the former LCFS (former section 95486(f)), and then subsequently registered under the voluntary Biofuel Producer Registration system.

(B) Fuel pathways that were certified under the Method 2 provisions of the former LCFS (former section 95486(f)) prior to **the effective date of this regulation order** ~~**December 1, 2014**~~.

~~***(C) Fuel pathways that were certified under the Method 2 provisions of the former LCFS (former section 95486(f)) prior to the effective date of this regulation order*** **on or after December 1, 2014 based on an application submitted to ARB on or after April 1, 2014 and before December 1, 2014**~~.

(2) ***Recertification of legacy pathways.*** ~~**Except as provided in section 95488(a)(1), any fuel pathway certification that was approved under the former LCFS and any use of a fuel pathway by a fuel producer who registered under the former LCFS is automatically deactivated on the**~~

~~effective date of this subarticle.~~ Fuel providers may apply for ~~new~~ **re**certification~~s~~ as set forth **below**~~in section 95488(c)~~ to replace pathway certifications **subject to being**~~that are~~ deactivated.

(A) Applicants seeking to recertify a legacy pathway shall begin the application process by completing the online account registration process and submitting an electronic New Pathway Request Form prior to February 1, 2016, indicating that they are seeking recertification of a legacy pathway.

(B) Recertifications will be processed by the Executive Officer using information previously supplied to the Executive Officer under the provisions of the former LCFS regulation order, provided such information was complete pursuant to the former LCFS regulation's requirements. The requirements of subsections 95488(c)(3)-(5) and subsection 95488(e) are not applicable to recertifications, unless the Executive Officer specifically requests such information from an applicant.

(C) The Executive Officer will determine the classification of each recertification under the tier structure described in subsection 95488(b).

(D) The result of the Executive Officer's decisions on recertifications shall be final and not subject to further appeal. Denied applicants may submit New Pathway Request Forms pursuant to section 95488.

(3) *"Batch" processing in 2016*. Applications to recertify fuel pathway certifications, registrations that were approved under the previous LCFS (and still in effect on the date this regulation goes into effect) and new applications for fuel pathways in 2016 will, to the extent feasible, be processed in groups based on fuel type in the following order of priority: ethanol, biodiesel, renewable diesel, compressed natural gas, liquefied natural gas, and all others.

(b) *Primary Alternative Fuel Pathway Classifications.* For purposes of fuel pathway carbon intensity determination, proposed LCFS fuel pathways shall fall into one of two tiers, as described below.

(1) *Tier 1*. Conventionally-produced alternative fuels of a type that has been in full commercial production, excluding start-up or ramp-up phase, for at least three years, and for which certified LCFS pathways have existed for at least three years shall be classified into Tier 1. The term "conventionally produced" means that the fuel was produced using grid

electricity, natural gas, and/or coal for process energy; and production processes that do not include the innovative methods described in subsection 95488(b)(2)(F). Tier 1 includes, but is not limited to, the following conventionally-produced fuels:

(A) Starch- and sugar-based ethanol;

(B) Biodiesel produced from conventional feedstocks (including but not limited to plant oils, tallow and related animal wastes, and used cooking oil);

(C) Renewable Diesel produced from conventional feedstocks (including but not limited to plant oils, tallow and related animal wastes, and used cooking oil);

(D) Natural Gas; and

(E) Biomethane from landfill gas.

(2) *Tier 2*. The Tier 2 classification includes all fuels not included in Tier 1. Tier 2 fuels include, but are not limited to:

(A) Cellulosic alcohols;

(B) Biomethane from sources other than landfill gas;

(C) Hydrogen;

(D) Electricity, whether from the public grid or from dedicated, low-CI sources;

(E) Drop-in fuels (renewable hydrocarbons) except for renewable diesel produced from conventional feedstocks (including but not limited to plant oils, tallow and related animal wastes, and used cooking oil); and

(F) Tier 1 fuels produced using one or more innovative production methods. Innovative production methods include, but are not limited to:

1. Use of one or more low-CI process energy sources. In order to qualify as an innovative, low-CI process energy source, energy from that source must be directly consumed in the production process. No indirect accounting mechanisms, such as the use of renewable energy certificates, can be used to reduce an energy source's CI. Innovative, low-CI

energy sources include, but are not limited to renewable electricity from a dedicated (non-grid) form of generation, such as wind turbines and photovoltaic arrays.

2. Use of unconventional feedstocks such as algae oil;

3. Carbon capture and sequestration; and

4. Production process innovations that improve production efficiency such that resulting CI is at least 20 percent lower due to the process innovation.

(3) For both Tier 1 and Tier 2 classifications, the following specific information needs to be provided for any fuel pathway carbon intensity determination:

(A) Fuel Type (renewable diesel, ethanol, etc.);

(B) Direct carbon intensity;

(C) An indirect land use change modifier (appropriate iLUC value from Table 5) or other indirect carbon intensity (if applicable); and

(D) Total pathway carbon intensity calculated as a sum from subsections 95488(b)(3)(B) and (C), above.

(c) *Specific Requirements and Procedures.* Any person may apply to the Executive Officer for the establishment of a transportation fuel pathway under the LCFS.

(1) Applicants seeking to obtain a CI under either the Tier 1 or Tier 2 provisions of this regulation order shall begin the application process by completing the online account approval process and completing the electronic New Pathway Request Form, available through the LRT-CBTS web portal (http://www.arb.ca.gov/lcfsrt) ~~(http://www.arb.ca.gov/fuels/lcfs/reportingtool/reportingtool.htm)~~. The New Pathway Request Form contains the following fields. All that apply are required.

(A) Production ~~C~~company name and full mailing address.

(B) USEPA Company ID for fuels covered by the U.S. Environmental Protection Agency's RFS2 program. For fuels not covered by the RFS2 program, the LRT-CBTS system will generate a Company ID.

(C~~B~~) Company contact person's contact information.

1. Name

2. Title or position
3. Phone number
4. Mobile phone number
5. Facsimile number
6. Email address
7. Web site URL

(D~~C~~) Facility name (or names, if more than one facility is covered by the proposed pathways).

(E~~D~~) Facility address (or addresses, if more than one facility is covered by the proposed pathways).

(F~~E~~) USEPA Facility ID for fuels covered by the U.S. Environmental Protection Agency's RFS2 program. For fuels not covered by the RFS2 program, the LRT-CBTS system will generate a Facility ID.

(G~~F~~) Facility geographical coordinates (for each facility covered by the proposed pathways). Coordinates can be reported using either the latitude and longitude or the Universal Transverse Mercator coordinate systems.

(H~~G~~) Facility contact person's contact information.

1. Name
2. Title or position
3. Phone number
4. Mobile phone number
5. Facsimile number
6. Email address

(I~~H~~) Facility nameplate production capacity in million gallons per year. This information is required for each facility covered by the proposed pathways.

(J~~I~~) Consultant's contact information

1. Name
2. Title or position
3. Legal company name
4. Phone number
5. Mobile phone number
6. Facsimile number
7. Email address
8. Web site URL

(K~~J~~) *Pathway Tier (Tier 1 or 2)*. The applicant must declare whether the proposed fuel pathway falls under the Tier1 or Tier 2 provisions of this regulation. Once the New Pathway Request Form has been submitted, The Executive Officer will evaluate the applicant's Tier declaration and either approve or reverse it. The Executive Officer will notify the applicant in writing of the results of the evaluation process. The Executive Officer's decision shall be final and not subject to further appeal.

(L~~K~~) *Tier 2 Pathway Type*. Tier 2 applicants may seek a pathway under the Tier 2 Lookup Table, Method 2A, or Method 2B provisions of this regulation. Applicants must declare whether they are seeking a Method 2A, Method 2B, or Tier 2 Lookup Table pathway. Applicants seeking Tier 2 Lookup Table pathways must report the Fuel Pathway Code of the Tier 2 Lookup Table pathway for which they are applying. The Tier 2 Lookup Table, and Methods 2A and 2B are not available to Tier 1 applicants.

(M~~L~~) *Reference Pathway Information*. Tier 2, Method 2A applicants must specify the reference pathway (or pathways, if applicable) for their proposed pathways. Method 2A pathways must improve upon the reference pathway CI by an amount specified in the substantiality requirements in subsection (c)(4)(G)2. For purposes of this regulation, a reference pathway is defined as:

~~1. T~~the pathway from the Tier 2 Lookup Table~~s~~ (Table~~s 5 and~~ 6 in section 95488(c)(4)(F)) to which the proposed Method 2A pathway most closely corresponds, as specified in section 95488(c)(4)(C)., or

~~2. A~~a Method 2 pathway for which the applicant previously obtained certification, as set forth in section 95488(c)(4)(G).

The following reference pathway information must be supplied. ~~Reference pathways are defined at section 95488(c)(1)(L).~~

1. Fuel ~~p~~Pathway ~~Identification c~~Code;
2. Fuel Type (renewable diesel, ethanol, etc.);
3. Direct carbon intensity;
4. Indirect ~~L~~land use change or other indirect carbon intensity (Table 5); and
5. Total pathway carbon intensity.

(N~~M~~) For Tier 2 Lookup Table applications, the Tier 2 Lookup Table pathway for which the applicant is applying must be identified using the following information:

1. Fuel ~~p~~Pathway ~~Identification c~~Code;
2. Fuel Type (renewable diesel, ethanol, etc.);
3. Direct carbon intensity;
4. Indirect ~~L~~land use change or other indirect carbon intensity (Table 5); and
5. Total pathway carbon intensity;

(O~~N~~) The following information about the proposed Method 2A or 2B pathway (or pathways) must be provided:

1. Feedstock
2. Direct CI
3. Indirect ~~L~~land use or other indirect CI
4. Total CI
5. Brief pathway description
6. Annual quantity of fuel produced under proposed pathway. If the fuel is a gasoline substitute, quantities shall be reported in units of gasoline-gallon equivalents; if the fuel is a diesel substitute, quantities shall be reported in units of diesel-gallon equivalents.
7. If the plant is not currently operating at full production capacity, the date on which it is expected to reach full production capacity.
8. Will the full production volume be met by a single or multiple facilities?
9. If the full production volume will be met by multiple facilities will all facilities be owned by the same company?
10. Lower heating value (LHV) of the fuel to be produced.
11. Range of production volumes over which the proposed CI(s) are valid.

(2) Once a New Pathway Request Form has been submitted, a record for the proposed fuel pathway will be created in the LRT-CBTS system. That record will be placed into pending status, and will not be available for compliance reporting purposes until the applicant or other interested party submits, via the LRT-CBTS web portal, all information required under sections 95488(c)(3) or (4), and the Executive Officer certifies the proposed pathway. Required for all applications under both sections is a LCFS Fuel Producer ~~Legal Responsibility~~Attestation Letter. Once the proposed pathway has been certified and both an electronic and paper copy of the LCFS Fuel Producer ~~Legal Responsibility~~Attestation Letter have been received and approved by the Executive Officer, the LRT-CBTS record created upon submission of the New Pathway Request form will be activated. The LCFS Fuel Producer ~~Legal Responsibility~~ Attestation Letter shall attest to the veracity of the

information in the application packet and declare that the information submitted accurately represents the long-term, steady state operation of the fuel production process described in the application packet. It shall, in addition, make the following specific attestations:

(A) No products, co-products, by-products, or wastes undergo additional processing, such as drying, distillation, or clean-up, once they leave the production facility, except as explicitly included in the pathway life cycle analysis and pathway CI.

(B) The fuel that will be reported under the newly certified pathway will conform to the fuel pathway described in the Tier 1 or Tier 2 application in all areas, including, but not limited to the following:

1. Feedstocks used to produce the fuel;
2. Fuel and feedstock production technology;
3. Regions in which feedstocks and finished fuel are produced;
4. Modes used to transport feedstocks and finished fuel and the transport distances involved;
5. Types and amounts of thermal and electrical energy consumed in both feedstock and finished fuel production;
6. Full life cycle carbon intensity, which must be no higher than the carbon intensity specified in the Tier 1 or Tier 2 application; and
7. Fuel production operations, which shall conform at all times with the fuel pathway described in the Tier 1 or Tier 2 application.

(C) The LCFS Fuel Producer ~~Legal Responsibility~~Attestation Letter shall:

1. Be the original copy. Photocopies, scanned electronic copies, facsimiles, and other non-original documents will not be accepted in lieu of a signed original. A scanned copy of the signed original shall also be submitted via upload to the LRT-CBTS portal.
2. Be on company letterhead.
3. Be signed in blue ink by an officer of the applicant with the legal authority to attest to the veracity of the information in the application and to sign on behalf of the applicant.
4. Be from the applicant and not from an entity representing the applicant (such as a consultant or legal counsel).
5. Include the following attestation:

I certify that the current fuel production process used to produce _____ (fuel) at the _____ facility is consistent in all of the following areas with all information submitted to ARB in connection with the pathway request: 1) feedstocks used in fuel production; 2) fuel and feedstock production technology;

3) geographic region in which feedstocks and finished fuel are produced; 4) transportation modes used to transport feedstocks and finished fuel and transport distances; 5) types and amounts of thermal and electrical energy consumed in both feedstock and finished fuel production; and 6) any other applicable fuel pathway standard or operating condition established by ARB. The carbon intensity (CI) of the fuel must be no higher than the CI for the certified FPC.

I understand that the following facility information will be posted on the LCFS website: Facility Name, Facility Address, Company ID, Facility ID, Fuel Pathway Code(s), CI values, Fuel Pathway Description(s), Physical Pathway Code(s) and Physical Pathway Description(s).

By submitting this form, _____(Fuel Production Company) accepts responsibility for the information herein provided to the ARB. I certify under penalty of perjury under the laws of the State of California that I have personally examined, and am familiar with, the statements and information submitted in this document. I certify that the statements and information submitted to ARB are true, accurate, and complete.

_____ _____ _____

Signature Print Name & Title Date

Table 5. Summary of iLUC Values

Biofuel	**iLUC (gCO_2/MJ)**
Corn Ethanol	19.8
Sugarcane Ethanol	11.8
Soy Biodiesel	29.1
Canola Biodiesel	14.5
Sorghum Ethanol	19.4
Palm Biodiesel	71.4

(3) *Tier 1 Pathways*.

(A) Once an applicant has submitted a New Pathway Request form, and been notified by the Executive Officer that the pathway described in the New Pathway Request Form falls under the Tier 1 provisions found at section 95488(b)(1), the applicant shall calculate its pathway carbon intensities using the CA-GREET 2.0 Tier 1 calculator (CA-GREET2.0-T1) found at http://www.arb.ca.gov/fuels/lcfs/lcfs.htm and submit the following information to the Executive Officer for processing and verification.

1. A CA-GREET2.0-T1 model with the Tier 1 calculator interface completed. The Tier 1 calculator interface requires the applicant to enter information including, but not limited to feedstock transport modes and distances, fuel production energy use, electrical generation energy mixes, and finished fuel transport modes and distances. All applicants using grid electricity must choose electrical generation energy mixes from among the 26 subregions in the ninth edition of the U.S. EPA's Emissions and Generation Resource Integrated Database (eGRID). CA-GREET2.0-T1 contains these eGRID subregional energy mixes.

2. Invoices and receipts for all forms of energy consumed in the fuel production process, all fuel sales, all feedstock purchases, and all co-products sold. Invoices shall be submitted in electronic form. Each set of invoices shall be accompanied by a 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 (the special information column need not be populated for every record). For each form of energy consumed, the two-year total and average consumption shall be reported in the spreadsheet. These two-year totals and averages shall be used to calculate the per-million-Btu and per-megajoule energy consumption inputs used to calculate the life cycle CI of the fuel pathway.

    a. *Period Covered.* The period covered shall be the most recent two-year period of relatively typical operation.

    b. *Production Processes Covered.* The invoices submitted under this provision shall cover the energy consumed in all unit operations devoted to feedstock handling and pre-processing; fuel production; co-product handling and processing; waste handling, processing, and treatment; the handling, processing and use of chemicals, enzymes, and organisms; the generation of process energy, including the generation, handling and processing of combustion fuels; and all plant monitoring and control systems. If the fuel produced or any by-products or co-products receive additional processing after they leave site,

such as additional distiller's grains drying or fuel distillation, invoices covering the energy consumed for those processes must also be submitted. If the fuel production facility is co-located with one or more unrelated facilities, and energy consumption invoices are not separately available for the fuel production process, the applicant shall obtain a third-party energy audit sufficient to establish the long-term, typical energy consumption patterns of the fuel production facility.

3. In lieu of receipts or invoices for **energy consumption,** fuel sales, feedstock purchases, or co-product sales, the applicant may seek Executive Officer approval to submit audit reports prepared by independent, third-party auditors that document **energy consumption,** fuel sales, feedstock purchases, or co-product sales.

4. *RFS2 Third Party Engineering Report.* A copy of the federal Renewable Fuel Standard 2 (RFS2) Third Party Engineering Review Report required pursuant to 40 CFR 80.1450, if available, is required.

5. A signed LCFS Fuel Producer ~~Legal Responsibility~~Attestation Letter, as set forth in section 95488(c)(2).

(B) Upon verifying the applicant's pathway carbon intensity, the Executive Officer will certify the application by posting it to the LCFS Fuel Pathway Certification web page (http://www.arb.ca.gov/fuels/lcfs/2a2b/2a-2b-apps.htm), and activate the inactive record created for the pathway upon submission of the New Pathway Request Form (as set forth in section 95488 (c)(2)). If the Executive Officer cannot verify the applicant's pathway carbon intensity, he or she will deny the pathway without prejudice, and notify the applicant in writing of that denial.

(4) *Tier 2 Pathways*. An applicant may apply for a Tier 2 pathway using either the Tier 2 Lookup Table or Method 2, as set forth in this section.

(A) All fuel pathways certified under Method 2 are available for inspection on the LCFS Fuel Pathway web page, which can be accessed at this address: http://www.arb.ca.gov/fuels/lcfs/2a2b/2a-2b-apps.htm.

(B) A regulated party for CARBOB, gasoline, or diesel fuel must use the Tier 2 Lookup Table~~s~~, as set forth in section 95488(c)(4)(C), to determine the carbon intensity of the CARBOB, gasoline, or diesel for which it is responsible.

(C) *Tier 2 Lookup Table Pathways*. The provisions set forth in this section apply exclusively to proposed LCFS fuel pathways that do not fall under the Tier 1 provisions found in section 95488(c)(3). An applicant may apply for a Tier 2 fuel pathway using the Tier 2 Lookup Table~~s~~ if the Tier 2 Lookup Table~~s~~ (Table~~s 5 and~~ 6 in section 95488(c)(4)(F)) contain fuel pathways that closely correspond to the regulated party's actual physical fuel production pathways. A regulated party's actual physical fuel production pathway corresponds closely with a Tier 2 Lookup Table pathway when it is consistent with the Tier 2 Lookup Table pathway in all the following areas:

1. Feedstocks used to produce the fuel.
2. Fuel and feedstock production technology.
3. Regions in which feedstocks and finished fuel are produced.
4. The modes used to transport feedstocks and finished fuel and the transport distances involved.
5. 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.).
6. The CI of the regulated party's product must be lower than or equal to the Tier 2 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 Tier 2 Lookup Table pathway CI, the regulated party shall prepare a Method 2A or 2B application for a pathway-specific CI.

(D) *Tier 2 Lookup Table Pathway Application Submission Requirements.*

1. *Energy Invoices*. The applicant shall submit Invoices, as set forth in section 95488(c)(3)(A)2.~~,~~, covering a period of no less than two years for all forms of energy consumed in the fuel production process.

2. *RFS2 Third Party Engineering Report*. A copy of the federal Renewable Fuel Standard 2 (RFS2) Third Party Engineering

Review Report required pursuant to 40 CFR 80.1450, if available, is required.

3. A signed LCFS Fuel Producer ~~Legal Responsibility~~Attestation Letter, as set forth in section 95488(c)(2).

(E) An applicant's choice of carbon intensity value from the Tier 2 Lookup Table is subject in all cases to Executive Officer approval, as specified in this section.

1. 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 pathway CI, the Executive Officer shall choose a carbon intensity value from the Tier 2 Lookup Table~~s~~ for the fuel, which the Executive Officer determines is the one that most closely corresponds to the pathway for that fuel.

2. If the Executive Officer has reason to believe that the Tier 2 Lookup Table~~s~~ do not contain a fuel pathway that closely corresponds with the regulated party's fuel pathway, as specified in subsection (4)(C), above, the regulated party will not be allowed to use the Tier 2 Lookup Table to obtain a LCFS fuel pathway.

(F) A carbon intensity value can be used under the provisions set forth in subsections (C) through (E) above only if it appears in one of the Tier 2 Lookup Table (Table 6). To generate the values appearing in Tables 6, the Executive **Officer** shall use

1. One of the following:

a. The Tier 1 California-modified GREET model, version 2.0 (CA-GREET2.0-T1, May 22, 2015), which is incorporated herein by reference,

b. The Tier 2 California-modified GREET model, version 2.0 (CA-GREET2.0 T2, May 22, 2015), which incorporated herein by reference, or

c. Another model determined by the Executive Officer to be equivalent or superior to CA-GREET 2.0, and

2. An indirect land-use change modifier from Table 5, when applicable.

~~(F) To generate carbon intensity values for use under the Tier 2 Lookup Table provisions set forth in subsection (C), above, the Executive Officer shall use either~~

~~1. Either the Tier 1 or Tier 2 California-modified GREET models, version 2.0 (CA-GREET2.0-T1 or CA-GREET2.0-T2, December 15, 2014), which are incorporated herein by reference, or~~

~~2. Another model determined by the Executive Officer to be equivalent or superior to CA-GREET 2.0,~~

~~3. An indirect land-use change modifier (when applicable).~~

~~4. CA-GREET2.0-T1 and CA-GREET2.0-T2 are available for download from ARB's Fuel Pathway web site at this address: http://www.arb.ca.gov/fuels/lcfs/lcfs.htm.~~

The Carbon Intensity Lookup Table~~s~~, 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:

Industrial Strategies Division, Air Resources Board. December 15, 2014. Low Carbon Fuel Standard (LCFS) Pathway for the Production of Biomethane from the Mesophilic Anaerobic Digestion of Wastewater Sludge at a Publicly-Owned Treatment Works (POTW). Version 2.0. Pathways CNG020 and CNG021.

