LOW CARBON FUEL STANDARD

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FINAL REGULATION ORDER

Adopt new sections 95480, 95481, 95482, 95483, 95483.1, 95483.2, 95484, 95485, 95486, 95487, 95488, 95489, 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, 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) "AEZ-EF Model" means the Agro-Ecological Zone Emissions Factor model (December 31, 2014), posted at http://www.arb.ca.gov/fuels/lcfs/lcfs_meetings/lcfs_meetings.htm and available for download at http://www.arb.ca.gov/fuels/lcfs/lcfs_meetings/aez-ef_model_v52.xlsm, which is incorporated herein by reference.

(3.1) "Alternative Fuel Portal (AFP)" means an online portal used for alternative fuel production facilities registration and for the fuel pathway certification application and evaluation process, available at www.arb.ca.gov/lcfsrt.

(4) "Aggregated Transaction 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) "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) "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.

(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).

(9) "Biodiesel Blend" means biodiesel blended with CARB diesel.

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

(12) "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) "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 fossil L-CNG.

(14) "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.

(15) "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) "Biomethane" is primarily methane derived from biogas after carbon dioxide and other impurities present in the biogas are chemically or physically separated from the gaseous mixture. Biomethane has equivalent chemical, physical, and performance characteristics as methane gas.

(17) "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, (September 29, 2015), which is incorporated by reference. A blendstock that is used directly as a transportation fuel in a vehicle is considered a finished fuel.

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

(19) "Business Partner" refers to the counterparty in a specific transaction involving the regulated party. This can either be the buyer or seller of fuel.

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

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

(22) "Credit Facilitator (CF)" is an LRT-CBTS user assigned by a regulated party to initiate and complete LCFS credit transfers on behalf of their registered organization.

(23) "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 the requirements of this regulation.

(24) "Credits" and "deficits" mean the measures used for determining a regulated party's compliance with the average carbon intensity requirements in section 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) "Day" means a calendar day unless otherwise specified as a business day.

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

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

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

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

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

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