Industrial Strategies Division, Air Resources Board. December 15, 2014. Low Carbon Fuel Standard (LCFS) Pathway for the Production of Biomethane from High Solids Anaerobic Digestion (HSAD) of Organic (Food and Green) Wastes. Version 2.0. Pathway CNG005.

Industrial Strategies Division, Air Resources Board. December 15, 2014. Detailed California-Modified GREET Pathway for Ultra Low Sulfur Diesel (ULSD) from Average Crude Refined in California. Version 3. Pathway ULSD001.

Industrial Strategies Division, Air Resources Board. December 15, 2014. Detailed CA-GREET Pathway

for California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB) from Average Crude Refined in California. Version 3. Pathway CBOB001.

Industrial Strategies Division, Air Resources Board. December 15, 2014. Detailed California-Modified GREET Pathway for California Average and Marginal Electricity. Version 3. Pathway ELC002.

Industrial Strategies Division, Air Resources Board. December 15, 2014. Detailed California Modified GREET Pathway for Compressed Gaseous Hydrogen from North American Natural Gas. Version 3. Pathways HYGN001, HYGN002, HYGN003, HYGN004, and HYGN005.

Table 6~~5~~. Tier 2 Lookup Table for Gasoline and Diesel and Fuels that Substitute for Gasoline and Diesel.[1]

Fuel	Pathway Identifier	Pathway Description	Carbon Intensity Values (gCO_2e/MJ)		
			Direct Emissions	Land Use or Other Indirect Effect	Total
CARBOB[1]	CBOB001	CARBOB - based on the average crude oil supplied to California refineries and average California refinery efficiencies	99.78~~100.58~~	0	99.78~~100.58~~
Diesel[1]	ULSD001	ULSD - based on the average crude oil supplied to California refineries and average California refinery efficiencies	102.01	0	102.01
Compressed Natural Gas	CNG005	Biomethane produced from the high-solids (greater than 15 percent total solids) anaerobic digestion of food and green wastes; compressed in CA	-22.93~~-34.70~~	0	-22.93 ~~-34.70~~
	CNG020	Biomethane produced from the mesophillic anaerobic digestion of wastewater sludge at a California publicly owned treatment works; on-site, high speed vehicle fueling or injection of fuel into a pipeline for off-site fueling; export to the grid of surplus cogenerated electricity.	7.75~~7.80~~	0	7.75~~7.80~~

Fuel	Pathway Identifier	Pathway Description	Carbon Intensity Values (gCO_2e/MJ)		
			Direct Emissions	Land Use or Other Indirect Effect	Total
	CNG021	Biomethane produced from the mesophillic anaerobic digestion of wastewater sludge at a California publicly owned treatment works; on-site, high speed vehicle fueling or injection of fuel into a pipeline for off-site fueling.	30.92~~30.98~~	0	30.92~~30.98~~
Electricity	ELC002	California grid electricity	105.16~~105.62~~	0	105.16~~105.62~~
Hydrogen	HYGN001	Compressed H_2 from central reforming of NG (includes liquefaction and re-gasification steps)	151.01~~152.48~~	0	151.01~~152.48~~
	HYGN002	Liquid H_2 from central reforming of NG	143.51~~144.95~~	0	143.51~~144.95~~
	HYGN003	Compressed H_2 from central reforming of NG (no liquefaction and re-gasification steps)	105.65~~105.91~~	0	105.65~~105.91~~
	HYGN004	Compressed H_2 from on-site reforming of NG	105.13~~105.65~~	0	105.13~~105.65~~
	HYGN005	Compressed H_2 from on-site reforming with renewable feedstocks	88.33~~81.92~~	0	88.33~~81.92~~

[1]The numbers appeared in this table are adjusted by EER at the LRT reporting stage for gasoline (CARBOB) or diesel (ULSD) substitute. These pathways are available to Tier 2 applicants only.

~~Table 6. Tier 2 Lookup Table for Diesel and Fuels that Substitute for Diesel.[1]~~

~~Fuel~~	~~Pathway Identifier~~	~~Pathway Description~~	~~Carbon Intensity Values (gCO_2e/MJ)~~		
			~~Direct Emissions~~	~~Land Use or Other Indirect Effect~~	~~Total~~
~~Diesel~~	~~ULSD001~~	~~ULSD – based on the average crude oil supplied to California refineries and average California refinery efficiencies~~	~~102.82~~	~~0~~	~~102.82~~
~~Compressed Natural Gas~~	~~CNG005~~	~~Biomethane produced from the high solids (greater than 15 percent total solids) anaerobic digestion of food and green wastes; compressed in CA~~	~~-34.70~~	~~0~~	~~-34.70~~

~~Fuel~~	~~Pathway Identifier~~	~~Pathway Description~~	~~Carbon Intensity Values (gCO_2e/MJ)~~		
			~~Direct Emissions~~	~~Land Use or Other Indirect Effect~~	~~Total~~
	~~CNG020~~	~~Biomethane produced from the mesophillic anaerobic digestion of wastewater sludge at a California publicly-owned treatment works; on-site, high-speed vehicle fueling or injection of fuel into a pipeline for off-site fueling; export to the grid of surplus cogenerated electricity.~~	~~7.80~~	~~0~~	~~7.80~~
	~~CNG021~~	~~Biomethane produced from the mesophillic anaerobic digestion of wastewater sludge at a California publicly-owned treatment works; on-site, high-speed vehicle fueling or injection of fuel into a pipeline for off-site fueling.~~	~~30.98~~	~~0~~	~~30.98~~
~~Electricity~~	~~ELC002~~	~~California grid electricity~~	~~105.62~~	~~0~~	~~105.62~~
~~Hydrogen~~	~~HYGN001~~	~~Compressed H_2 from central reforming of NG (includes liquefaction and re-gasification steps)~~	~~152.48~~	~~0~~	~~152.48~~
	~~HYGN002~~	~~Liquid H_2 from central reforming of NG~~	~~144.95~~	~~0~~	~~144.95~~
	~~HYGN003~~	~~Compressed H_2 from central reforming of NG (no liquefaction and re-gasification steps)~~	~~105.91~~	~~0~~	~~105.91~~
	~~HYGN004~~	~~Compressed H_2 from on-site reforming of NG~~	~~105.65~~	~~0~~	~~105.65~~
	~~HYGN005~~	~~Compressed H_2 from on-site reforming with renewable feedstocks~~	~~81.92~~	~~0~~	~~81.92~~

~~[1] The numbers appeared in this table are adjusted by EER at the LRT reporting stage. These pathways are available to Tier 2 applicants.~~

(G) The provisions set forth in this subsection 95488(c)(4)(G) apply exclusively to proposed LCFS fuel pathways that do not fall under the Tier 1 provisions found in 95488(c)(3). If no reference pathway meeting the requirements set forth in 95488(c)(1)(L) exists, or if the CI associated with the reference pathway is higher than the applicant's pathway CI by an amount that satisfies the substantiality requirements set forth in 95488(c)(4)(G)2, the applicant may use either Method 2A or Method 2B to establish a producer-specific pathway. The following sections set forth the requirements which apply to Method 2A and Method 2B applications:

1. *Scientific Defensibility Requirements*. For a proposed Method 2A or 2B pathway to be approved by the Executive Officer, the applicant must demonstrate that the life cycle analysis prepared in support of the pathway application is scientifically defensible.

For purposes of this regulation, "scientifically defensible" means the method for calculating the fuel's carbon intensity has been demonstrated to the Executive Officer as being at least as valid and robust as the process used to generate the carbon intensity values appearing in the Tier 2 Lookup Table~~s~~ (Table~~s 5 and~~ 6**,** subsection 95488(c)(4)(F)). Proof that a proposed method is scientifically defensible may rely on, but is not limited to, publication of the proposed pathway in a major, well-established and peer-reviewed scientific journal (e.g., the International Journal of Life Cycle Assessment, The Journal of Cleaner Production, Biomass and Bioenergy, and Chemie International).

2. *Substantiality Requirements*. For proposed Method 2A pathways to be certified, the applicant must demonstrate, to the Executive Officer's satisfaction, that the proposed Method 2A pathways meet both of the following substantiality requirements for each of the fuel pathways for which an applicant is proposing to use Method 2A:

   a. The source-to-tank carbon intensity of the fuel under the proposed Method 2A pathway meets one of the following two criteria. "Source-to-tank" means all the steps involved in feedstock production and transport, and finished fuel production, transport, and dispensing. A source-to-tank CI does not include the carbon intensity associated with the use of the fuel in a vehicle; "source-to-tank" is also referred to as "well-to-tank."

      i. For proposed Method 2A pathways with source-to-tank carbon intensities greater than 20 gCO_2e/MJ, that source-to-tank carbon intensity must be at least 5.5 percent lower than the source-to-tank carbon intensity of the reference pathway; or

      ii. For proposed Method 2A pathways with source-to-tank carbon intensities of 20 gCO_2e/MJ or less, that source-to-tank

carbon intensity must be at least 1 gCO_2e/MJ less than the source-to-tank carbon intensity of the reference pathway.

b. The applicant can demonstrate that all providers of the fuel covered by the applicant's proposed pathway will supply the California market with at least 10 million gasoline-gallon equivalents (1.1583×10^9 megajoules) of that fuel.

3. *Designation of Confidential Business Information.* The definition of "confidential business information," for the purposes of this section, is the same as the definition of "trade secret" found in Government Code, section 6254.7. All documents (including spreadsheets and other items not in a standard document format) that the applicant has designated as containing 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 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 "The Applicant has Redacted Confidential Business Information." This phrase must be displayed clearly and prominently wherever CBI has been redacted. If the applicant claims that information it submits is confidential, it must also provide contact information required by California Code of Regulations, title 17, section 91011.

4. *Public Disclosure of Application Materials and Use of Application Materials in the LRT-CBTS System.*

a. All information not identified as trade secrets are subject to public disclosure pursuant to California Code of Regulations, title 17, sections 91000 through91022 and the California Public Records Act (Government Code §§ 6250 et seq.); and

b. If the application is certified by the Executive Officer, the carbon intensity values, certain associated parameters, and other fuel-pathway-related information obtained or derived from the application will be incorporated into the LRT-CBTS system for

use by regulated parties using the applicant's certified fuel pathway.

5. *Submittal File Formats.* All applications and supporting documents 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 LCFS Fuel Producer ~~Legal Responsibility~~Attestation Letter required under section 95488(c)(2) shall be submitted as an original copy on paper and as a scanned electronic copy.

6. *Additional Submission and File Format Requirements.* An applicant proposing Method 2A or 2B for a fuel's carbon intensity value must meet all the following requirements:

   a. All relevant data, calculations, and other documentation in subsection (A) above must be uploaded through the LRT-CBTS web portal (http://www.arb.ca.gov/lcfsrt) ~~(http://www.arb.ca.gov/fuels/lcfs/reportingtool/reportingtool.htm)~~;

   b. The applicant must not convert spreadsheets, including CA-GREET 2.0 spreadsheets into other file formats, or otherwise take steps to prevent the Executive Officer from examining the contents of all cells in those spreadsheets;

   c. The applicant must demonstrate that the fuel that will be produced under the proposed pathway would comply with all applicable ASTM or other generally recognized national consensus standards;

   ~~d. The applicant must demonstrate that the fuel that will be produced under the proposed pathway is covered by an approved Multimedia Analysis, as required under section 95490;~~

   d~~e~~. The applicant must demonstrate that the fuel that will be produced under the proposed pathway is not exempt from the LCFS under section~~s~~ 95482(c)~~ and (d)~~.

(H) *Selection of Methods 2A and 2B*.

1. *Method 2A*: Applicants shall use Method 2A if

   a. A reference pathway meeting the requirements set forth in section 95488(c)(1)(L) exists either in the Tier 2 Lookup Table~~s~~ (Table~~s 5 and~~ 6), or among the certified Method 2 pathways currently in use by the applicant, and

   b. If the applicant's CI is lower than the CI of the reference pathway's CI by an amount that is equal to or greater than the substantiality threshold established in section 95488(c)(4)(G)2.

2. A Method 2A pathway CI shall be calculated using as a baseline the inputs that were used to calculate the reference pathway's CI. The Method 2A CI shall be calculated by changing one or more of the inputs used to calculate the reference pathway's CI. All changed inputs used to calculate a Method 2A CI must be clearly identified in the Method 2A application. The Executive Officer~~Staff~~ must be able to make the changes identified by the applicant to the inputs used to calculate to reference pathway's CI, and arrive at the same proposed Method 2A CI.

3. *Method 2B*: Method 2B pathways are not subject to the substantiality requirements set forth in section 95488(c)(4)(G)2. Applicants shall use Method 2B if

   a. No reference pathway meeting the requirements set forth in subsection 1. above exists in the Tier 2 Lookup Table~~s~~ (Table~~s 5 and~~ 6), or among the certified Method 2 pathways currently being used by the applicant; or

   b. An available pathway, as set forth in subsection 1., above, matches the applicant's production pathway, but has a lower CI than the applicant's pathway. This CI differential could be due to factors such as transport distances or electrical energy generation mixes. In this case, the applicant would be subject to the Method 2B provisions set forth in this section, but could utilize the available Tier 2 Lookup Table or certified Method 2 pathway as a reference pathway.

(I) *Specific Method 2A and 2B Fuel Pathway Application Requirements*. Unless otherwise noted, all applicants for a certified

Method 2A or 2B fuel pathway shall submit the items specified in this section.

1. *A Life Cycle Analysis Report*. A life cycle analysis report describes the full fuel life cycle, and describes in detail the calculation of the fuel pathway CI. The report shall contain sufficient detail to allow staff to replicate the CI calculated by the applicant. All inputs to, and outputs from, the fuel production process that contribute to the life cycle CI must be described in the life cycle analysis report. These inputs and outputs must then be fully accounted for in the calculation of the fuel pathway CI. The life cycle analysis report shall include the following information:

    a. A detailed description of the full fuel production process. The description shall include:

        i. A description of the full well-to-wheels fuel life cycle, including the 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. The discussion of the system boundary shall be accompanied by a schematic depicting the system boundary. That schematic shall show all feedstock and fuel production units that are included in the system boundary, as well as all material and energy flows across the system boundary. Any feedstock or fuel production units that have been excluded from the system must be shown on the schematic, and must be explicitly discussed in the narrative description of the full fuel life cycle.

        ii. A description of all fuel production feedstocks used, including 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).

iii. A description of all material inputs to the production process not covered in ii., above. These include, but are not limited to enzymes, nutrients, chemicals, and microorganisms.

iv. A description of the transportation modes used throughout the fuel life cycle. This discussion must identify origins and destinations, cargo carrying capacities, fuel shares, and the distances traveled in each case.

v. A description of all facilities and process units 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, and type and amount of fuel combusted, throughout all phases of the fuel life cycle over which the applicant exercises control.

vii. A quantitative discussion of the thermal and electrical energy consumption that occurs throughout all phases of the fuel life cycle over which the applicant exercises control. All fuels used (natural gas, biogas, coal, biomass, etc.) must be identified and use rates quantified. The regional electrical energy generation fuel mix used in the CA-GREET2.0-T2 analysis must be identified. Internally generated power such as cogeneration and combined heat and power must also be described. All applicants using grid electricity must choose electrical generation energy mixes from among the 26 subregions in the ninth edition of the U.S. EPA's Emissions and Generation Resource Integrated Database (eGRID). CA-GREET2.0-T2 contains these eGRID subregional energy mixes.

viii. A description of all co-products, byproducts, and waste products associated with production

of the fuel. That description shall extend to all processing, such as drying of distiller's grains, applied to these materials after they leave the fuel production process, including processing that occurs after ownership of the materials passes to other parties. Moreover, if a co-product credit is claimed for a co- or by-product, that credit must reflect all post-fuel-production processing steps covered by this section.

b. A detailed description of the calculation of the pathway CI. This description must provide clear, detailed, and quantitative information on process inputs and outputs, energy consumption, greenhouse gas emissions generation, 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 stages shall be shown. Those stages include but are not limited to feedstock production and transport; fuel production, transport, and dispensing; co-product production, transport and use; waste generation, treatment and disposal; and fuel use in a vehicle. This description shall include, at a minimum:

i. A table showing all CA-GREET2.0-T2 input values entered by the applicant. The worksheet, row, and column locations of the cells into which these inputs were entered shall be identified. In combination with the inputs identified in subsection b.ii. below, this table shall enable the Executive Officer to enter the reported inputs into a copy of CA-GREET2.0-T2 and to replicate the carbon intensity results reported in the application.

ii. A detailed discussion of all modifications other than those covered by subsection b.i. above, made to the CA-GREET2.0-T2 spreadsheet. This discussion shall allow the Executive Officer to duplicate all such modifications and, in combination with the inputs identified in subsection b.i. above, replicate the carbon intensity results reported in the application.

iii. Documentation of all CA-GREET2.0-T2 values used in the carbon intensity calculation process.

iv. A detailed description of all supporting calculations that were performed outside of the CA-GREET2.0-T2 spreadsheet.

c. 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 otherwise provide heat or electrical energy to the fuel production process, facilities that process or utilize co products such as distillers grains with solubles, and facilities which provide or pre-process feedstocks or thermal energy fuels. If energy is supplied to the fuel production facility by a co-located cogeneration plant and that plant also supplies energy to other facilities, those other facilities must be identified and described.

d. A list of references covering all information sources used in the preparation of the life cycle analysis. All reference citations in the life cycle analysis report shall include standard in-text parenthetical citations stating the author's last name and date of publication. Each in-text citation shall correspond to complete publication information provided in the list of references. Complete publication information shall at a minimum, identify the author(s), title of the referenced document (and of the article within that document, if applicable), 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 web site was last accessed.

2. Except as specified in section 95488(d)(2), The applicant shall submit receipts and invoices, as set forth in section 95488(c)(3)(A)2., covering a period of no less than two years for:

a. All forms of energy consumed in the fuel production process.
b. All fuel sales.

c. All feedstock purchases.
d. All co-product sales.

3. In lieu of receipts or invoices for **energy consumption,** fuel sales, feedstock purchases, or co-product sales, the applicant may seek Executive Officer approval to submit audit reports prepared by independent, third-party auditors that document **energy consumption,** fuel sales, feedstock purchases, or co-product sales.

4. The geographical coordinates of fuel production facility. Geographical coordinates can be reported either as the longitude and latitude or as the Universal Transverse Mercator coordinates.

5. A copy of the CA-GREET2.0-T2 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-GREET2.0-T20 unless the Executive Officer has approved the use of a method that is at least equivalent to the calculation methodology used by CA GREET2.0-T2.

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. A copy of the federal Renewable Fuel Standard 2 (RFS2) Third Party Engineering Review Report required pursuant to 40 CFR part 80.1450, if available. If the RFS2 engineering report is not available, the Life Cycle Analysis Report shall explain why it is not available.

9. Copies of the federal Renewable Fuel Standard 2 (RFS2) Fuel Producer Co-products Report as required pursuant to 40 CFR 80.1451(b)(1)(ii)(M)-(N). The period covered by the Co-products Report submittal to the Executive Officer shall

coincide with the period covered by the energy receipts submitted under subsection 2. above.

10. A signed LCFS Fuel Producer ~~Legal Responsibility~~ Attestation Letter, as set forth in section 95488(c)(2).

(5) *Certification Process*

(A) *Applicability*. Except where other applicability provisions are set forth, the provisions in ~~this~~ section 95488(c)(5) shall apply to all Tier 1 and all Tier 2 Method 2A and Method 2B fuel pathway applications. These provisions ~~in this section~~ shall not apply to Tier 2 Lookup Table applications.

(B) After~~Within 60 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 the application is complete or incomplete. If it is deemed to be incomplete, the Executive Officer shall identify which of the requirements enumerated in this section have not been met. Applicants advised that their applications are incomplete may submit additional information in response to the Executive Officer's findings, and request a new completeness evaluation. If the Executive Officer again deems the application to be incomplete, the applicant may again submit additional information, and again request a new completeness determination. This process may repeat until the application is deemed to be complete, or 180 calendar days have elapses from the date on which the Executive Office received the initial application, whichever occurs first. If the applicant is unable to achieve a complete application within this 180 calendar-day period, the application shall be denied and the applicant shall be informed in writing of that denial.

(C) Once an application is deemed to be complete, the Executive Officer will evaluate that application to determine whether it has met all requirements necessary for certification.

(D) 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.

(E) If the Executive Officer is unable to reach a certification determination, as provided in this subsection, the application will be denied without prejudice. Applications denied without prejudice may be revised and resubmitted for a new certification evaluation.

(F) 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. Replication will proceed as follows:

   i. Starting with a copy of CA-GREET2.0-T2 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.
   ii. The Executive Officer will then apply all CA-GREET2.0-T2 modifications reported by the applicant.
   iii. If the Executive Officer is able to duplicate the applicant's CA-GREET2.0-T2 results, the Executive Officer will proceed to subsection (F)2. below. If the Executive Officer is not able to duplicate the applicant's CA-GREET2.0-T2 results, the application shall be denied.

2. Using the energy purchase and fuel production data obtained from the receipts and invoices submitted by the applicant, the Executive Officer will verify the energy consumption inputs to the CA-GREET2.0-T2 carbon intensity calculations that were submitted by the applicant. If the Executive Officer is unable to verify the applicant's CA-GREET2.0-T2 energy consumption inputs by calculating them from energy receipt data and fuel production volumes, the application shall be denied.

3. The Executive Officer will evaluate the validity of all inputs not directly related to energy consumption used to calculate the applicant's CI. If any of those inputs are found to be invalid, the application shall be denied.

(G) Once the Executive Officer has deemed that a Tier 1 application~~s~~ or an application to replace any pathway subject to deactivation under section 95488(a) has~~to have~~ met all requirements for certification, the pathway~~they~~ will be certified and posted to the LCFS fuel pathway certification web page.

(H) For a new Tier 2 Method 2A or 2B pathway application, o~~O~~nce the Executive Officer has deemed that the application has~~Tier 2 Method 2A and 2B applications to have~~ met all requirements

necessary for certification, it~~they~~ will be posted to the LCFS fuel pathway comments web site for public comment. Comments will be accepted for 10 ~~calendar~~business days following the date on which the application was posted. Only comments related to potential factual or methodological errors will require responses from the applicant. The Executive Officer will forward to the applicant all comments identifying potential factual or methodological errors. In response, the applicant shall either:

1. Make revisions to its application that respond to the comments received and submit those revisions to the Executive Officer. The revised application packet must include a detailed discussion of the revisions made. The discussion must clearly delineate how each comment is related to a responsive revision. The revisions submitted must be approved by the Executive Officer before the application can be certified.

2. Submit a detailed written response to the Executive Officer explaining why no revisions are necessary. The response submitted by the applicant must be approved by the Executive Officer before the application can be certified.

3. As specified in subsection 1., revise portions of the application in response to a subset of the comments received, and, as specified in subsection 2., submit a written response explaining why the remaining comments do not warrant revisions.

4. Withdraw the application.

(l) The Executive Officer will evaluate the applicant's responses to the comments received, and determine whether they have adequately addressed the potential factual or methodological errors identified in those comments. If the applicant's responses are deemed to have adequately addressed the comments received, those responses will be posted to the LCFS fuel pathway comments web site, and the pathway (as revised, if revisions were necessary) will be certified and posted to the LCFS fuel pathway certification web page. If the applicant's responses are deemed to have inadequately addressed the potential factual or methodological errors identified in the comments received, or if the applicant fails to submit responses to those comments, the application will be denied.

(J) If no public comments are received, the application will be certified and moved to the LCFS fuel pathway certification web page.

(K) Fuel pathways that are certified and posted to the LCFS Fuel Pathway Certification web page will be accompanied by a certification statement, prepared by the Executive Officer, setting forth all limitations and operational conditions to which the new pathway will be subject.

(L) If the Executive Officer at any time determines that a certified fuel pathway does not meet the operational conditions specified in the certification statement issued by the Executive Officer as specified in subsection (K), above, the Executive Officer shall revoke or modify the certification 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 CCR, title 17, sections 60040 et seq.

(6) *Relationship of Pathway Carbon Intensities to Units of Fuel Sold in California.*

(A) LCFS CIs represent the life cycle greenhouse gas emissions, expressed in a per-megajoule of finished-fuel-energy basis, associated with long-term, steady-state fuel production operations. Actual CIs vary over time due to a variety of factors, including but not limited to seasonality, feedstock properties, plant maintenance, and unplanned interruptions and shutdowns. A fuel production operation will not be found to be in violation of its operating conditions unless a CI calculated from production data covering a full year of operations is higher than the certified CI reported for that fuel in the LRT-CBTS system. Fuel producers labeling fuel sold in California with LCFS CIs (in product transfer or similar documents), and regulated parties reporting those CIs in the LRT-CBTS system, must ensure, therefore, that the fuel so labeled and so reported will be found to have a life cycle CI, as calculated from production data covering a year of operations, that is equal to or less than the CIs reported in the LRT-CBTS system and on product transfer documents. Regulated parties shall not report fuel sales under any LCFS CI unless they have determined that the actual CI of that fuel, calculated as described in this section, is equal to or less than the LCFS CI under which sales of that fuel are reported in the LRT-CBTS system.

(B) Sellers of fuels covered by this regulation order must associate a CI with each unit of fuel sold in California. In general, all units of fuel produced while a given set of production parameters is in effect shall be assigned the same CI, regardless of whether those units will be sold in California. Under the following two sets of conditions, portions of the fuel produced while a given set of production parameters is in effect may be assigned different CIs. Those conditions are:

1. Two or more feedstocks are being simultaneously fed into the production process. A renewable diesel production facility may, for example, be feeding a mixture of soy oil, tallow, and used cooking oil into its production process.

2. Two or more co-products are being produced simultaneously. A corn ethanol plant may, for example, be drying only a portion of the distiller's grains it produces. A portion of the distiller's grains produced is sold dry, and the remainder is sold wet.

(C) When two or more feedstocks are being simultaneously fed into the production process, the producer shall associate a portion of the fuel produced with each feedstock, using the producer's average feedstock-specific mass-based fuel yield values. Each feedstock-specific subdivision of the total fuel produced shall be labeled with the certified CI associated with that feedstock.

(D) When two or more co-products are being simultaneously produced, the producer may label the fuel associated with those co-products one of two ways:

1. If the production facility has available to it a single CI reflective of the current set of operational conditions (including the production of two or more co-products, in the proportions currently being produced), the facility may label its entire production run of fuel with that CI.

2. If the production facility has available to it separate CIs associated with the production of each co-product, it may label portions of the fuel produced with the certified CIs associated with each co-product. The proportion of the total fuel produced that is labeled with each co-product-specific CI shall reflect the proportions of the total co-product stream that each co-product comprises. Co-product proportions shall be calculated on a mass-based, dry-matter basis.

(E) Unless either or both of the two conditions specified in subsection (B), above are in effect, all units of fuel produced while a given set of production parameters is in effect shall be assigned the same certified CI, regardless of whether those units will be sold in California. A different certified CI may be assigned only when one or more production parameters changes. Following that change, all units produced while the new set of production parameters is in effect shall be assigned the new CI, regardless of whether those units will be sold in California.

(F) Except when either or both of the two conditions specified in specified in subsection (B), above are in effect, a producer shall at no time label those units of fuel destined for the California market with a CI that is different from the CI of the units not destined for the California market. A producer that uses both biogas and natural gas as process fuel, for example, shall not label the units destined for the California market with a CI associated only with the use of biogas. All units produced, regardless of where they are sold, shall have associated with them a single CI that reflects the mix of process fuels that was used to produce those units. The portion of the units sold in California shall be labeled with that single CI.

(7) *Recordkeeping.*

(A) Each fuel provider that has been certified 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 certified fuel pathway. For each such facility, the entity must retain records showing:

1. The volume of fuel produced and subsequently sold in California under the certified fuel pathway. Sales invoices, contracts, and bills of lading for those fuel sales shall be retained.

2. The amounts of feedstocks purchased to produce the fuel specified in subsection 1. above. Invoices from the sellers and purchase contracts shall be retained.

3. The quantity of all forms of energy consumed to produce the fuel covered in subsection 1. above. All invoices for the purchase of process fuel, and all receipts for the sale of the applicant's finished fuel shall be maintained.

4. The quantities of all products co-produced with the fuel covered by certified LCFS pathway. Copies of invoices,

contracts, and bills of lading covering those sales shall be retained. In addition, copies of the federal Renewable Fuel Standard 2 Fuel Producer Co-products Report described in section 95488(c)(4)(I)9. Shall be retained. 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.

(B)~~.~~ These records shall be submitted to the Executive Officer within 20 calendar days from the date that a written request is received from the Executive Officer or his/her designee.

(d) *Special Circumstances*

(1) *Temporary FPCs for Fuels with Indeterminate CIs*. The requirements set forth in this section apply to all fuels with indeterminate CIs that are reported in the LRT-CBTS.

(A) A regulated party who has purchased a fuel, but is unable to determine the carbon intensity of that fuel, must petition the Executive Officer to use a temporary Fuel Pathway Code and carbon intensity value for reporting purposes. The term "unable to determine or indeterminate" is defined, for purposes of this provision, as follows:

1. The production facility cannot be identified at that time, or

2. The production facility is known but there is no approved fuel pathway application.

(B) Pursuant to subsection (A) above, the Executive Officer may grant regulated parties permission to use the following carbon intensities for gasoline- and diesel-substitute fuels respectively:

Table 7. Temporary FPCs for Fuels with Indeterminate CIs

Fuel	Feedstock	Process Energy	FPC	CI (gCO_2e/MJ)
Ethanol	Corn	Grid electricity, natural gas, and/or renewables	ETH~~8305~~100T	75.97~~83.05~~
	Sorghum	Grid electricity, natural gas, and/or renewables	ETH~~8956~~101T	83.49~~89.56~~
	Sugar Cane and molasses	Bagasse and straw only; no grid electricity	ETH~~6380~~102T	56.66~~63.80~~

Fuel	Feedstock	Process Energy	FPC	CI (gCO_2e/MJ)
	Any starch or sugar feedstock	Any another	ETH~~9949~~103T	98.47~~99.49~~
	Corn Stover	As specified in CA-GREET 2.0	ETH~~3338~~104T	41.05~~33.38~~
Biodiesel	Any feedstock derived from animal fats	Grid electricity, natural gas, and/or renewables	BIOD~~3793~~200T	37.54~~37.93~~
	Any feedstock derived from plant oils	Grid electricity, natural gas, and/or renewables	BIOD~~5696~~201T	56.95~~56.96~~
	Any feedstock	Any other	BIOD~~10310~~202T	102.01~~103.10~~
Renewable Diesel (UOP process)	Any feedstock derived from animal fats	Grid electricity, natural gas, and/or renewables	RNWD~~3392~~300T	32.26~~33.92~~
	Any feedstock derived from plant oils	Grid electricity, natural gas, and/or renewables	RNWD~~5252~~301T	53.21~~52.52~~
	Any feedstock	Any other	RNWD~~10310~~302T	102.01~~103.10~~
Fossil CNG	Petroleum Natural Gas	N/A	CNG~~8163~~400T	78.37~~81.63~~
Fossil LNG	Petroleum Natural Gas	N/A	LNG~~9697~~401T	94.42~~96.97~~
Fossil L-CNG	Petroleum Natural Gas	N/A	LCNG~~9693~~402T	97.33~~96.93~~
Biomethane CNG	Landfill or digester gas	Grid electricity, natural gas, and/or parasitic load	CNG~~3961~~500T	46.42~~39.61~~
Biomethane LNG	Landfill or digester gas	Grid electricity, natural gas, and/or parasitic load	LNG~~5852~~501T	64.63~~58.52~~
Biomethane L-CNG	Landfill or digester gas	Grid electricity, natural gas, and/or parasitic load	LCNG~~5848~~502T	67.18~~58.48~~
Electricity	Natural gas, dams, wind, etc.	CA mix average	EL~~13113~~600T	110.42~~131.31~~
Hydrogen	Centralized reforming of fossil L-CNG	Any	HYDN~~17331~~700T	191.25~~173.31~~
	Centralized reforming of fossil LNG		HYDN~~16877~~701T	176.58~~168.77~~
	Centralized reforming of fossil CNG		HYDN~~11599~~702T	113.38~~115.99~~

Fuel	Feedstock	Process Energy	FPC	CI (gCO_2e/MJ)
	On-site reforming of CNG		HYDN~~10929~~703T	112.48~~109.29~~
	On-site reforming of CNG made with renewable feedstocks		HYDN~~8429~~704T	98.05~~84.29~~
Any gasoline substitute feedstock-fuel combination not included above	Any	Any	SG~~9949~~800T	98.47~~99.49~~
Any diesel substitute feedstock-fuel combination not included above	Any	Any	SD~~10310~~801T	102.01~~103.10~~

(C) Based on timely reports using temporary FPCs, the regulated party may generate ~~**provisional**~~ credits. ~~**Such credits may not be sold, transferred, or retired for compliance, nor may fuel with a CI associated with a temporary FPC be transferred with obligation. Credits resulting from the reporting of these transactions will be pending until the reported fuels have received and are reported under a fuel pathway CI, obtained pursuant to the procedures set forth in section 95488(c).**~~

(D) A temporary FPC approved for use by the Executive Officer will be permitted for LRT-CBTS reporting purposes for up to two quarters. Reporting will be granted only for the quarter during which a temporary FPC is approved for use and the subsequent full quarter. ~~**By the end of this two-quarter period a complete application for a fuel pathway must have been submitted and deemed complete pursuant to the procedures set forth in section 95488(c). The application must be awaiting final certification of the fuel pathway at that time to avoid forfeiting all accumulated pending credits.**~~

(E) A request to use a temporary FPC must be submitted online using the Temporary FPC Request Form in the LRT-CBTS.

(2) *Provisional Pathways.* As set forth in sections 95488(c)(3) and (c)(4)(I)2., LCFS fuel pathways are generally developed for fuels that have been in full commercial production for at least two years. In order to encourage the development of innovative fuel technologies, however, applicants may submit New Pathway Request Forms, as set forth in section 95488(c)(1), covering Tier 1 and Tier 2 facilities that have been in full commercial

operation for less than two years, provided they have been in full commercial production for at least one full calendar quarter. If that form is subsequently approved by the Executive Officer, as set forth in section 95488(c)(2), the applicant shall submit operating records covering all prior periods of full commercial operation, provided those records cover at least one full calendar quarter. The following subsections govern the development, evaluation, and post-certification monitoring of such provisional pathways.

Following the provisional certification of a fuel pathway application, the applicants shall submit copies of receipts for all energy purchases each calendar quarter until the Executive Officer is in possession of receipts covering two full calendar years of commercial production. At any time during those two years, the Executive Officer may revise as appropriate the plant's actual operational CI based on those receipts. Based on timely reports, the applicant may generate provisional credits. **~~Such credits may not be sold, transferred, or retired for compliance, nor may fuel with a provisional CI be transferred with obligation. The applicant may not sell credits generated under a provisionally-approved fuel pathway, or transfer the provisional fuel with obligation, until~~** **Until** the Executive Officer has adjusted the CI or informed the producer that the provisional CI has been successfully corroborated by operational records covering a full two years of commercial operation**, the Executive Officer may adjust the number of credits or reverse any provisional credit in the producer's account without a hearing, notwithstanding the requirements of section 95495**.

(A) If**, after a plant has been in full commercial production for more than two years,** the plant's operational CI is higher than the provisionally-certified CI, the Executive Officer will replace the certified CI with the operational CI in the LRT-CBTS system and adjust the producer's credit balance accordingly.

(B) If the plant's operational CI appears to be lower than the certified CI, the Executive Officer will take no action. The applicant may, however, petition the Executive Officer for a provisional CI reduction to reflect operational data. In support of such a petition, the applicant must submit a revised application packet that fully documents the requested reduction.

(e) *Evidence of Fuel Transport Mode.* A regulated party may not generate credits pursuant to section 95486 unless it has demonstrated to the Executive Officer that a fuel transport mode exists, for each of the transportation fuels for which it is responsible under the LCFS regulation, and that each fuel transport mode has been approved by the Executive Officer pursuant to this section. Transactions associated with fuels for which a fuel transport mode has not yet been approved

must be reported using a fuel transport mode code PHY10 in the LRT-CBTS. Electricity used as a transportation fuel is exempt from this requirement. 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 that accurately represents the regulated party’s transportation fuel.

A regulated party must submit the demonstration of a fuel transport mode to the Executive Officer within 90 days of providing a fuel in California unless an initial demonstration of fuel transport mode was previously submitted and approved under the provisions of the previous LCFS regulation order. The Executive Officer shall not approve a fuel transport mode demonstration unless it meets the following requirements:

(1) *Initial Demonstration of Delivery Methods.* The regulated party must initially demonstrate the delivery methods comprising the fuel transport mode for each of the regulated party’s fuels. The demonstration must include documentation in sufficient detail for the Executive Officer to verify the existence of the fuel transport mode’s delivery methods.

The documentation must include a map(s) that shows the truck/rail lines or routes, pipelines, and other delivery segments that, together, comprise the fuel transport mode. 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 fuel transport mode. The regulated party must provide the contact information for each such company, including the contact name, mailing address, phone number, and company name.

(2) *Initial Demonstration of Fuel Introduced Into the Fuel Transport Mode.* For each transportation fuel for which LCFS credit is being claimed, the regulated party must show that a specific volume of that fuel was introduced into the fuel transport mode identified in subsection (1), above. The showing may include a written purchase contract or transfer document for the volume of fuel that was introduced or otherwise delivered into the fuel transport mode.

Initial demonstrations covering biomethane conveyed to California by pipeline for the purpose of earning credits under the LCFS shall include statements from the biomethane suppliers and marketers attesting to the fact that that biomethane is not being used to earn credits under any other state or federal program, with the sole exception of the federal Renewable Fuel Standard program (RFS2).

(3) *Initial Demonstration of Fuel Removed From the Fuel Transport Mode.* For each specific transportation fuel identified in subsection (2), above, the regulated party must show that the same volume fuel was removed from the fuel transport mode in California by the regulated party and provided for transportation use in California. The showing may include 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 fuel transport mode in California.

(4) *Subsequent Demonstration of Fuel Transport Mode.* Once the Executive Officer has approved the initial demonstrations specified in subsections (1) through (3) above, 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 subsections (1) through (3) involving a change in the fuel's basic mode of transport. For example, if an approved transport mode 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. In the case of biomethane, “material change” also means that the fuel is being claimed for credit under another state or federal program, other than the federal RFS2.

If there is a material change to an approved fuel transport mode, the regulated party must notify the Executive Officer in writing within 30 business days after the material change has occurred, and the previously-approved fuel transport mode shall become invalid 30 business days after the material change has occurred. A regulated party that wishes to generate credits after an approved fuel transport mode has become invalid must submit for Executive Officer approval a new initial demonstration, pursuant to subsections (1) through (3) above. Biomethane that is being claimed for credit under another state or federal program, other than the RFS2, may not seek a new fuel transport mode demonstration under the LCFS.

(5) *Submittal and Review of and Final Action on Submitted Demonstrations.*

(A) Once the Executive Officer has approved the fuel transport mode demonstration, the regulated party may generate credits based on timely reporting, provided that the requirements of section 95488(c) and (d) have also been met.

(B) After~~Within 15 business days of~~ receipt of a fuel transport mode demonstration, the Executive Officer shall determine whether the fuel transport mode 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 subsections (1) through (3) above. 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 fuel transport mode demonstration and notify the regulated party.

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, ~~43000.5, 43013~~ and 43018 Health and Safety Code; 42 U.S.C. section 7545, 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, 39515, 39516, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511 and 43000, Health and Safety Code; Section 25000.5, Public Resources Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

§ 95489. Provisions for Petroleum-Based Fuels.

Table 8. Carbon Intensity Lookup Table for Crude Oil Production and Transport.

Country of Origin	Crude Identifier	Carbon Intensity (gCO_2e/MJ)
Baseline Crude Average*	California Baseline Crude Average applicable to crudes supplied during 2015 and subsequent years	~~12.71~~11.98
	California Baseline Crude Average applicable to crudes supplied in 2013 and 2014	11.39
Annual Crude Average	Volume-weighted California average CI for crudes supplied during 2013	11.37
	~~Volume-weighted California average CI for crudes supplied during 2014~~	~~TBD~~
Algeria	Saharan	11.69
Angola	Cabinda	10.03
	Clov	8.25
	Dalia	9.78
	Gimboa	9.65
	Girassol	10.33
	Greater Plutonio	9.78
	Hungo	9.10
	Kissanje	9.65
	Mondo	9.80
	Nemba	10.19
	Pazflor	8.91
Argentina	Canadon Seco	9.28
	Escalante	9.30
	Hydra	8.08
	Medanito	9.98
Australia	Enfield	5.09
	Pyrenees	5.99

	Stybarrow	6.31
	Van Gogh	6.14
	Vincent	5.05
Azerbaijan	Azeri	8.25
Brazil	Albacora Leste	6.55
	Bijupira-Salema	8.08
	Frade	6.12
	Jubarte	8.37
	Lula	9.94
	Marlim	7.76
	Marlim Sul	8.49
	Ostra	6.54
	Polvo	6.39
	Roncador	7.44
	Roncador Heavy	7.09
	Sapinhoa	8.53
Cameroon	Lokele	22.29
Canada	Access Western Blend	~~17.21~~16.31
	Albian Heavy Synthetic (all grades)	~~20.52~~19.90
	Albian Muskeg River Heavy	~~20.52~~19.90
	BC Light	8.27
	Bonnie Glen	8.27
	Borealis Heavy Blend	~~18.32~~17.21
	Boundary Lake	8.27
	Bow River	9.27
	Cardium	8.27
	Christina Dilbit Blend	~~14.04~~13.34
	Christina Synbit	~~17.90~~17.43
	Cold Lake	~~19.64~~18.40
	Conventional Heavy	9.27
	CNRL Light Sweet Synthetic	21.39
	Federated	8.27
	Fosterton	9.27
	Gibson Light Sweet	8.27
	Halkirk	8.27
	Hardisty Light	8.27
	Hardisty Synthetic	~~36.96~~35.27
	Husky Synthetic	~~36.62~~35.42
	Joarcam	8.27
	Kearl Lake	12.05
	Kerrobert Sweet	8.27
	Koch Alberta	8.27
	Light Sour Blend	8.27
	Light Sweet	8.27
	Lloyd Blend	9.27
	Lloyd Kerrobert	9.27
	Lloydminster	9.27
	Long Lake Heavy	~~32.04~~29.88
	Long Lake Light Synthetic	~~37.29~~35.12

	Mackay Heavy Blend	~~20.76~~20.01
	Medium Gibson Sour	8.27
	Medium Sour Blend	8.27
	Midale	8.27
	Mixed Sour Blend	8.27
	Mixed Sweet	8.27
	Moose Jaw Tops	8.27
	Peace	8.27
	Peace Pipe Sour	8.27
	Peace River Heavy	~~22.03~~20.59
	Peace River Sour	8.27
	Pembina	8.27
	Pembina Light Sour	8.27
	Premium Albian Synthetic	21.39
	Premium Conventional Heavy	9.27
	Premium Synthetic	21.39
	Rainbow	8.27
	Rangeland Sweet	8.27
	Redwater	8.27
	Seal Heavy	9.27
	Shell Synthetic (all grades)	21.39
	Smiley-Coleville	9.27
	Sour High Edmonton	8.27
	Sour Light Edmonton	8.27
	Statoil Cheecham Dilbit	~~15.32~~14.49
	Statoil Cheecham Synbit	~~18.75~~18.20
	Suncor Synthetic (all grades)	~~24.16~~23.71
	Surmont Heavy Blend	~~18.82~~18.26
	Synbit Blend	~~21.65~~20.76
	Syncrude Synthetic (all grades)	21.39
	Synthetic Sweet Blend	~~22.78~~22.55
	Tundra Sweet	8.27
	Wabasca	6.79
	Western Canadian Blend	9.27
	Western Canadian Select	~~19.31~~18.43
Chad	Doba	8.08
Colombia	Cano Limon	9.41
	Castilla	9.61
	Cusiana	10.67
	Magdalena	~~22.27~~21.01
	Rubiales	9.20
	South Blend	9.22
	Vasconia	9.33
Congo	Azurite	11.49
	Djeno	11.87
Ecuador	Napo	9.56
	Oriente	10.90
Equatorial Guinea	Ceiba	10.88
	Zafiro	21.56

Iran	Dorood	13.37
	Forozan	11.09
	Iran Heavy	12.49
	Iran Light	13.50
	Lavan	11.80
	Nowruz-Soroosh	10.95
	Sirri	10.77
Iraq	Basra Light	13.08
Kuwait	Kuwait	10.31
Libya	Amna	13.98
Malaysia	Tapis	11.00
Mauritania	Chinquetti	9.28
Mexico	Isthmus	10.16
	Isthmus Topped	13.16
	Maya	7.97
Neutral Zone	Eocene	7.48
	Khafji	9.04
	Ratawi	9.42
Nigeria	Agbami	19.29
	Amenam	17.92
	Antan	33.44
	Bonga	6.44
	Bonny	15.53
	Brass	82.48
	EA	6.24
	Erha	10.50
	Escravos	20.52
	Forcados	22.41
	Okono	27.55
	OKWB	34.80
	Pennington	21.69
	Qua Iboe	15.25
	Yoho	15.25
Oman	Oman	~~12.72~~12.35
Peru	Loreto	8.23
	Mayna	9.85
Russia	ESPO	13.70
	M100	19.18
	Sokol	10.51
	Vityaz	11.55
Saudi Arabia	Arab Extra Light	9.35
	Arab Light	9.15
	Arab Medium	8.66
	Arab Heavy	8.77
Thailand	Bualuang	5.12
Trinidad	Calypso	7.37
	Galeota	10.57
UAE	Murban	9.92
	Upper Zakum	8.97

Venezuela	Bachaquero	~~26.77~~25.42
	Boscan	10.76
	Hamaca	23.51
	Hamaca DCO	7.63
	Laguna	~~26.77~~25.42
	Mesa 30	11.45
	Petrozuata (all synthetic grades)	23.53
	Zuata (all synthetic grades)	23.51
US Alaska	Alaska North Slope	12.93
US Colorado	Niobrara	8.03
US New Mexico	Four Corners	9.37
	New Mexico Intermediate	9.37
	New Mexico Sour	9.37
	New Mexican Sweet	9.37
US North Dakota	Bakken	10.18
	North Dakota Sweet	10.18
	Williston Basin Sweet	10.18
US Oklahoma	Oklahoma Sour	12.03
	Oklahoma Sweet	12.03
US Texas	Eagle Ford Shale	12.03
	East Texas	12.03
	North Texas Sweet	12.03
	South Texas Sweet	12.03
	West Texas Intermediate	12.03
	West Texas Sour	12.03
US Utah	Covenant	3.78
	Grand Cane	5.99
	Utah Black Wax	5.09
	Utah Sweet	~~6.14~~5.99
US Wyoming	Wyoming Sweet	24.11
US California Fields	Aliso Canyon	4.16
	Ant Hill	22.04
	Antelope Hills	6.56
	Antelope Hills, North	~~20.91~~19.14
	Arroyo Grande	~~32.63~~29.33
	Asphalto	8.00
	Bandini	6.78
	Bardsdale	3.63
	Barham Ranch	2.64
	Beer Nose	2.50
	Belgian Anticline	3.56
	Bellevue	7.52
	Bellevue, West	4.55
	Belmont, Offshore	4.15
	Belridge, North	~~4.99~~4.77
	Belridge, South	~~16.65~~14.84
	Beverly Hills	4.49
	Big Mountain	2.58
	Blackwells Corner	5.03

	Brea-Olinda	3.17
	Buena Vista	~~7.56~~7.45
	Burrel	25.23
	Cabrillo	2.49
	Canal	4.17
	Canfield Ranch	3.99
	Carneros Creek	3.40
	Cascade	2.12
	Casmalia	9.35
	Castaic Hills	2.52
	Cat Canyon	~~4.13~~4.08
	Cheviot Hills	3.39
	Chico-Martinez	~~17.24~~15.81
	Cienaga Canyon	4.08
	Coalinga	~~32.82~~27.85
	Coles Levee, N	4.56
	Coles Levee, S	2.70
	Comanche Point	~~8.32~~7.88
	Coyote, East	6.15
	Cuyama, South	14.43
	Cymric	~~21.48~~19.23
	Deer Creek	9.96
	Del Valle	4.73
	Devils Den	5.88
	Edison	~~16.67~~15.55
	El Segundo	3.77
	Elk Hills	6.30
	Elwood, S., Offshore	3.57
	Fruitvale	3.87
	Greeley	9.60
	Hasley Canyon	2.15
	Helm	3.93
	Holser	3.04
	Honor Rancho	4.09
	Huntington Beach	5.11
	Hyperion	2.05
	Inglewood	9.52
	Jacalitos	2.40
	Jasmin	~~13.98~~12.77
	Kern Front	~~29.65~~25.10
	Kern River	~~12.99~~9.63
	Kettleman Middle Dome	3.70
	Kettleman North Dome	5.14
	Landslide	12.17
	Las Cienegas	4.63
	Livermore	2.56
	Lompoc	19.65
	Long Beach	6.84
	Long Beach Airport	4.02

	Los Angeles Downtown	5.71
	Los Angeles, East	10.02
	Lost Hills	~~11.18~~10.26
	Lost Hills, Northwest	3.91
	Lynch Canyon	~~12.97~~12.00
	Mahala	2.70
	McCool Ranch	3.32
	McDonald Anticline	4.30
	McKittrick	~~28.72~~24.64
	Midway-Sunset	~~29.27~~25.05
	Montalvo, West	2.28
	Montebello	14.96
	Monument Junction	3.62
	Mount Poso	~~11.71~~11.17
	Mountain View	3.71
	Newhall-Potrero	2.85
	Newport, West	4.38
	Oak Canyon	3.50
	Oak Park	2.48
	Oakridge	2.39
	Oat Mountain	2.59
	Ojai	2.75
	Olive	1.98
	Orcutt	~~13.35~~12.71
	Oxnard	~~9.90~~9.16
	Paloma	3.51
	Placerita	~~41.72~~31.20
	Playa Del Rey	4.58
	Pleito	2.60
	Poso Creek	~~32.09~~28.15
	Pyramid Hills	3.34
	Railroad Gap	5.05
	Raisin City	8.72
	Ramona	3.41
	Richfield	4.40
	Rincon	3.93
	Rio Bravo	5.75
	Rio Viejo	2.87
	Riverdale	3.74
	Rose	2.70
	Rosecrans	5.52
	Rosecrans, South	3.11
	Rosedale	6.49
	Rosedale Ranch	8.00
	Round Mountain	~~27.77~~25.99
	Russell Ranch	7.56
	Salt Lake	2.67
	Salt Lake, South	3.84
	San Ardo	~~31.48~~27.26

	San Miguelito	5.65
	San Vicente	2.47
	Sansinena	2.56
	Santa Clara Avenue	3.49
	Santa Fe Springs	10.50
	Santa Maria Valley	5.15
	Santa Susana	2.93
	Sargent	3.98
	Saticoy	3.33
	Sawtelle	3.18
	Seal Beach	5.08
	Semitropic	3.48
	Sespe	2.79
	Sevier	2.42
	Shafter, North	3.01
	Shiells Canyon	3.38
	South Mountain	3.31
	Stockdale	2.13
	Tapia	~~7.94~~7.55
	Tapo Canyon, South	2.92
	Tejon	6.49
	Tejon Hills	6.47
	Tejon, North	3.14
	Temescal	2.75
	Ten Section	6.60
	Timber Canyon	2.99
	Torrance	4.49
	Torrey Canyon	2.73
	Union Avenue	3.57
	Ventura	4.61
	Wayside Canyon	1.67
	West Mountain	2.84
	Wheeler Ridge	4.28
	White Wolf	1.88
	Whittier	2.42
	Wilmington	7.02
	Yowlumne	10.62
	Zaca	8.16
US California Sub-Field	Edison Light	5.40
	South Belridge Light	4.03
US Federal OCS	Beta	1.71
	Carpinteria	2.85
	Dos Cuadras	4.00
	Hondo	5.54
	Hueneme	3.04
	Pescado	5.72
	Point Arguello	14.23
	Point Pedernales	9.38
	Sacate	3.59

	Santa Clara	2.47
	Sockey	8.35
Default		~~12.71~~11.98

* Based on production and transport of the crude oil supplied to the indicated California refinery(ies) during the baseline calendar year, 2010

(a) *General.* Deficit calculations to be used for a regulated party's CARBOB or diesel fuel are specified in section 95489(b). 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 95489(c). The credit calculation for crude oil that is produced using innovative methods, such as carbon capture and sequestration (CCS), is specified in section 95489(d). Special requirements for low-complexity/low-energy-use refineries are specified in section 95489(e). The credit calculation for investments that reduce greenhouse gas emissions at refineries is specified in section 95489(f) . ***The credit calculation for investments that reduce greenhouse gas emissions at renewable hydrogen refineries is specified in section 95489(g).***

(b) *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

$$Deficits_{Base}^{XD}(MT) = (CI_{Standard}^{XD} - CI_{BaselineAve}^{XD}) \times E^{XD} \times C$$

Incremental Deficit Calculation to Mitigate Increases in the Carbon-Intensity of Crude Oil

If $\cancel{CI_{20XXCrudeAve} > CI_{BaselineCrudeAve}}$ $\underline{CI_{20XXCrudeAve} > CI_{BaselineCrudeAve} + 0.10}$ *then:*

$$Deficits_{Incremental20XX}^{XD} = (CI_{BaselineCrudeAve} - CI_{20XXCrudeAve}) \times E^{XD} \times C$$

If $\cancel{CI_{20XXCrudeAve} \leq CI_{BaselineCrudeAve}}$ $\underline{CI_{20XXCrudeAve} \leq CI_{BaselineCrudeAve} + 0.10}$ *then:*

$$Deficits_{Incremental20XX}^{XD} = 0$$

where,

$Deficits_{Base}^{XD}(MT)$ and $Deficits_{Incremental20XX}^{XD}$ mean the amount of LCFS deficits incurred (a negative value), in metric tons, by the volume of CARBOB (XD = "CARBOB") and diesel fuel (XD = "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 95486(b)(3)(A);

$CI^{XD}_{BaselineAve}$ is the average carbon-intensity value of CARBOB or diesel, in gCO_2e/MJ, that is derived from petroleum feedstock and is either produced in or imported into California during the baseline calendar year, 2010. For purposes of this provision, $CI^{XD}_{BaselineAve}$ 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~~Table 6. 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, 2010.

$CI_{BaselineCrudeAve}$ is the California Baseline Crude Average carbon intensity value, in gCO_2e/MJ, attributed to the production and transport of the crude oil supplied as petroleum feedstock to California refineries during the baseline calendar year, 2010. For comparison to $CI_{2015CrudeAve}$,the baseline is:

$$\cancel{CI_{BaselineCrudeAve} = \frac{[11.39 \times V_{2013} + 11.39 \times V_{2014} + 12.71 \times V_{2015}]}{[V_{2013} + V_{2014} + V_{2015}]}}$$

$$CI_{BaselineCrudeAve} = \frac{[11.39 \times V_{2013} + 11.39 \times V_{2014} + 11.98 \times V_{2015}]}{[V_{2013} + V_{2014} + V_{2015}]}$$

For comparison to $CI_{2016CrudeAve}$, the baseline is:

$$\cancel{CI_{BaselineCrudeAve} = \frac{[11.39 \times V_{2014} + 12.71 \times V_{2015} + 12.71 \times V_{2016}]}{[V_{2014} + V_{2015} + V_{2016}]}}$$

$$CI_{BaselineCrudeAve} = \frac{[11.39 \times V_{2014} + 11.98 \times V_{2015} + 11.98 \times V_{2016}]}{[V_{2014} + V_{2015} + V_{2016}]}$$

For comparison to $CI_{2017CrudeAve}$and subsequent years, the baseline is

$$\cancel{CI_{BaselineCrudeAve} = 12.71}$$

$$CI_{BaselineCrudeAve} = 11.98$$

$CI_{20XXCrudeAve}$ is the Three-year California Crude Average carbon intensity value, in gCO_2e/MJ, attributed to the production and transport of the crude oil supplied as petroleum feedstock to California refineries during the most recent three calendar years. For example, the Three-year California Crude Average carbon intensity value for 2015 is:

$$CI_{2015CrudeAve} = \frac{[CI_{2013} \times V_{2013} + CI_{2014} \times V_{2014} + CI_{2015} \times V_{2015}]}{[V_{2013} + V_{2014} + V_{2015}]}$$

V_{20XX} is the total volume of crude supplied to California refineries during the specified year 20XX.

CI_{20XX} is the Annual Crude Average carbon intensity value, calculated annually as described in section 95489(c). The Annual Crude Average carbon intensity value~~s~~ for 2013 ~~and 2014 are~~is specified in Table 8.

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 3, either produced in California or imported into California during a specific calendar year and sold, supplied, or offered for sale in California.

$$C = 1.0 \times 10^{-6} \frac{MT}{gCO_2e}$$

(c) *Addition of Incremental Deficits that Result from Increases in the Carbon Intensity of Crude Oil to a Regulated Party's Compliance Obligation.*

(1) 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 $CI_{20XXCrudeAve}$ was established.

(2) 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) *Process for Calculating the Annual Crude Average Carbon Intensity Value*.

(A) An Annual Crude Average carbon intensity value will be calculated for each calendar year using a volume-weighted average of crude carbon intensity values. The volume for each imported crude will be the total volume of that crude reported by all regulated parties in the Annual Compliance Reports for the calendar year. Volume contributions for California State fields will be based on oil production data from the California Department of Conservation and volume contributions for California Federal Offshore fields will be based on oil production data from the Bureau of Safety and Environmental Enforcement. Field production volumes for

California-produced crude will be reduced, if necessary, to account for crude exports. Crude carbon intensity values are those listed in Table 8. For crude names not listed, the default carbon intensity value from Table 8 will be used until the crude name and carbon intensity value is added to Table 8 as described in section 95489(c)(3).

(B) Within 15 days of receiving the Annual Compliance reports, the Executive Officer shall post the Annual Crude Average carbon intensity calculation at the LCFS web site (http://www.arb.ca.gov/fuels/lcfs/lcfs.htm) for public comment. Written comments shall be accepted for 15 days following the date on which the analysis was posted. Only comments related to potential factual or methodological errors in the posted Annual Crude Average carbon intensity value may be considered. The Executive Officer shall evaluate the comments received and, if the Executive Officer deems it necessary, may request in writing additional information or clarification from the commenters. Commenters shall be provided 10 days to respond to these requests. The Executive Officer shall post the final Annual Crude Average carbon intensity value at the LCFS web site within 15 days of completion of the comment period, if no comments are received. If comments are received, the Executive Officer shall post the final Annual Crude Average carbon intensity value within 30 days of completion of the comment period or within 25 days of the latest request by the Executive Officer for additional information or clarification from a commenter, whichever is later.

(C) Revisions to the OPGEE model, addition of crudes to Table 8, and updates to all carbon intensity values listed in Table 8 will be considered on a three-year cycle through proposed amendments of the Low Carbon Fuel Standard regulation.

(d) *Credits for Producing Crudes using Innovative Methods.* A crude oil producer or refinery receiving the crude may generate credits for crude oil that has been produced using innovative methods and delivered to California refineries for processing.

(1) *General Requirements.*

(A) For the purpose of this section, an innovative method means crude production using one or more of the following technologies:

1. Solar steam generation (generated steam of ~~65~~55 percent quality or greater). Steam must be used onsite at the crude oil production facilities.

2. Carbon capture and storage (CCS). Carbon capture must take place onsite at the crude oil production facilities.
3. Solar or wind electricity generation. To qualify for the credit, electricity must be produced and consumed onsite or be provided directly to the crude oil production facilities from a third-party generator and not through a utility owned transmission or distribution network.
4. Solar heat generation. Heat must be used onsite at the crude oil production facilities.

(B) The innovative method must become operational no earlier than 2010 for solar steam and CCS projects or January 1, 2015, for any other innovative method above. Any project must be approved for use by the Executive Officer before the crude oil producer or purchasing refinery can generate credit under the LCFS regulation. CCS projects must use a Board-approved quantification methodology including monitoring, reporting, verification, and permanence requirements associated with the carbon storage method being proposed for the innovative method.

No credits may be generated for any quarter preceding the quarter in which the application is approved, except that electricity and heat generation projects may generate credits retroactive to quarter three or quarter four of 2015 if the project meets all of the following:

1. A complete application was submitted before July 1, 2015;
2. The application was approved prior to March 1, 2016;
3. The required data were reported in the LRT-CBTS prior to March 1, 2016; and
4. Records required by 95489(d)(4) were maintained for the periods in 2015 corresponding to the information reported in the LRT-CBTS.

(C) The crude oil producer (applicant) must initiate review of the innovative method through a written application to the Executive Officer. If the innovative method involves steam, heat, or electricity produced by a third party and delivered to the crude oil producer, both the crude producer and the third party must apply and will be considered joint applicants for approval of the innovative method. If more than one crude producer receives steam, heat, or electricity from a single third-party facility, each crude producer must submit an independent application with the third party as a joint applicant on each submittal. If the innovative method involves delivery of carbon captured by the crude oil producer to a third party to store the carbon, both the crude producer and the third party must apply and will be considered joint applicants for approval of the innovative

method. Third parties that are joint applicants cannot receive credits for the innovative method.

(D) A crude oil producer must register under section 95483.1 as an opt-in regulated party to receive credits for an approved innovative method. If the crude oil producer using an approved innovative method does not register as an opt-in regulated party, credits generated by the producer's use of the innovative method may be claimed by California refinery(ies) that purchase the crude produced using the innovative method if ARB receives all information it needs to ensure compliance with limitations and reporting requirements applied to the method.

(E) The innovative method must achieve one of the following threshold criteria:

1. A carbon intensity reduction from the comparison baseline of at least 0.10 gCO_2e/MJ, or
2. An emissions reduction of at least 5,000 metric tons CO_2e per year.

If the innovative method involves more than one crude producer using steam, heat, or electricity produced at a single third-party facility, the threshold criteria listed above may apply to the aggregated project total.

(F) Credits for producing crude oil with innovative methods must be calculated as specified below:

For crude oil produced using solar steam generation (generated steam of 75 percent quality or greater):

$$\cancel{Credits_{Innov}(MT) = 29360 \times \frac{V_{steam} \times f_{solar}}{V_{crudeproduced}} \times V_{Innov} \times C}$$

$$\underline{Credits_{Innov}(MT) = 26765 \times \frac{V_{steam} \times f_{solar}}{V_{crudeproduced}} \times V_{Innov} \times C}$$

For crude oil produced using solar steam generation (generated steam of 65 to 75 percent quality):

$$\cancel{Credits_{Innov}(MT) = 28011 \times \frac{V_{steam} \times f_{solar}}{V_{crudeproduced}} \times V_{Innov} \times C}$$

$$\underline{Credits_{Innov}(MT) = 24992 \times \frac{V_{steam} \times f_{solar}}{V_{crudeproduced}} \times V_{Innov} \times C}$$

<u>For crude oil produced using solar steam generation (generated steam of 55 to 65 percent quality):</u>

$$\underline{Credits_{Innov}(MT) = 23219 \times \frac{V_{steam} \times f_{solar}}{V_{crudeproduced}} \times V_{Innov} \times C}$$

For crude oil produced using solar or wind based electricity:

$$Credits_{Innov}(MT) = 511 \times \frac{E_{electricity} \times f_{renew}}{V_{crudeproduced}} \times V_{Innov} \times C$$

For crude oil produced using any other innovative method listed in section 95489(d)(1)(A):

$$Credits_{Innov}(MT) = \Delta CI_{Innov} \times E_{Innov} \times V_{Innov} \times C$$

where,

$Credits_{Innov}(MT)$ means the amount of LCFS credits generated (a positive value), in metric tons, by the volume of a crude oil produced using the innovative method and delivered to California refineries for processing;

V_{steam} means the overall volume, in barrels cold water equivalent, of steam injected;

f_{solar} means the fraction of injected steam that is produced using solar;

$V_{crudeproduced}$ means the volume, in barrels, of crude oil produced using the innovative method;

V_{Innov} means the volume, in barrels, of crude oil produced using the innovative method and delivered to California refineries for processing. If the crude produced using the innovative method and delivered to California refineries is part of a blend, then V_{Innov} is the volume of blend delivered to California refineries multiplied times the volume fraction of the crude within the blend that was produced using the innovative method.

$$C = 1.0 \times 10^{-6} \frac{MT}{gCO_2e}$$

$E_{electricity}$ means the overall electricity consumption to produce the crude, in kW-hr;

f_{renew} means the fraction of consumed electricity that is produced using qualifying solar or wind power;

ΔCI_{Innov} means the reduction in carbon intensity (a positive value), in gCO_2e/MJ_{crude}, associated with crude oil production with the innovative method as compared to crude oil production by a baseline process without the method (hereafter referred to as the comparison baseline method); and

E_{Innov} means the energy density (lower heating value), in MJ/barrel, for the crude oil produced with the innovative method.

(2) *Application and Data Submittal*. Unless otherwise noted, an application for an innovative method shall comply with the requirements below:

(A) An applicant that submits any information or documentation in support of a proposed innovative method must include with the application a written statement clearly showing that the applicant understands and agrees to the following:

1. That all information in the application not identified as confidential business information is subject to public disclosure pursuant to California Code of Regulations, title 17, sections 91000 through 91022 and the California Public Records Act (Government Code §§ 6250 et seq.), and that information claimed by the applicant to be confidential might later be disclosed under section 91022 if the state board determines the information is subject to disclosure.

2. That the crude oil producer must register under section 95483.1 as an opt-in regulated party to receive LCFS credit for an innovative method, and that if the crude oil producer does not register as an opt-in regulated party, credits from an approved innovative method may be claimed by California refinery(ies) that purchase crude produced from the innovative method.

(B) An application must contain the following summary material:

1. A complete description of the innovative method and how emissions are reduced;

2. An engineering drawing(s) or process flow diagram(s) that illustrates the innovative method and clearly identifies the system boundaries, relevant process equipment, mass flows, and energy flows necessary to calculate the innovative method credits;
3. A map including global positioning system coordinates for the facilities described in section 95489(d)(2)(B)2.; and
4. A preliminary estimate of the potential innovative method credit, calculated as required in section 95489(d)(1)(F), including descriptions and copies of production and operational data or other technical documentation utilized in support of the calculation.

(C) An application, except for solar-generated steam (~~65~~55 percent steam quality or greater), wind-based electricity, or solar-based electricity, shall include a detailed description of the innovative method and its comparison baseline method. The description of innovative and comparison baseline methods can be limited to those portions of the crude production process affected by the innovative method. The description of the innovative method and its comparison baseline method must include each of the following, to the extent each is applicable to the innovative method:

1. Schematic flow charts that identify the system boundaries used for the purposes of performing the life cycle analyses on the proposed innovative method and the comparison baseline method. Each piece of equipment or stream appearing on the process flow diagrams shall be clearly identified and shall include data on its energy and materials balance. The system boundary shall be clearly shown in the schematic.

2. A description of all material and energy inputs entering the system boundaries, including their points of origination, modes of transportation, transportation distances, means of storage, and all processing to which material inputs are subject.

3. A description of all material and energy products, co-products, byproducts, and waste products leaving the system boundaries, including their respective destinations, transportation modes, and transportation distances.

4. A description of all facilities within the system boundaries involved in the production of the crude oil and other byproducts, co-products, and waste products.

5. A description of all combustion and electricity-powered equipment within the system boundaries, including their respective capacities, sizes, or rated power, fuel utilization type, fuel shares, energy efficiency (lower heating value basis), and proposed use.

6. A description of the thermal and electrical energy production that occurs within the system boundaries, including the respective capacities, sizes, or rated power, fuel utilization type, fuel shares, energy efficiency (lower heating value basis), and proposed use.

7. A description of all sources of flared, vented, and fugitive emissions within the system boundaries, including the compositions of the flared, vented, and fugitive emission streams leaving the system boundaries.

(D) An application, except for solar-generated steam (~~65~~55 percent steam quality or greater), wind-based electricity, or solar-based electricity shall include descriptions of the life cycle assessments (LCAs) performed on the proposed innovative method and its comparison baseline method using the ARB OPGEE model or an alternative model or LCA methodology approved by the Executive Officer. Electronic copies of the models and calculations shall be provided with the application. The descriptions of the life cycle assessment results must include each of the following:

1. Detailed information on the energy consumed, the greenhouse gas emissions generated for the innovative method and the comparison baseline method;

2. Documentation of all non-default model input values used in the emissions calculation process. If values for any significant production parameters are unknown, the application shall so state and model default values shall be used for these parameters in the analysis;

3. Detailed description of all supporting calculations that were performed outside of the model; and

4. Documentation of all modifications other than those covered by subsection 2., above, made to the model. This discussion shall include sufficient specific detail to enable the Executive Officer to replicate all such modifications and, in combination with the inputs and supporting calculations

identified in subsections 2. and 3., above, replicate the carbon intensity results reported in the application.

(E) An application shall include a list of references covering all information sources used in the preparation of the life cycle analysis and calculation of innovative method credit. All reference citations in the application shall include in-text parentheticals stating the author's last name and date of publication. All in-text parenthetical citations shall correspond to complete publication information provided in the list of references, and complete publication information 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 web site was last visited.

(F) An application shall include 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 actual and/or intended long-term, steady-state operation of the innovative method described in the application packet. The transmittal letter shall be the original copy, be on company letterhead, be signed by an officer of the applicant with authority to attest to the veracity of the information in the application and to sign on behalf of the applicant, and be from the applicant and not from an entity representing the applicant (such as a consultant or legal counsel).

(G) All documents (including spreadsheets and other items not in a standard document format) that are claimed to 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 such documents must also be submitted. The redacted versions must be approved by the applicant for posting to a public LCFS web site. Specific redactions must be replaced with the phrase "Confidential business information has been deleted by the applicant." This phrase must be displayed clearly and prominently wherever CBI has been redacted. If the applicant claims that information it submits is confidential, it must also provide contact information required in section 91011.

(H) An application, supporting documents, and all other relevant data or calculation or other documentation, except for the transmittal letter described in section 95489(d)(2)(F), shall be submitted

electronically such as via e-mail or an online-based interface unless the Executive Officer has approved or requested in writing another submission format.

(3) *Application Approval Process.* The application must be approved by the Executive Officer before the crude oil producer or purchasing refinery may generate credit for the innovative method.

(A) 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:

1. The application is complete, or

2. The application is incomplete, in which case the Executive Officer will identify which requirements of section 95489(d) have not been met.

a. The applicant may submit additional information to correct deficiencies identified by the Executive Officer.

b. If the applicant is unable to achieve a complete application within 180 days of the Executive Officer's receipt of the original application, the application will be denied on that basis, and the applicant will be informed in writing.

(B) After accepting an application as complete, the Executive Officer will post the application at http://www.arb.ca.gov/fuels/lcfs/lcfs.htm. Public comments will be accepted for 10 days following the date on which the application was posted. Only comments related to potential factual or methodological errors may be considered. The Executive Officer will forward to the applicant all comments identifying potential factual or methodological errors. Within 30 days, the applicant shall either submit revisions to its application to the Executive Officer, or submit a detailed written response to the Executive Officer explaining why no revisions are necessary.

(C) The Executive Officer shall not approve an application if the Executive Officer determines, based upon the information submitted in the application and any other available information, that:

1. The proposed crude production method is not an innovative method, as that term is defined in section 95489(d)(1).

2. Based upon the application information submitted pursuant to this section, the applicant's greenhouse gas emissions calculations cannot be replicated using the ARB OPGEE model or alternative model or LCA methodology approved by the Executive Officer.

(D) As part of any action approving an application, the Executive Officer may prescribe conditions of the approval that contain special limitations, recordkeeping and reporting requirements, and operational conditions that the Executive Officer determines should apply to the innovative method. If the Executive Officer determines the application will not be approved, and the applicant will be notified in writing and the basis for the disapproval shall be identified.

(4) *Recordkeeping.* Each applicant that receives approval for an innovative method must maintain records identifying each facility at which it produces crude oil for sale in California under the approved innovative method. For each such facility, the applicant must maintain records for at least five years showing:

(A) The quarterly volume of crude oil produced using the approved innovative method and the crude name(s) under which it is marketed. If the crude oil produced with an approved innovative method is marketed as part of a crude blend, the crude oil producer must also maintain, for at least five years, quarterly records identifying the name of the blend and the volume fraction that the crude produced with the innovative method contributes to the blend.

(B) Any additional records that the Executive Officer requires to be kept in pursuant to section 95489(d)(3)(D), and records that demonstrate compliance with all special limitations and operating conditions specified pursuant to section 95489(d)(3)(D).

These records shall be submitted to the Executive Officer within 20 days of a written request received from the Executive Officer or his/her designee, provided the request is made before the expiration of the period during which the records are required to be retained.

(5) *Credits for Producing Crude Oil Using Innovative Methods*. Within 30 days of receiving quarterly reports from California refineries detailing crude names and volumes supplied to the refineries during the previous calendar quarter and any records requested of the applicant under section 95489(d)(4), the Executive Officer will determine the number of

credits to be issued to the crude oil producer or purchasing refinery for the innovative method.

(e) *Low-Complexity/Low-Energy-Use Refinery Credit*. A refinery may receive credit for being a low-complexity- and low-energy-use refinery.

(1) To be eligible for the credit ~~and deficit~~ calculation~~s~~ in section 95489(e)(3) and the refinery-specific incremental deficit calculation in section 95489(e)(4), a Low-Complexity/Low-Energy-Use Refinery must meet the criteria in section 95481(a)(5~~7~~4) using the following equations:

(A) Modified Nelson Complexity Score

$$Modified\ Nelson\ Complexity\ Score = \sum_{i}^{n} (index_i) \left(\frac{Capacity_i}{Capacity_{dist}} \right)$$

where:

$index_i$ is the 2012 Nelson Complexity Index listed in Table 9;

$Capacity_i$ is the capacity of each unit listed in Table 9 in barrels per day;

$Capacity_{dist}$ is the capacity of the distillation unit in barrels per day;

i is the process unit; and

n is the total number of process units.

Table 9. Nelson Complexity Indices.

Process Unit	***Index Value***
Vacuum Distillation	1.30
Thermal Processes	2.75
Delayed and Fluid Coking	7.50
Catalytic Cracking	6.00
Catalytic Reforming	5.00
Catalytic Hydrocracking	8.00
Catalytic Hydrorefining/Hydrotreating	2.50

Process Unit	***Index Value***
Alkylation	10.00
Polymerization	10.00
Aromatics	20.00
Isomerization	3.00
Oxygenates	10.00
Hydrogen	1.00
Sulfur Extraction	240.00

(B) Annual Energy Use

$$Annual\ Energy\ Use\ (in\ MMBtu) = fuel\ use + electricity + thermal$$

where:

$fuel\ use$ is the MMBtu of all fuel combusted during the compliance period;

$electricity$ is the imported electricity minus exported electricity per compliance period converted to MMBtu by using 3.142 MMBtu/MWh; and

$thermal$ is the imported thermal energy minus exported thermal energy per compliance period in MMBtu.

(2) In addition to other reporting requirements, a regulated party that is including adjustments or credits for a Low-Complexity/Low-Energy-Use Refinery must also report the following information for that refinery:

(A) The volume of CARBOB and diesel produced from crude oil;

(B) The volume of CARBOB and diesel produced from transmix;

(C) The volume of CARBOB and diesel produced from Petroleum ~~i~~Intermediate feedstocks; and

(D) The volume of CARBOB and diesel purchased for blending.

(3) Credits ~~and deficits~~ for a low-complexity/low-energy-use refinery must be calculated in the LCFS Reporting Tool using the following equations:

(A) *Carbon Intensity Adjustment.* For volumes reported in section 95489(e)(2)(A) a non-transferable credit of 5.0 gCO_2e/MJ will be generated.~~:~~

$$\cancel{CI_{LC-LE}^{XD} = CI_{Reported}^{XD} - Adjustment}$$

~~where:~~

~~$CI_{Reported}^{XD}$ is the carbon intensity listed in Table 5 for CARBOB and Table 6 for diesel;~~

~~$Adjustment$ is the value listed in Table 10.~~

~~**Table 10. Adjustment for CARBOB and Diesel.**~~

~~Volume Reported~~	~~Adjustment (gCO_2e/MJ)~~
~~Section 95489(e)(2)(A)~~	~~5~~
~~Section 95489(e)(2)(B),(C), and (D)~~	~~0~~

(B) *Credit ~~and Deficit~~ Calculation*. For CARBOB and diesel volumes reported in section 95489(e)(2)(A):

$$\cancel{Credits_{LC-LE}^{XD} | Deficits_{LC-LE}^{XD} = (CI_{Standard}^{XD} - CI_{LC-LE}^{XD}) \times E^{XD} \times C}$$
$$Credits_{LC-LE}^{XD} = 5\ gCO2e/MJ \times VF^{XD} \times E^{XD} \times C$$

where:

~~$CI_{Standard}^{XD}$ is the carbon intensity listed in Table 5 for CARBOB and Table 6 for diesel;~~

~~CI_{LC-LE}^{XD} is the carbon intensity pursuant to section 95489(e)(3)(A);~~
$Credits_{LC-LE}^{XD}$ is the amount of LCFS credits generated (a zero or positive value), in metric tons, by a fuel or blendstock under the average carbon intensity requirement for gasoline (XD = "gasoline") or diesel (XD = "diesel");

VF^{XD} means the volume fraction of CARBOB (XD = "CARBOB") or diesel (XD = "diesel") fuel that is derived from crude oil supplied to the Low-Complexity/Low-Energy-Use refinery. VF^{XD} is calculated by dividing the volume of CARBOB or diesel reported for section 95489(e)(2)(A) by the total volume of CARBOB or diesel reported for sections 95489(e)(2)(A) through (D);

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 3, either produced in California or imported into California during a specific calendar year and sold, supplied, or offered for sale in California; and

~~C is the conversion factor set forth in section 95486(b)(1).~~

$$C = 1.0 \times 10^{-6} \frac{MT}{gCO_2e}$$

(C) Credits created pursuant to section 95489(e) may not be sold or transferred to any other party.

(4) Low-complexity/low-energy-use refineries may elect to use refinery-specific incremental deficit calculations as provided in this section 95489(e)(4) in lieu of the incremental deficit calculation specified in section 95489(b).

(A) Refinery-specific incremental deficit calculation is subject to both of the following restrictions:

1. An authorized officer of the operator of a low-complexity/low-energy-use refinery must notify the Executive Officer of the operator's intent to use a refinery-specific incremental deficit calculation by delivering a signed written statement to the Executive Officer no later than January 31, 2016. This notification must include a detailed calculation of the Refinery Baseline Crude Average carbon intensity per section 95489(e)(4)(D).

2. The decision to elect to use a refinery-specific incremental deficit calculation is not reversible, and use of the calculation will be mandatory in 2016 and for all future compliance periods.

(B) Only those volumes of CARBOB and diesel fuel produced from crude oil as reported pursuant to section 95489(e)(2)(A) are eligible for refinery-specific incremental deficit calculation. Those volumes of CARBOB and diesel fuel reported pursuant to sections 95489(e)(2)(B) through (D) must be assessed the incremental deficit as specified in section 95489(b). The total incremental deficit for the low-complexity/low-energy-use refinery is calculated as follows:

If $\cancel{CI_{20XXCrudeAve} > CI_{BaselineCrudeAve}}$
$CI_{20XXCrudeAve} > CI_{BaselineCrudeAve} + 0.10$ and
$\cancel{CI^{LC-LE}_{20XXCrudeAve} > CI^{LC-LE}_{BaselineCrudeAve}}$ $CI^{LC-LE}_{20XXCrudeAve} >$
$CI^{LC-LE}_{BaselineCrudeAve} + 0.10$ then:

$$\cancel{Deficits^{XD}_{Incr20XX} = \left[(CI_{BaselineCrudeAve} - CI_{20XXCrudeAve}) \times (1 - VF) + (CI^{LC-LE}_{BaselineCrudeAve} - CI^{LC-LE}_{20XXCrudeAve}) \times VF\right] \times E^{XD} \times C}$$

$$Deficits^{XD}_{Incr20XX} = \left[(CI_{BaselineCrudeAve} - CI_{20XXCrudeAve}) \times (1 - VF^{XD}) + (CI^{LC-LE}_{BaselineCrudeAve} - CI^{LC-LE}_{20XXCrudeAve}) \times VF^{XD}\right] \times E^{XD} \times C$$

If $\cancel{CI_{20XXCrudeAve} > CI_{BaselineCrudeAve}}$
$CI_{20XXCrudeAve} > CI_{BaselineCrudeAve} + 0.10$ and
$\cancel{CI^{LC-LE}_{20XXCrudeAve} \leq CI^{LC-LE}_{BaselineCrudeAve}}$ $CI^{LC-LE}_{20XXCrudeAve} \leq$
$CI^{LC-LE}_{BaselineCrudeAve} + 0.10$ then:

$$\cancel{Deficits^{XD}_{Incr20XX} = (CI_{BaselineCrudeAve} - CI_{20XXCrudeAve}) \times (1 - VF) \times E^{XD} \times C}$$

$$Deficits^{XD}_{Incr20XX} = (CI_{BaselineCrudeAve} - CI_{20XXCrudeAve}) \times (1 - VF^{XD}) \times E^{XD} \times C$$

If $\cancel{CI_{20XXCrudeAve} \leq CI_{BaselineCrudeAve}}$
$CI_{20XXCrudeAve} \leq CI_{BaselineCrudeAve} + 0.10$ and
$\cancel{CI^{LC-LE}_{20XXCrudeAve} > CI^{LC-LE}_{BaselineCrudeAve}}$ $CI^{LC-LE}_{20XXCrudeAve} >$
$CI^{LC-LE}_{BaselineCrudeAve} + 0.10$ then:

$$\cancel{Deficits^{XD}_{Incr20XX} = (CI^{LC-LE}_{BaselineCrudeAve} - CI^{LC-LE}_{20XXCrudeAve}) \times VF \times E^{XD} \times C}$$

$$Deficits^{XD}_{Incr20XX} = (CI^{LC-LE}_{BaselineCrudeAve} - CI^{LC-LE}_{20XXCrudeAve}) \times VF^{XD} \times E^{XD} \times C$$

If $\cancel{CI_{20XXCrudeAve} \leq CI_{BaselineCrudeAve}}$
$CI_{20XXCrudeAve} \leq CI_{BaselineCrudeAve} + 0.10$ and
$\cancel{CI^{LC-LE}_{20XXCrudeAve} \leq CI^{LC-LE}_{BaselineCrudeAve}}$ $CI^{LC-LE}_{20XXCrudeAve} \leq$
$CI^{LC-LE}_{BaselineCrudeAve} + 0.10$ then:

$$Deficits^{XD}_{Incr20XX} = 0$$

where:

$Deficits_{Incr20XX}^{XD}$ means the amount of LCFS incremental deficits incurred (a negative value), in metric tons, by the volume of CARBOB (XD = "CARBOB") and diesel (XD = "diesel") that is derived from petroleum feedstock and is either produced at or supplied to the low-complexity/low-energy-use refinery during a specific calendar year;

$CI_{20XXCrudeAve}$ has the same meaning as specified in section 95489(b);

$CI_{BaselineCrudeAve}$ has the same meaning as specified in section 95489(b);

$CI_{20XXCrudeAve}^{LC-LE}$ is the Three-year Refinery Crude Average carbon-intensity value, in gCO_2e/MJ, attributed to the production and transport of the crude oil supplied as petroleum feedstock to the low-complexity/low-energy-use refinery during specified calendar years. $CI_{2015CrudeAve}^{LC-LE}$ will be calculated using data for crude oil supplied to the low-complexity/low-energy-use refinery during the calendar year 2015. $CI_{2016CrudeAve}^{LC-LE}$ will be calculated using data for crude oil supplied to the low-complexity/low-energy-use refinery during the calendar years 2015 and 2016. $CI_{2017CrudeAve}^{LC-LE}$ will be calculated using data for crude oil supplied to the low-complexity/low-energy-use refinery during the calendar years 2015, 2016, and 2017. All subsequent updates to $CI_{20XXCrudeAve}^{LC-LE}$ will be calculated using data for crude oil supplied to the low-complexity/low-energy-use refinery during the most recent three calendar years;

$CI_{BaselineCrudeAve}^{LC-LE}$ is the Refinery Baseline Crude Average carbon-intensity value, in gCO_2e/MJ, attributed to the production and transport of the crude oil supplied as petroleum feedstock to the low-complexity/low-energy-use refinery during the baseline calendar year, 2010. The Baseline Crude Average carbon intensity value is calculated using data for crude oil supplied to the low-complexity/low-energy-use refinery during the baseline calendar year, 2010;

VF^{XD} ~~VF~~ means the volume fraction of CARBOB (XD = "CARBOB") or~~and~~ diesel (XD = "diesel") fuel that is derived from crude oil supplied to the Low-Complexity/Low-Energy-Use refinery. VF^{XD} is calculated by dividing the volume of CARBOB or diesel reported for section 95489(e)(2)(A) by the total volume of CARBOB or diesel reported for sections 95489(e)(2)(A) through (D);

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 3, either produced in California or imported into California during a specific calendar year and sold, supplied, or offered for sale in California.

$C = 1.0 \times 10^{-6} \frac{MT}{gCO_2e}$.

(C) Process for calculating the Three-year Refinery Crude Average carbon intensity value.

1. The Three-year Refinery Crude Average carbon intensity value will be calculated using a volume-weighted average of crude carbon intensity values. Volumes for crudes will be the total volumes reported by the low-complexity/low-energy-use refinery in the Annual Compliance Report(s) for the calendar year(s). Crude carbon intensity values are those listed in Table 8. For crude names not listed, ~~the~~a default carbon intensity value ~~from Table 8~~equal to the Refinery Baseline Crude Average carbon intensity will be used until the crude name and carbon intensity value is added to Table 8 as described in section 95489(c)(3)(C).

2. Within 15 days of receiving the Annual Compliance report for the refinery, the Executive Officer shall post the Three-year Refinery Crude Average carbon intensity calculation at the LCFS web site (http://www.arb.ca.gov/fuels/lcfs/lcfs.htm) for public comment, deleting material that constitutes confidential business information from the posted calculation. Written comments shall be accepted for 15 days following the date on which the analysis was posted. Only comments related to potential factual or methodological errors in the posted ~~Annual~~Three-year Refinery Crude Average carbon intensity value may be considered. The Executive Officer shall evaluate the comments received and, if the Executive Officer deems it necessary, may request in writing additional information or clarification from the commenters. Commenters shall be provided 10 days to respond to these requests. The Executive Officer shall post the final Three-year Refinery Crude Average carbon intensity value at the LCFS web site within 15 days of completion of the comment period, if no comments are received. If comments are received, the Executive Officer shall post the final ~~Annual~~Three-year Refinery carbon intensity value within 30 days of completion of the comment period or within 25

days of the latest request by the Executive Officer for additional information or clarification from a commenter, whichever is later.

(D) Process for calculating the Refinery Baseline Crude Average carbon intensity value.

1. The Refinery Baseline Crude Average carbon intensity value will be calculated using a volume-weighted average of crude carbon intensity values. Volumes for crudes will be the total volumes supplied to the low-complexity/low-energy-use refinery during the baseline year 2010. Crude carbon intensity values are those listed in Table 10~~1~~.

2. The Executive Officer shall evaluate the calculation received from the low complexity-low energy use refinery and, if the Executive Officer deems it necessary, may request in writing additional information or clarification. Upon resolution of all issues associated with the calculation, the Executive Officer shall post the final Refinery Baseline Crude Average carbon intensity value at the LCFS web site, deleting material that constitutes confidential business information from the posted calculation.

Table 10~~1~~. Carbon ~~i~~Intensity ~~v~~Values for ~~c~~Crudes ~~s~~Supplied during 2010.

Country/State	**Crude Name**	**2010 CI (gCO_2/MJ)**
Angola	Dalia	9.44
	Girassol	9.95
	Greater Plutonio	9.51
Argentina	Canadon Seco	9.14
	Escalante	9.16
	Hydra	8.01
Australia	Pyrenees	5.82
Brazil	Albacora Leste	6.50
	Frade	6.11
	Marlim	7.58
	Marlim Sul	8.40
	Ostra	6.60
	Polvo	6.43
Cameroon	Lokele	24.46
Canada	Albian Heavy Synthetic	~~20.54~~19.92
	Cold Lake	~~19.64~~18.40

	Federated	7.62
	Koch Alberta	7.62
	Mixed Sweet	7.62
	Suncor Synthetic	~~23.78~~23.38
	Syncrude Synthetic	21.44
Colombia	Castilla	9.65
	Vasconia	9.39
Ecuador	Napo	9.82
	Oriente	11.15
Iraq	Basra Light	13.21
Neutral Zone	Eocene	7.27
	Ratawi	9.03
Nigeria	Bonny	17.58
Oman	Oman	~~12.75~~12.38
Peru	Loreto	8.62
	Mayna	10.19
Russia	ESPO	13.43
Saudi Arabia	Arab Extra Light	9.16
	Arab Light	9.04
Trinidad	Calypso	7.01
Venezuela	Boscan	10.09
	Petrozuata	23.25
	Zuata	23.22
US Alaska	ANS	11.53
US North Dakota	Bakken	8.71
US California	Aliso Canyon	2.69
	Ant Hill	23.59
	Antelope Hills	3.05
	Antelope Hills, North	~~13.94~~12.83
	Arroyo Grande	~~30.58~~27.60
	Asphalto	7.00
	Bandini	7.96
	Bardsdale	5.35
	Barham Ranch	2.60
	Belgian Anticline	3.20
	Bellevue	9.02
	Bellevue, West	9.17
	Belmont, Offshore	3.55
	Belridge, North	~~4.70~~4.58
	Belridge, South	~~15.22~~13.58
	Beverly Hills	4.42

	Big Mountain	2.85
	Brea-Olinda	3.15
	Buena Vista	~~7.26~~7.07
	Cabrillo	2.44
	Canal	4.42
	Canfield Ranch	3.82
	Caneros Creek	3.14
	Cascade	2.11
	Casmalia	8.02
	Castaic Hills	3.06
	Cat Canyon	4.00
	Cheviot Hills	3.23
	Cienaga Canyon	4.26
	Coalinga	~~31.40~~26.62
	Coalinga, East	17.78
	Coles Levee, N	4.50
	Coles Levee, S	2.67
	Coyote, East	5.88
	Cuyama, South	12.36
	Cymric	~~22.62~~20.30
	Deer Creek	10.17
	Del Valle	4.56
	Devils Den	5.58
	Edison	~~9.28~~8.83
	El Segundo	3.22
	Elk Hills	5.20
	Elwood, S., Offshore	4.29
	Fruitvale	~~11.17~~10.47
	Greeley	8.52
	Hasley Canyon	2.14
	Helm	3.22
	Holser	3.21
	Honor Rancho	3.51
	Huntington Beach	5.37
	Hyperion	1.93
	Inglewood	9.36
	Jacalitos	2.54
	Jasmin	~~16.07~~13.50
	Kern Front	~~28.57~~23.74
	Kern River	~~13.46~~10.10
	Kettleman Middle Dome	3.92

	Kettleman North Dome	4.93
	Landslide	11.14
	Las Cienegas	4.80
	Livermore	2.55
	Lompoc	33.31
	Long Beach	6.48
	Long Beach Airport	4.10
	Los Angeles Downtown	4.39
	Los Angeles, East	8.81
	Lost Hills	~~11.71~~10.75
	Lost Hills, Northwest	4.58
	Lynch Canyon	~~7.83~~7.30
	McDonald Anticline	5.10
	McKittrick	~~20.12~~16.77
	Midway-Sunset	~~26.07~~22.30
	Montalvo, West	2.83
	Montebello	11.64
	Monument Junction	3.56
	Mount Poso	~~15.48~~14.02
	Mountain View	~~5.01~~4.88
	Newhall-Potrero	2.80
	Newport, West	4.00
	Oak Canyon	3.60
	Oak Park	2.27
	Oakridge	2.75
	Oat Mountain	2.11
	Ojai	2.78
	Olive	2.02
	Orcutt	~~12.43~~11.91
	Oxnard	~~16.99~~15.61
	Paloma	3.55
	Placerita	~~48.22~~35.08
	Playa Del Rey	5.60
	Pleito	3.56
	Poso Creek	~~30.04~~25.92
	Pyramid Hills	2.96
	Railroad Gap	5.17
	Raisin City	8.05
	Ramona	3.30
	Richfield	3.97
	Rincon	3.60

	Rio Bravo	5.15
	Rio Viejo	2.86
	Riverdale	3.22
	Rose	2.38
	Rosecrans	5.55
	Rosecrans, South	3.32
	Rosedale	7.41
	Rosedale Ranch	8.86
	Round Mountain	~~31.06~~29.16
	Russell Ranch	7.92
	Salt Lake	2.56
	Salt Lake, South	3.70
	San Ardo	~~33.16~~28.46
	San Miguelito	4.78
	San Vicente	2.40
	Sansinena	2.82
	Santa Clara Avenue	3.48
	Santa Fe Springs	12.46
	Santa Maria Valley	5.06
	Santa Susana	2.86
	Sargent	4.96
	Saticoy	3.45
	Sawtelle	3.00
	Seal Beach	4.98
	Semitropic	3.94
	Sespe	2.84
	Shafter, North	2.77
	Shiells Canyon	3.15
	South Mountain	3.15
	Stockdale	2.12
	Strand	2.56
	Tapia	~~5.62~~5.38
	Tapo Canyon, South	2.94
	Tejon	5.86
	Tejon Hills	6.46
	Tejon, North	3.28
	Temescal	3.00
	Ten Section	6.61
	Timber Canyon	3.12
	Torrance	4.83
	Torrey Canyon	2.82

	Union Avenue	2.05
	Ventura	4.69
	Wheeler Ridge	4.30
	White Wolf	1.83
	Whittier	2.46
	Wilmington	6.82
	Yowlumne	11.96
	Zaca	7.99
US California Sub-Field	Edison Light	5.05
	South Belridge Light	3.77
US Federal OCS	Beta	1.59
	Carpinteria	2.72
	Dos Cuadras	3.92
	Hondo	6.05
	Hueneme	2.80
	Pescado	4.90
	Point Arguello	14.59
	Point Pedernales	6.51
	Sacate	3.47
	Santa Clara	2.36
	Sockeye	6.86

(f) *Refinery Investment Credit Pilot Program*. A refinery may receive credit for reducing greenhouse gas emissions from its facility. Any such credits shall be based on fuel volumes sold, supplied, or offered for sale in California as set forth below.

(1) *General Requirements*.

(A) The application for a refinery investment credit~~greenhouse gas emissions reduction modification~~ must be submitted during or after the year 2016~~5~~ and must be approved pursuant to this section before the refinery can receive credit. ~~No~~A project is eligible if the authority-to-construct permit was approved after~~applicant applied to any governmental entity for an authority-to-construct permit relating to the project prior to~~ January 1, 2016~~5~~.

(B) The refinery investment credit project~~greenhouse gas emission reduction modification~~ must occur within the boundaries of the refinery~~be either from a capital investment or from the production of CARBOB or diesel fuel that is partially derived from renewable feedstock~~.

(C) The refinery investment credit project~~greenhouse gas emission reduction modification from a capital investment~~ must achieve a carbon intensity reduction from the comparison baseline of at least 0.1 gCO_2e/MJ.~~ The refinery greenhouse gas emission reduction modification from the production of CARBOB or diesel fuel that is partially derived from renewable feedstock must annually replace a minimum of 10 percent of the fossil based feedstock.~~

(D) The applicant~~refinery greenhouse gas emission reduction modification~~ must demonstrate that any net increases in criteria air pollutant or toxic air contaminant emissions from the refinery investment credit project are mitigated in accordance with all local, state, and national environmental and health and safety regulations.~~ not result in a net increase of criteria air pollutant or toxic air contaminant emissions, whether from the refinery itself or from offsite sources of these pollutants.~~

(E) Projects whose primary objectives are refinery equipment shutdowns, reductions in refinery or equipment throughput and refinery maintenance shall not be eligible for section 95489(f).

(F) Credits created pursuant to section 95489(f) may not be sold or transferred to any other party.

(G) Credits generated pursuant to section 95489(f) are subject to limitations set forth in section 95485(d).

(2) *Calculation of Credits.*

(A) Determine total refinery emissions pre-project and post-project as follows:

$$CO_2e_i = (CO_2) + (CH_4)(25) + (N_2O)(298) + electricity + thermal + hydrogen$$

where:

CO_2e_i is the total emissions for data year i in metric tons;

CO_2 is as reported in CCR, title 17, sections 95100 through 95158;

CH_4 is as reported in CCR, title 17, sections 95100 through 95158;

N_2O is as reported in CCR, title 17, sections 95100 through 95158;

$electricity$ is imported electricity minus exported electricity per year converted to tons CO_2e by using 0.431 tons CO_2e/MWh;

$thermal$ is imported thermal energy minus exported thermal energy per year converted to tons CO_2e by using 0.0663 tons CO_2e/MMBtu;

$hydrogen$ is purchased hydrogen multiplied by 10.8 metric tons/ton hydrogen; and

i is the data year pre-project completion or i is the first full data year post-project completion.

(B) Determine the amount of emissions apportioned to each refinery product pre-project and post-project as follows:

$$AE_i^{XD} = \left(\frac{Volume_i^{XD}}{Volume_i^{Total}}\right)(CO_2e_i)$$

where:

AE_i^{XD} is the amount of emissions apportioned to each product XD output of refinery for data year i in metric tons of either CARBOB (XD = "CARBOB") or diesel (XD = "diesel");

CO_2e_i is the total emissions for data year i in metric tons;

i is the data year prior to project completion or i is the first full data year after the project is completed;

$Volume_i^{XD}$ is the volume of individual product output for data year i in barrels (bbl) of either CARBOB (XD = "CARBOB") or diesel (XD = "diesel"); and

$Volume_i^{Total}$ is the total volume of CARBOB and diesel for data year i in bbl.

(C) Determine the the total energy for each refinery product output pre-project and post-project as follows:

$$EC_i^{XD} = \left(Volume_i^{XD}\right)(D^{XD})\left(42\ (\frac{gal}{bbl})\right)$$

where:

EC_i^{XD} is the total energy for each product output for data year i in MJ of either CARBOB (XD = "CARBOB") or diesel (XD = "diesel");

i is the data year prior to project completion or i is the first full data year after the project is completed;

$Volume_i^{XD}$ is the volume of individual product output in barrels (bbl) of either CARBOB (XD = "CARBOB") or diesel (XD = "diesel"); and

D^{XD} is the energy density listed in Table 3 in MJ/gal of either CARBOB (XD = "CARBOB") or diesel (XD = "diesel").

(D) Determine the carbon intensity of each refinery product pre-project post-project as follows:

$$CI_i^{XD} = \left[\frac{AE_i^{XD}}{EC_i^{XD}}\right]\left(\frac{10^6\ g}{metric\ tons}\right)$$

where:

CI_i^{XD} is the carbon intensity of each refinery product for data year i in gCO_2e/MJ of either CARBOB (XD = "CARBOB") or diesel (XD = "diesel");

AE_i^{XD} = amount of emissions apportioned to each product XD output of refinery in metric tons for data year i;

EC_i^{XD} is the total energy for each product output for data year i in MJ of either CARBOB (XD = "CARBOB") or diesel (XD = "diesel"); and

i is the data year prior to project completion or i is the first full data year after the project is completed.

(E) Determine the reduction in carbon intensity associated with the refinery investment credit project as compared to the refinery without the refinery investment credit project as follows:

$$\Delta CI_{RIC}^{XD} = CI_{pre}^{XD} - CI_{post}^{XD}$$

where:

ΔCI_{RIC}^{XD} is the reduction in carbon intensity (a positive value), in gCO_2e/MJ, associated with the refinery investment credit project as

compared to the refinery without the refinery investment credit project;

CI_{pre}^{XD} is the carbon intensity of each refinery petroleum product pre-project in gCO_2e/MJ of either CARBOB (XD = "CARBOB") or diesel (XD = "diesel"); and

CI_{post}^{XD} is the carbon intensity of each refinery petroleum product post-project in gCO_2e/MJ of either CARBOB (XD = "CARBOB") or diesel (XD = "diesel").

(F) Determine the credit for the refinery investment credit project:

$$Credits_{RIC}^{XD} = (\Delta CI_{RIC}^{XD} \times D^{XD} \times V^{XD} \times C)$$

where:

$Credits_{RIC}^{XD}$ is the credit for the refinery investment credit project in metric tons;

ΔCI_{RIC}^{XD} is the reduction in carbon intensity (a positive value), in gCO_2e/MJ, associated with the refinery investment credit project as compared to the refinery without the refinery investment credit project;

D^{XD} is the energy density listed in Table 3 in MJ/gal of either CARBOB (XD = "CARBOB") or diesel (XD = "diesel");

V^{XD} is the volume of either CARBOB (XD = "CARBOB") or diesel (XD = "diesel") in gallons; and

$C = 1.0 \times 10^{-6} \frac{MT}{gCO_2e}$.

~~For CARBOB or diesel fuel that is partially derived from renewable feedstock, the calculation of credits shall be as follows:~~

$$\cancel{Credits_{RIC}^{XD} = \left((CI_{Standard}^{XD} - CI_{Renewable}^{XD}) \times E_{Renewable}^{XD} \times C\right)}$$

~~where:~~

~~$Credits_{RIC}^{XD}$ is the credit for the refinery greenhouse gas reduction modification;~~

~~$CI_{Standard}^{XD}$ is the carbon intensity of CARBOB (XD = "CARBOB") or diesel (XD = "diesel"), in gCO_2e/MJ, as set forth in section 95484(b);~~

~~$CI^{XD}_{Renewable}$ is the carbon intensity of the renewable content of the CARBOB (XD = "CARBOB") or diesel (XD = "diesel"), in gCO_2e/MJ, as determined by section 95488(c)(4)(F). The renewable content is the portion of the fuel that is derived from renewable feedstock;~~

~~$E^{XD}_{Renewable}$ is the amount of fuel energy of the renewable content within the CARBOB (XD = "CARBOB") or diesel (XD = "diesel"), in MJ; and~~

~~$C = 1.0 \times 10^{-6} \frac{MT}{gCO_2e}$;~~

~~For greenhouse gas emissions reduction that is from a capital investment, the calculation of credits shall be as follows:~~

~~$Credits^{XD}_{RIC} = (\Delta CI^{XD}_{RIC} \times E^{XD} \times C) \times M$~~

~~where:~~

~~$Credits^{XD}_{RIC}$ is the credit for the refinery greenhouse gas reduction project;~~

~~ΔCI^{XD}_{RIC} is the reduction in carbon intensity (a positive value), in gCO_2e/MJ, associated with the refinery greenhouse gas reduction project as compared to the refinery without the greenhouse gas reduction project;~~

~~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 3;~~

~~$C = 1.0 \times 10^{-6} \frac{MT}{gCO_2e}$;~~

~~M is 0.5 for CI^{XD}_{post} values above the CARBOB or Diesel refinery carbon intensity industry average as determined from Table 12; and~~

~~M is 1.0 for CI^{XD}_{post} values below the CARBOB or Diesel refinery carbon intensity industry average as determined from Table 12.~~

~~Table 12. CARBOB or Diesel Refinery Carbon Intensity Industry Average~~

~~Fuel Type~~	~~Industry Average (g CO_2e/MJ)~~
~~CARBOB~~	~~8.95~~
~~Diesel~~	~~7.61~~

~~$\Delta CI^{XD}_{RIC} = CI^{XD}_{pre} - CI^{XD}_{post}$~~

~~where:~~

~~ΔCI_{RRC}^{XD} is the reduction in carbon intensity (a positive value), in gCO_2e/MJ, associated with the refinery greenhouse gas reduction project as compared to the refinery without the greenhouse gas reduction project;~~

~~CI_{pre}^{XD} is the carbon intensity of each refinery petroleum product pre-project; and~~

~~CI_{post}^{XD} is the carbon intensity of each refinery petroleum product post-project.~~

$$\cancel{CI^{XD} = \left[\frac{AE^{XD}}{EC^{XD}}\right]\left(\frac{10^6\, g}{metric\ tons}\right)}$$

~~where:~~

~~CI^{XD} is the carbon intensity of each refinery product.~~

$$\cancel{AE^{XD} = \left(\frac{Volume^{XD}}{Volume^{Total}}\right)(CO_2e_i)}$$

~~where:~~

~~AE^{XD} = amount of emissions apportioned to each product XD output of refinery in metric tons;~~

~~CO_2e_i = total emissions for data year i in metric tons;~~

~~$Volume^{XD}$ = volume of individual product output in barrels (bbl);~~

~~$Volume^{Total}$ = total volume of output product in barrels (bbl).~~

$$\cancel{EC^{XD} = (Volume^{XD})(E^{XD})\left(42\left(\frac{gal}{bbl}\right)\right)}$$

~~where:~~

~~EC^{XD} is the total energy for each product output in MJ;~~

~~$Volume^{XD}$ is the volume of individual product output in barrels (bbl);~~

~~E^{XD} is the amount of fuel energy, in MJ/gal, determined from the energy density conversion factors in Table 3.~~

$$\cancel{CO_2e_i = (CO_2) + (CH_4)(25) + (N_2O)(298) + electricity + thermal + hydrogen}$$

~~where:~~

~~CO_2 is as reported in CCR, title 17, sections 95100 through 95158;~~

~~CH_4 is as reported in CCR, title 17, sections 95100 through 95158;~~

~~N_2O is as reported in CCR, title 17, sections 95100 through 95158;~~

~~*electricity* is imported electricity minus exported electricity per year converted to tons CO_2e by using 0.431 tons CO_2e/MWh;~~

~~*thermal* is imported thermal energy minus exported thermal energy per year converted to tons CO_2e by using 0.0663 tons CO_2e/MMBtu;~~

~~*hydrogen* is purchased hydrogen*10.8 metric tons/ton hydrogen; and~~

~~*i* is pre- or post project.~~

(3) *Application Contents and Submittal*. Unless otherwise noted, an application for refinery investment credits shall comply with the following requirements:

(A) An application must contain the following summary material:

1. A complete description of the refinery investment credit project~~greenhouse gas emissions reduction modification~~ and how emissions are reduced;

2. ~~For CARBOB or diesel fuel that is partially derived from renewable feedstock, purchase records identifying the renewable feedstock. For capital investments, a~~An engineering drawing(s) or process flow diagram(s) that illustrates the project~~investment~~ and clearly identifies the system boundaries, relevant process equipment, mass flows, and energy flows necessary to calculate the refinery investment credits; and

3. A preliminary estimate of the refinery investment credit, calculated as required in section 95489(f)(2), including descriptions and copies of production and operational data or other technical documentation utilized in support of the calculation. The application must contain process-specific data showing that the reductions are part of the transportation fuel pathway.~~; and~~

(B) An application shall include a list of references covering all information sources used in the calculation of refinery investment credit. The reference list shall, at a minimum, identify the author(s), the author's affiliation, title of the referenced document, the publisher, and the publication date. All in-text parenthetical citations shall correspond to complete publication information provided in the list of references, and provide pages cited. For internet citations, the reference shall include the universal resource locator (URL) address of the citation, as well as the date the web site was last visited.

(C) An application shall include 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 actual and/or intended long-term, steady-state operation of the refinery investment credit project ~~greenhouse gas emissions reduction modification~~ described in the application packet. The transmittal letter shall be the original copy, be on company letterhead, be signed by an officer of the applicant with authority to attest to the veracity of the information in the application and to sign on behalf of the applicant.

(D) All documents (including spreadsheets and other items not in a standard document format) that are claimed to 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 such documents must also be submitted. The redacted versions must be approved by the applicant for posting to a public LCFS web site. Specific redactions must be replaced with the phrase "Confidential business information has been deleted by the applicant." This phrase must be displayed clearly wherever CBI has been redacted. If applicant claims that information it submits is confidential, it must also provide contact information required in section 91011.

(E) An application shall include all relevant documentation identifying any changes, including decreases or increases, in criteria air pollutant or toxic air contaminant emissions based on local air permits and supporting permit documentation from the refinery investment credit project. An applicant shall include a signed transmittal letter from the applicant attesting that any net increases in emissions from the refinery investment credit project are mitigated in accordance with all local, state, and national environmental and health and safety regulations.

(F~~E~~) An applicant that submits any information or documentation in support of a proposed refinery investment credit must include a written statement clearly showing that the applicant understands and agrees that all information in the application not identified as confidential business information is subject to public disclosure pursuant to California Code of Regulations, title 17, sections 91000 through 91022 and the California Public Records Act (Government Code, §§. 6250 et seq.), and that information claimed by the applicant to be confidential might later be disclosed under section 91022 if the state board determines the information is subject to disclosure.

(G~~F~~) An application, supporting documents, and all other relevant data or calculation or other documentation, except for the transmittal letter described in section 95489(f)(3)(C), shall be submitted electronically, such as via e-mail or an online-based interface, unless the Executive Officer has approved or requested another format.

(4) *Application Approval Process*. An application must be approved by the Executive Officer before the refinery investment credit project ~~greenhouse gas emissions reduction modification~~ can generate credits under the LCFS regulation.

(A) 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:

1. The application is complete, or
2. The application is incomplete, in which case the Executive Officer will identify which requirements of section 95489(f) have not been met. The applicant may submit additional information to correct deficiencies identified by the Executive Officer. If the applicant is unable to achieve a complete application within 180 days of the Executive Officer's receipt of the original application, the application will be denied on that basis, and the applicant will be informed in writing.

(B) After accepting an application as complete, the Executive Officer will post the application at http://www.arb.ca.gov/fuels/lcfs/lcfs.htm. Public comments will be accepted for 10 calendar days following the date on which the application was posted. Only comments related to potential factual or methodological errors may be considered. The Executive Officer will forward to the applicant all comments identifying potential factual or methodological errors. Within 30 days, the applicant shall either submit revisions to its

application to the Executive Officer, or submit a detailed written response to the Executive Officer explaining why no revisions are necessary.

(C) If the Executive Officer finds that an application meets the requirements set forth in section 95489(f), the Executive Officer will take final action to approve the refinery investment credit project. ~~greenhouse gas emissions reduction modification.~~ The Executive Officer may prescribe conditions of approval that contain special limitations, recordkeeping and reporting requirements, and operational conditions that the Executive Officer determines should apply to the project~~modification~~. If the Executive Officer finds that an application does not meet the requirements of section 95489(f), the application will not be approved, and the applicant will be notified in writing, and the basis for the disapproval shall be identified.

(5) *Credit Review*. Each refinery that has an approved refinery investment credit must solicit Executive Officer review and re-approval of the credit every three years.

(A) Refineries shall submit process and emissions data to the Executive Officer for review and approval that confirm the greenhouse gas emission reductions estimated in the original submittal pursuant to the process in sections 95489(f)(3) and (4). Failure to submit data for review every three years will result in automatic revocation of the refinery investment credit henceforth.

(B) ~~For capital investment projects, w~~When the Executive Officer determines that the carbon intensity reduction from refinery investment credits has decreased ~~by 10 percent or more~~ from the original reduction, the refinery investment credit shall be adjusted to reflect the new credit henceforth. If a revised carbon intensity reduction drops below 0.1 gCO_2e/MJ compared to the refinery's baseline without the refinery investment credit~~greenhouse gas reduction~~ project, the refinery investment credit shall be canceled henceforth.

~~(C) When the Executive Officer determines that the refinery greenhouse gas emission reduction modification from the production of CARBOB or diesel fuel that is partially derived from renewable feedstock did not replace an annual minimum of 10 percent of the fossil based feedstock, or 30 percent of the fossil based feedstock in at least one year, the refinery investment credit shall be canceled.~~

(6) *Recordkeeping*. For each approved refinery investment credit project~~greenhouse gas emissions reduction modification~~, the refinery must compile and retain records pursuant to section 95491(b) showing compliance with all limitation and recordkeeping requirements identified by the Executive Officer pursuant to section 95489(f)(4)(C), above.

(g) *Renewable Hydrogen Refinery Credit Pilot Program.* A refinery may receive credit for greenhouse gas emission reductions from the production of CARBOB or diesel fuel that is partially derived from renewable hydrogen. Any such credits shall be based on fuel volumes sold, supplied, or offered for sale in California as set forth below.

(1) *General Requirements*.

(A) The application for a renewable hydrogen refinery credit must be submitted during or after the year 2016 and must be approved pursuant to this section before the refinery can receive credit.

(B) In order to receive a renewable hydrogen refinery credit, a refiner must produce CARBOB or diesel fuel that is partially derived from renewable hydrogen. The renewable hydrogen must annually replace a minimum of one percent of all fossil hydrogen in the production of CARBOB or diesel fuel.

(C) The applicant must demonstrate that any net increases in criteria air pollutant or toxic air contaminant emissions from the renewable hydrogen refinery credit project are mitigated in accordance with all local, state, and national environmental and health and safety regulations.

(D) Credits created pursuant to Section 95489(g) may not be sold or transferred to any other party.

(E) Credits generated pursuant to Section 95489(g) are subject to limitations set forth in Section 95485(d).

(2) *Calculation of Credits.*

(A) For CARBOB or diesel fuel that is partially derived from renewable hydrogen, the calculation of credits shall be as follows:

$$Credits_{RIC}^{H} = \left((CI_{Fossil}^{H} - CI_{Renewable}^{H}) \times D_{Renewable}^{H} \times V_{Renewable}^{H} \times C\right)$$

where:

$Credits^{H}_{RIC}$ is the amount of LCFS credits generated (a zero or positive value), in metric tons, by renewable hydrogen;

CI^{H}_{Fossil} is carbon intensity requirement of fossil hydrogen in gCO_2e/MJ from Table 6 for Hydrogen with the pathway identifier HYGN003;

$CI^{H}_{Renewable}$ is the carbon intensity of the renewable hydrogen in gCO_2e/MJ, as determined by section 95488(c)(4)(F);

$D^{H}_{Renewable}$ is the energy density of hydrogen listed in Table 3 in MJ/kg;

$V^{H}_{Renewable}$ is the volume of renewable hydrogen in kg; and

$C = 1.0 \times 10^{-6} \frac{MT}{gCO_2e}$.

(3) *Application Contents and Submittal*. Unless otherwise noted, an application for renewable hydrogen credits shall comply with the following requirements:

(A) An application must contain the following summary material:

1. A complete description of the production of CARBOB or diesel fuel with hydrogen and how renewable hydrogen is replacing fossil hydrogen in that process;

2. Purchase records identifying the renewable hydrogen and/or renewable feedstock used to produce the renewable hydrogen; and

3. A preliminary estimate of the renewable hydrogen refinery credit, calculated as required in section 95489(g)(2), including descriptions and copies of production and operational data or other technical documentation utilized in support of the calculation. The application must contain process-specific data showing that the reductions are part of the transportation fuel pathway.

(B) An application shall include a list of references covering all information sources used in the calculation of renewable hydrogen refinery credit project. The reference list shall, at a minimum, identify the author(s), the author's affiliation, title of the referenced document, the publisher, and the publication date. All in-text parenthetical citations shall correspond to complete publication information provided in the list of references, and provide pages

cited. For internet citations, the reference shall include the universal resource locator (URL) address of the citation, as well as the date the web site was last visited.

(C) An application shall include a signed transmittal letter from the applicant attesting under penalty of perjury under California law, to the veracity of the information in the application packet and declaring that the information submitted accurately represents the actual and/or intended long-term, steady-state operation of renewable hydrogen refinery credit project described in the application packet. The transmittal letter shall be the original copy, be on company letterhead, be signed by an officer of the applicant with authority to attest to the veracity of the information in the application and to sign on behalf of the applicant.

(D) All documents (including spreadsheets and other items not in a standard document format) that are claimed to 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 such documents must also be submitted. The redacted versions must be approved by the applicant for posting to a public LCFS web site. Specific redactions must be replaced with the phrase “Confidential business information has been deleted by the applicant.” This phrase must be displayed clearly wherever CBI has been redacted. If applicant claims that information it submits is confidential, it must also provide contact information required in section 91011.

(E) An application shall include all relevant documentation identifying any changes, including decreases or increases, in criteria air pollutant or toxic air contaminant emissions based on local air permits from the renewable hydrogen refinery credit project. An applicant shall include a signed transmittal letter from the applicant attesting that any net increases in emissions from renewable hydrogen refinery credit project are mitigated in accordance with all local, state, and national environmental and health and safety regulations.

(F) An application, supporting documents, and all other relevant data or calculation or other documentation, except for the transmittal letter described in section 95489(g)(3)(C), shall be submitted electronically, such as via e-mail or an online-based interface, unless the Executive Officer has approved or requested another format.

(4) *Application Approval Process*. An application must be approved by the Executive Officer before the renewable hydrogen refinery credit project can generate credits under the LCFS regulation.

(A) 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:

1. The application is complete, or
2. The application is incomplete, in which case the Executive Officer will identify which requirements of section 95489(g) have not been met. The applicant may submit additional information to correct deficiencies identified by the Executive Officer. If the applicant is unable to achieve a complete application within 180 days of the Executive Officer's receipt of the original application, the application will be denied on that basis, and the applicant will be informed in writing.

(B) If the Executive Officer finds that an application meets the requirements set forth in section 95489(g), the Executive Officer will take final action to approve the renewable hydrogen refinery credit project. The Executive Officer may prescribe conditions of approval that contain special limitations, recordkeeping and reporting requirements, and operational conditions that the Executive Officer determines should apply to the project. If the Executive Officer finds that an application does not meet the requirements of section 95489(g), the application will not be approved, and the applicant will be notified in writing, and the basis for the disapproval shall be identified.

(5) *Credit Review*. Each refinery that has an approved renewable hydrogen credit project must solicit Executive Officer review and re-approval of the crediting project on an annual basis.

(A) Refineries shall submit all relevant data to the Executive Officer for review and approval that confirm the renewable hydrogen replacement amount of fossil hydrogen in production of CARBOB and diesel fuel estimated in the original submittal pursuant to the process in sections 95489(g)(3) and (4). Failure to submit data for review annually will result in automatic revocation of the renewable hydrogen credit henceforth.

(B) When the Executive Officer determines that the renewable hydrogen that has replaced fossil based hydrogen for the production of CARBOB or diesel fuel has decreased from the amount estimated in the original submittal pursuant to the process

in sections ~~95849~~**95489**(g)(3) and (4), the renewable hydrogen refinery credit shall be adjusted to reflect the new credit henceforth. If the renewable hydrogen drops below the minimum threshold of one percent of the fossil hydrogen replaced with renewable hydrogen in the production CARBOB or diesel fuel, then the renewable hydrogen refinery credit shall be cancelled henceforth.

(6) *Recordkeeping*. For each approved renewable hydrogen refinery credit project, the refinery must compile and retain records pursuant to section 95491(b) showing compliance with all limitation and recordkeeping requirements identified by the Executive Officer pursuant to section 95489(g)(4)(C), above.

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, ~~43000.5, 43013~~ and 43018 Health and Safety Code; 42 U.S.C. section 7545, 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, 39515, 39516, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511 and 43000, Health and Safety Code; Section 25000.5, Public Resources Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

§ 95490. [Reserved.]~~Requirements for Multimedia Evaluation~~

~~(a) *Pre-Sale Approval Requirement.* Except as provided for in section 95490, a regulated party must not sell, supply, distribute, import, offer for sale, or offer for use in California a regulated fuel unless one of the following conditions has first been met:~~

~~(1) a multimedia evaluation for the regulated fuel has been conducted pursuant to the requirements specified in this regulation, and that evaluation has been approved by the Executive Officer; or~~

~~(2) a multimedia evaluation for the regulated fuel has been conducted, and that evaluation was approved by the Executive Officer prior to the date the Office of Administrative Law (OAL) approves the LCFS regulation.~~

~~(b) *Requirements.*~~

~~(1) The Executive Officer, or his or her designee, shall not approve a multimedia evaluation subject to this section 95490 unless the evaluation has undergone the process for review and approval specified in H&S section 43830.8, including but not limited to, receiving peer review and approval by the California Environmental Policy Council pursuant to H&S section 43830.8(d) through (g). For purposes of H&S section 43830.8(a), each Executive Officer approval of a regulated fuel for compliance with the LCFS regulation under section 95490 shall constitute compliance with the requirement in H&S section 43830.8(a) for conducting a multimedia~~

~~evaluation prior to adoption of a "regulation that establishes a specification for motor vehicle fuel."~~

~~(2) All multimedia evaluations subject to this section 95490 shall be evaluated in accordance with the California Environmental Protection Agency (Cal/EPA) guidance document entitled, *Guidance Document and Recommendations on the Types of Scientific Information Submitted by Applicants for California Fuels Environmental Multimedia Evaluations*, Chapters V, VI, and VII (June 2008), which is incorporated by reference and can be downloaded at http://www.arb.ca.gov/fuels/multimedia/080608guidance.pdf.~~

~~(c) *Exemptions.*~~

~~(1) *Negative Declaration For ARB-Adopted New Or Amended Fuel Specifications.* The requirements of this section 95490 do not apply to a regulated fuel if:~~

~~(A) the regulated fuel is subject to a proposed ARB regulation establishing a new or amending an existing fuel specification, which ARB adopts after the date OAL approves the LCFS regulation; and~~

~~(B) the California Environmental Policy Council, following an initial evaluation of the proposed regulation, conclusively determines that the regulation will not have any significant adverse impact on public health or the environment.~~

~~(2) *CaRFG, Diesel Fuel, E100, E85, CNG, LPG, and Hydrogen.* The requirements of this section 95490 do not apply to a regulated fuel if:~~

~~(A) the fuel is subject to an ARB-adopted fuel specification; and~~

~~(B) the Executive Officer does not amend that fuel specification after OAL approves the LCFS regulation.~~

~~Fuels subject to this section 95490 include CaRFG, diesel fuel, E100, E85, CNG, LPG, and hydrogen. The exemption applies only to the extent that the Executive Officer does not amend the fuel specification for any of the above fuels. When OAL approves an ARB amendment to a fuel specification identified above, the exemption shall no longer apply for that fuel.~~

~~(3) *Biomass-Based Diesel and Electricity.* The requirements of this section 95490 do not apply to a regulated fuel that:~~

~~(A) is subject to the Division of Measurement Standards' Engine Fuels Standards (Cal. Code Regs., tit. 4, §§ 4140 et seq.); but~~

~~(B) is not subject to an ARB-adopted fuel specification.~~

~~Fuels subject to this section 95490 formerly include biomass-based diesel and electricity. The exemption applies only to the extent that the Executive Officer does not adopt a fuel specification for any of the above fuels. When OAL approves an ARB-adopted fuel specification for a fuel identified above, the exemption shall no longer apply for that fuel.~~

~~NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 43000.5, 43013 and 43018 Health and Safety Code; 42 U.S.C. section 7545, 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, 39515, 39516, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516 and 43000, Health and Safety Code; Section 25000.5, Public Resources Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).~~

§ 95491. Reporting and Recordkeeping.

(a) *Reporting Requirements.*

(1) *Reporting Frequency*. A reporting party as defined in section 95481 must submit to the Executive Officer quarterly progress reports and annual compliance reports, as specified in this section. The data for the quarterly reports must be uploaded in the LRT-CBTS within the first 45 days after the end of the quarter. During the subsequent~~second~~ 45 days, reporters shall use the reconciliation reports provided in the LRT-CBTS and in conjunction~~must work~~ with counterparties ~~to~~ complete any necessary report corrections. The reporting frequencies for these reports are set forth below:

(A) *Quarterly Reports.* Unless expressly provided elsewhere in this subarticle, ~~Q~~quarterly reports must be submitted to the Executive Officer by:

June 30th – for the first calendar quarter covering January through March;

September 30th – for the second calendar quarter covering April through June;

December 31st – for the third calendar quarter covering July through September; and

March 31st – for the fourth calendar quarter covering October through December.

~~All data reflecting any transaction with another party shall be uploaded into the LRT-CBTS 45 days before the above due dates for Quarterly Reports. During the remaining 45 days preceding final submission, reporting parties must work in good faith with their counterparties to resolve any fuel transaction discrepancies between the parties' respective reported transactions.~~

(B) *Annual Compliance Reports.* An annual compliance report for the prior calendar year must be submitted to the Executive Officer by April 30th of each year.

(2) *Online Reporting.* The annual compliance and quarterly progress reports must be submitted using the online LCFS Reporting Tool and Credit Bank & Transfer System (LRT-CBTS), an interactive, secured internet web-based system. The LRT-CBTS is available at: www.arb.ca.gov/lcfsrt. Prior to use, a reporting party must first register in the LRT-CBTS pursuant to section 95483.2.

The reporting party is solely responsible for ensuring that the Executive Officer receives its quarterly progress and annual compliance reports by the dates specified in this section. 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 California Code of Regulations, title 2, sections 22000 et seq.

(3) *General and Specific Reporting Requirements for Quarterly Reports*. For each of its transportation fuels, a reporting party must submit a quarterly report that contains the information specified in Table 11~~3~~ and meets the additional specific requirements set forth below:

(A) All applicable transaction types listed and defined in section 95481 must be included in each quarterly report.

(B) *Specific Quarterly Reporting Parameters (Except as Otherwise Noted) for Gasoline and Diesel Fuel.*

1. Production ~~c~~Company ID and ~~f~~Facility ID for each blendstock. CARBOB and diesel fuel are exempt from this requirement.

2. The carbon intensity value of each blendstock determined pursuant to section 95488.

3. The volume of each blendstock (in gal) per compliance period. For purposes of this provision only, except as provided in section 95491(a)(4)(B), the reporting party may report the total volume of each blendstock aggregated for each distinct carbon intensity value (e.g., X gallons of blendstock with A gCO_2e/MJ, Y gallons of blendstock with B gCO_2e/MJ, etc.).

4. A producer of CARBOB, gasoline, or diesel fuel must report, for each of its refineries, the MCON or other crude oil name designation, volume (in gal), and Country (or State) of origin for each crude supplied to the refinery during the quarter. Refineries electing to use the refinery-specific incremental deficit calculation as provided in section 95489(e)(4) must report, in addition to the information required from all refineries, the field name and volume (in gal) for all crude supplied from California State or California Federal Offshore fields.

(C) *Specific Quarterly Reporting Parameters for Natural Gas (including CNG, LNG, and L-CNG).* For each private access, public access, or home fueling facility to which CNG, LNG, and L-CNG, is supplied as a transportation fuel:

1. For CNG and L-CNG, the amount of fuel dispensed (in scf) per compliance period for all light/medium-duty vehicles (LDV & MDV) heavy-duty vehicles with compression ignition engines (HDV-CIE) and heavy-duty vehicles with spark ignition engines (HDV-SIE). For LNG, the amount of fuel dispensed (in gal) per compliance period for all LDV and MDV, HDV-CIE and HDV-SIE.

   CNG and L-CNG is typically dispensed in units of pounds. Regulated parties must, therefore, convert pounds of CNG and L-CNG sold into scf in order to complete their quarterly and annual LCFS reports. This conversion must be accomplished as follows:

   Divide total pounds of CNG or L-CNG sold by the mass density of natural gas. The CA-GREET 2.0 mass density value of 20.4 grams/scf is to be used for this purpose. Convert the result to scf using the standard conversion factor of 453.59 grams/lb. Example: 100 lbs CNG would be converted to scf of CNG as follows:

$$100 \text{ lbs CNG } \times \frac{\text{SCF}}{20.4 \text{ grams}} \times \frac{453.59 \text{ grams}}{\text{lb}} = 22.23 \text{ SCF};$$

2. Except as provided elsewhere in this section the amount of fuel dispensed based on the use of separate fuel dispenser meters at each fuel dispenser must be reported;

3. In lieu of using separate meters at each fuel dispenser, the amount of fuel dispensed at each facility using any other method that the reporting 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, L-CNG, determined pursuant to section 95488.

5. For Bio-CNG, Bio-LNG, and Bio-L-CNG: Biomethane production ~~c~~Company ID and ~~f~~Facility ID.

(D) *Specific Quarterly Reporting Parameters for Electricity used as a Transportation Fuel*.

1. The total electricity dispensed (in kWh) to vehicles at residences. Notwithstanding section 95486(a)(2), for periods beginning January 1, 2015, ~~R~~residential charging may be measured by:

   a. the use of ~~direct~~ metering ~~(either submetering or separate metering)~~ to measure the electricity directly dispensed to all vehicles at each residence; or

   b. for households and residences ~~only~~ where ~~direct~~sufficient metering ~~has not been installed~~is not available, ~~the reporting party may report the total electricity dispensed as a transportation fuel at each residence using another method that the reporting party demonstrates to the Executive Officer's satisfaction is substantially similar to the use of direct metering.~~the Executive Officer will annually calculate the number of credits due to any Electrical Distribution Utility that has opted into the LCFS. The Executive Officer shall use the following method:

$$PEV\ Electricity\ Use^{Non\ metered} = Number\ of\ Vehicles^{Non\ metered} \times Daily\ Average\ PEV\ Electricity\ Use \times Number\ of\ days^{in\ compliance\ period}$$

where:

$PEV\ Electricity\ Use^{Non\ metered}$ is the total estimated electricity use of non-metered residential plug-in electrical vehicles (PEV) within a given Electrical Distribution Utility service area for the current compliance period;

$Number\ of\ Vehicles^{Non\ metered}$ is the number of non-metered residential PEV within a given Electrical Distribution Utility service area for the current compliance period;

$Daily\ Average\ PEV\ Electricity\ Use$ shall be based upon the best available data regarding daily electricity use of residential PEV for the current compliance period;

$Number\ of\ days^{in\ compliance\ period}$ is the total number of days in the current compliance period.

c. On or before January 31st of each year, any Electrical Distribution Utility that has opted into the program shall provide the Executive Officer data relevant to the calculation of credits for the prior year. The Executive Officer shall use the method set forth in this section to calculate any credits generated for the prior year and place them into the Electrical Distribution Utility's LRT-CBTS account at least 30 days prior to the annual reporting deadline. Reporting information pursuant to 95491(a) (3) (D)**1.**, paragraphs b. and c. is exempted from the quarterly reporting deadlines set forth in section ~~**94891**~~**95491** (a) (1) (A).

2. For each public access charging facility, the amount of electricity dispensed (in kWh).

3. For each fleet charging facility, the amount of electricity dispensed (in kWh).

4. For each workplace private access charging facility, the amount of electricity dispensed (in kWh).

5. The carbon intensity value of the electricity determined pursuant to section 95488.

6. For each fixed guideway system, the amount of electricity used for transit propulsion (in kWh).

7. For the electric forklifts located in each Electrical Distribution Utility service area, ~~the amount of estimated electricity provided by Air Resources Board staff annually (in kWh).~~the annual electricity used (in kWh), as **measured at charging in the case of an electric forklift fleet operator claiming credits, or** estimated by Air Resources Board staff each year **in the case of an Electrical Distribution Utility claiming credits**. An Electrical Distribution Utility's report of electricity used by electric forklifts is exempted from the quarterly reporting deadlines set forth in section **~~9489~~95491**(a)(1)(A).

(E) *Specific Quarterly Reporting Parameters for Hydrogen or a Hydrogen Blend Used as a Transportation Fuel.*

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. For hydrogen fuel cell forklifts, the amount of fuel dispensed (in kg).

4~~3~~. The carbon intensity value of the hydrogen or the blendstocks used to produce the hydrogen blend determined pursuant to section 95488.

5~~4~~. Production ~~c~~Company ID and ~~f~~Facility ID.

(4) *General and Specific Reporting Requirements for Annual Compliance Reports.* A reporting party must submit an annual compliance report that meets, at minimum, the general and specific requirements for quarterly reports and the additional requirements set forth below:

(A) A reporting party must report the following:

1. The total credits and deficits generated by the regulated party in the current compliance period, calculated in the LRT-CBTS as per equations in section 95486(b);

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;

5. The total credits sold or otherwise transferred;

6. The total credits retired within the LCFS to meet compliance obligation per section 95486(b)(3); and

7. The total credits exported to programs outside the LCFS.

(B) A producer of CARBOB, gasoline, or diesel fuel must report, for each of its refineries, the MCON or other crude oil name designation, volume (in gal), and Country (or State) of origin for each crude supplied to the refinery during the annual compliance period. Refineries electing to use the refinery-specific incremental deficit calculation as provided in section 95489(e)(4) must report, in addition to the information required from all refineries, the field name and volume (in gal) for all crude supplied from California State or California Federal Offshore fields.

(C) All pending credit transfers initiated during a compliance period must be completed prior to submittal of the annual compliance report.

(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 Tables 6, 7, and 8~~the carbon intensity lookup table (Method 1)~~;

(B) credits or deficits, expressed to the nearest whole metric ton CO_2 equivalent;

(C) fuel volume in units specified in sections 95491(a)(3) and (a)(4), expressed to the nearest whole unit applicable for that quantity; and

(D) any other quantity must be expressed to the nearest whole unit applicable for that quantity.

(6) The regulated party must maintain a non-negative value for each FPC Obligated Amount, as defined in section 95481, as summed across all quarterly data in the LRT-CBTS.

(7) *Correcting a Previously Submitted Report.* A regulated party may request to have ~~a~~ previously submitted quarterly ~~or annual~~ reports for the current compliance period reopened for corrective edits and resubmittal~~. The regulated party must~~by submitting a~~n Unlock Report~~ Correction Request Form online in the LRT-CBTS. The regulated party is required to provide justification for the report corrections and indicate the specific corrections to be made to the report. Each submitted request is subject to Executive Officer review and approval. Permission to correct a report does not preclude enforcement based on misreporting.

Table 11~~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 or Other Alternative Fuels***
Company or Organization Name	x	x	x	x	x
Reporting Period	x	x	x	x	x
Fuel Pathway Code	x	x	x	x	x
Transaction Type	x	x	x	x	x
* Transaction Date	x	x	x	x	x
Business Partner	x	x	x	x	x
Production Company ID and Facility ID	x**	x**	n/a	x	x
Fuel Transport Mode	x	x	x	x	x
Aggregated **Transaction** Indicator~~Transaction~~ (T/F)	x	x	~~x~~	x	x
Fuel Application/EER	x	x	x	x	x

Parameters to Report	*Gasoline & Diesel Fuel*	*CNG & LNG*	*Electricity*	*Hydrogen or Hydrogen Blends*	*Neat Ethanol or Biomass-Based Diesel Fuels or Other Alternative Fuels*
Amount of each gasoline and diesel blendstock	x	n/a	n/a	n/a	n/a
Amount of each fuel used as gasoline replacement	n/a	x	x	x	x
Amount of each fuel used as diesel fuel replacement	n/a	x	x	x	x
***Credits/deficits generated per quarter (MT)	x	x	x	x	x
MCON or other crude oil name designation, volume (in gal), and country (or state) of origin for each crude supplied to the refinery	x	n/a	n/a	n/a	n/a
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) to meet compliance obligation , if any	x	x	x	x	x

** Same as Title Transfer Date; For Aggregated Transactions enter the last day of the reporting period*
*** Does not apply to CARBOB, Diesel Fuel or Fossil NG*
**** Value will be calculated, stored and displayed in the LRT-CBTS.*

Table 12. Annual Compliance Calendar.

January 31	Electrical Distribution Utility that has opted into LCFS provide ARB data relevant to the calculation of credits for the prior year. **(Please see section 95491(a)(3)(D).)**
February 14	Upload all Q4 transactions in LRT-CBTS and begin any needed reconciliation with counterparties
March 31	Submit final Q4 report

March 31	ARB calculate credits generated by Electrical Distribution Utility (EDU)for the prior year and place them into EDU's LRT-CBTS account
April 30	Submit final Annual Report for preceding year; demonstrate compliance; voluntary pledge of credits into Credit Clearance Market (CCM)
May 15	Upload all Q1 transactions in LRT-CBTS and begin any needed reconciliation with counterparties
May 15	Executive Officer announces whether CCM will occur
June 1	Executive Officer posts list of CCM buyers and sellers
June 1	CCM opens and in effect for June and July
June 30	Submit final Q1 report
July 31	CCM for prior year closes
August 14	Upload all Q2 transactions in LRT-CBTS and begin any needed reconciliation with counterparties
August 31	CCM purchasers submit amended Annual Report
September 30	Submit final Q2 report
November 14	Upload all Q3 transactions in LRT-CBTS and begin any needed reconciliation with counterparties
December 31	Submit final Q3 report

(b) *Recordkeeping and Auditing.*

(1) *Record Retention for Reporting Parties*.

(A) Any record required to be maintained under this subarticle shall be retained for five years, and made available within 20 days upon request of the Executive Officer. Records to include:

1. Product transfer documents;
2. Copies of all data reports submitted to the Executive Officer;
3. Records related to each fuel transaction; and
4. Records used for compliance or credit calculations.

(c) *Documenting Fuel Transfers.*

(1) A product transfer document provided by a reporting party pursuant to section 95483 must prominently state the information specified below.

(A) For transfers where an LCFS obligation is being passed to the transferee:

1. Transferor Company Name, Address and Contact Information;

2. Transferee Company Name, Address and Contact Information;

3. Transaction Date

   a. For Non-Aggregated Transactions: Date of Title Transfer
   b. For Aggregated Transactions: Quarter End Date

4. Fuel Pathway Code (FPC) and Carbon Intensity (CI);

5. Volume/Amount and Units;

6. A statement identifying whether the LCFS Obligation is passed to the transferee; and

7. Fuel Production Company ID and Facility ID as registered with RFS2 program or LCFS program. This does not apply to CARBOB, Diesel Fuel or Fossil NG.

(B) For transfers where the LCFS obligation was retained by the transferor, the following is to be provided to the transferee and passed along to any subsequent owner or supplier:

1. All information identified in 94591(c)(1)(A) as items 1. through 7.;
2. The following notice reading as follows:

"This transportation fuel has been reported to the ARB LCFS Program by <*Insert name of Reporting Party holding LCFS obligation*> for intended use in California. Any export of this fuel from California by any subsequent owner or supplier must be reported to the ARB LCFS Program (www.arb.ca.gov/lcfsrt). Contact the ARB LCFS Administrator for assistance with reporting exported volumes (lrtadmin@arb.ca.gov)."

(d) *Verification of Pathway, CI, Report.* 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.

(e) *Access to Records.* Pursuant to H&S section 41510, the Executive Officer has the right of entry to any premises used, leased, or controlled by a regulated party, a reporting party, a verifier, or an applicant, in order to inspect and copy records relevant to the determination of compliance. Scheduling of access shall be arranged in advance where feasible and must not unreasonably disturb normal operations, provided, however that access shall not be unreasonably delayed.

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, ~~43000.5, 43013~~ and 43018 Health and Safety Code; 42 U.S.C. section 7545, 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, 39515, 39516, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511 and 43000, Health and Safety Code; Section 25000.5, Public Resources Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

§ 95492. Enforcement Protocols.

Notwithstanding any provision of this subarticle, 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 fuel transport mode requirements in sections 95491(a) and (b). 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 of this subsection. Any such protocol shall include the person's agreement to be bound by the terms of the protocol.

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, ~~43000.5, 43013~~ and 43018 Health and Safety Code; 42 U.S.C. section 7545, 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, 39515, 39516, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511 and 43000, Health and Safety Code; Section 25000.5, Public Resources Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

§ 95493. Jurisdiction.

(a) Any person who, pursuant to section 95483, is the regulated party or a person to whom the compliance obligation has been transferred directly or indirectly (including the reporting party) from the 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-CBTS.

(b) 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) Opting in pursuant to section 95483.1;

(2) Receipt of compensation of any kind, including sales proceeds and commissions, from any transfers of a LCFS credit made pursuant to section 95485(b); or

(3) Submittal of information to the Executive Officer pursuant to the crude oil innovative method provisions set forth in section 95489(d)(2).

(4) Submittal of information to the Executive Officer pursuant to the fuel pathway certification provisions set forth in section 95488(c).

(5) Registration in the LRT-CBTS as a broker pursuant to section 95483.2(d)(2).

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, ~~43000.5, 43013~~ and 43018 Health and Safety Code; 42 U.S.C. section 7545, 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, 39515, 39516, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 3951 and 43000, Health and Safety Code; Section 25000.5, Public Resources Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

§ 95494. Violations.

(a) ARB may seek penalties and injunctive relief for any violation of this subarticle pursuant to Health and Safety Code section 38580 and Chapter 1.5 of Part 5 of Division 26. Penalties may be assessed for each day of any violation of this subarticle. Violations shall be subject to all other penalties and remedies permitted under State law. In determining any penalty amount, ARB shall consider all relevant circumstances, including the criteria in Health and Safety Code section 43031.

(b) ~~Penalties may be assessed for each day of any violation of this subsection.~~ Each day or portion thereof that any report required by this subarticle~~section~~ remains unsubmitted, incomplete, or inaccurate constitutes a separate violation ~~of this article~~. For purposes of this subsection, "report" means any submittal to the Executive Officer or made in the LRT-CBTS~~ under this subsection~~.

(c) ~~Failure to demonstrate compliance at the end of a compliance period or carry-over all deficits pursuant to section 95485(c) constitutes a separate violation for~~

~~each day within the compliance period. Alternatively, e~~Each deficit that is not eliminated at the end of a compliance period or carried over as permitted~~required~~ by section 95485~~(c)~~ constitutes a separate day of violation~~ of this subarticle for purposes of determining penalties pursuant to Health and Safety Code section 38580(b)(3)~~, subject to a penalty not to exceed $1000 per deficit.

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, ~~43000.5, 43013~~ and 43018 Health and Safety Code; 42 U.S.C. section 7545, 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, 39515, 39516, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 43000, 43025, 43026, 43027, 43028, 43029, 43030 and 43031, Health and Safety Code; Section 25000.5, Public Resources Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

§ 95495. Authority to Suspend, Revoke, or Modify.

(a) If the Executive Officer determines that any basis for invalidation set forth in subsection (b)(1) below occurred, in addition to taking any enforcement action, he or she may: suspend, restrict, modify, or revoke an LRT-CBTS account; modify or delete an Approved CI; restrict, suspend, or invalidate credits; or recalculate the deficits in a regulated party's LRT-CBTS account. For purposes of this section, "Approved CI" includes any determination relating to carbon intensity made pursuant to section 95488, or relating to a credit-generating activity approved under section 95489.

(b) *Determination that a Credit, Deficit Calculation, or Approved CI is Invalid.*

(1) *Basis for Invalidating.* The Executive Officer may modify or delete an Approved CI and invalidate credits or recalculate deficits based on any of the following:

(A) any of the information used to generate or support the Approved CI was incorrect for reasons including the omission of material information or changes to the process following submission;

(B) any material information submitted in connection with any Approved CI or credit transaction was incorrect;

(C) fuel reported under a given pathway was produced or transported in a manner that varies in any way from the methods set forth in any corresponding pathway application documents submitted pursuant to section 95488 (or former section 95486, effective January 1, 2010);

(D) fuel transaction or other data reported into LRT-CBTS and used in calculating credits and deficits was incorrect or omitted material information;

(E) credits or deficits were generated or transferred in violation of any provision of this subarticle or in violation of other laws, statutes or regulations; and

(F) a party obligated to provide records under this subarticle refused to provide such records or failed to produce them within the required time.

(G) For purposes of this section, "material information" means:

1. information that would affect by any amount the Executive Officer's determination of a carbon intensity score, expressed on a gCO_2e/MJ basis to two decimal places, or

2. information that would affect by any whole integer the number of credits or deficits generated under sections 95486, 95489, or resulting from any transaction or other activity reported in the LRT-CBTS.

(2) *Notice.* Upon making an initial determination that a credit **(other than a provisional credit)**, deficit calculation, or Approved CI **(other than a provisionally-approved CI)** may be subject to modification, deletion, recalculation, or invalidation under subsection (b)(1), above, the Executive Officer will notify all potentially affected parties, including those who hold or generate credits or deficits based on an Approved CI that may be invalid, and may notify any linked program. The notice shall state the reason for the initial determination, and may be distributed using the LRT-CBTS. Any party receiving such notice may submit, within 20 days, any information that it wants to the Executive Officer to consider. The Executive Officer may request information or documentation from any party likely to have information or records relevant to the validity of a credit, deficit calculation, or Approved CI. Within 20 days of any such request, a regulated party shall make records and personnel available to assist the Executive Officer in determining the validity of the credit, deficit calculation, or Approved CI.

(3) *Interim Account Suspension.* When the Executive Officer makes an initial determination pursuant to the preceding subsection, the Executive Officer may immediately take steps to suspend an account or an Approved CI as needed to prevent additional accrual of credits or deficits under the Approved CI and to prevent transfer of potentially invalid credits or deficits. Suspension of an account may include locking an account within the LRT-CBTS to prevent credit transfers or report alteration.

(4) *Final Determination*. Within 50 days after making an initial determination under sections 95483.3(b)(1) and (2), above, the Executive Officer shall make a final determination based on available information whether, in his or her judgment, any of the bases listed in subsection (b)(1) exists, and notify affected parties and any linked program. If the final determination invalidates credits or deficit calculations, the corresponding credits and deficits will be added to or subtracted from the appropriate LRT-CBTS accounts. Where such action creates a deficit in a past compliance period, the deficit holder has 60 days from the date of the final determination to purchase sufficient credits to eliminate the entire deficit. A return to compliance does not preclude further enforcement actions.

(5) *Responsibility for Invalidated Credits or Miscalculated Deficits.* Any party that generated, previously held, or holds invalidated credits or whose account reflects an invalid deficit calculation is responsible for returning its account to compliance without regard to fault.

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, ~~43000.5, 43013~~ and 43018 Health and Safety Code; 42 U.S.C. section 7545, 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, 39515, 39516, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511 and 43000, Health and Safety Code; Section 25000.5, Public Resources Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

§ 95496. Regulation Review.

As provided in this section, the Executive Officer shall review the implementation of the LCFS program and present his findings to the Board in a progress report by July 30, 2017 and a full program review by January 1, 2019.

(a) The 2017 progress report shall include, at a minimum, consideration of the following areas:

(1) The LCFS program's progress against LCFS targets, including any appropriate comparisons to prior scenarios produced by staff and external parties;
(2) The availability and use of ultra-low carbon fuels to achieve the LCFS standards; and
(3) The program benefits provided by the following provisions:

(A) credits for producing crudes using innovative methods,
(B) low-complexity/low-energy-use refinery credits;
(C) refinery investment credits, including a review of the use of the provision, the types of actions generating credits, the number of credits generated, and any associated potential benefits as well as potential disbenefits associated with the provision;

(D) renewable hydrogen refinery credits; and
(E) incremental deficits that result from increases in the carbon intensity of crude oil.

(~~a~~b) The 2019 review shall include, at a minimum, consideration of the following areas:

(1) The LCFS program's progress against LCFS targets;

(2) Adjustments to the compliance schedule, if needed;

(3) The availability and use of ultra-low carbon fuels to achieve the LCFS standards~~ and advisability of establishing additional mechanisms to incentivize higher volumes of these fuels to be used~~;

(4) The LCFS program's impact on the State's fuel supplies;

(5) An assessment of the air quality impacts on California associated with the implementation of the LCFS to date; and whether the use of the fuel in the State will affect progress towards achieving State or federal air quality standards, or results in any significant changes in toxic air contaminant emissions; and recommendations for mitigation to address adverse air quality impacts identified;

(6) Identification of hurdles or barriers (e.g., permitting issues, infrastructure adequacy, research funds) and recommendations for addressing such hurdles or barriers;

(7) Significant economic issues; fuel adequacy, reliability, and supply issues; and environmental issues that have arisen; and

(8) The advisability of harmonizing with international, federal, regional, and state LCFS and life cycle assessments.

(~~b~~c) The Executive Officer shall solicit comments and evaluations from the public on the ARB staff's assessments of the areas and elements specified in subsection (a) and (b) above, as well as on other topics relevant to the progress report and program review.

(~~c~~d) In presenting the results, the Executive Officer shall propose any amendments or such other action as the Executive Officer determines is warranted.

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, ~~43000.5, 43013~~ and 43018 Health and Safety Code; 42 U.S.C. section 7545, 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, 39515, 39516, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516 and 43000,

Health and Safety Code; Section 25000.5, Public Resources Code; and *Western Oil and Gas Ass'n v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

§ 95497. Severability.

Each provision of this subarticle shall be deemed severable, and in the event that any provision in this subarticle is held to be invalid, the remainder of this subarticle shall continue in effect.

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, ~~43000.5, 43013~~ and 43018 Health and Safety Code; 42 U.S.C. section 7545, 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, 39515, 39516, 38571, 38580, 39000, 39001, 39002, 39003, 39515, 39516, 41510, 41511 and 43000, Health and Safety Code; Section 25000.5, Public Resources Code; and Western Oil and Gas Ass'n v. Orange County Air Pollution Control District, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).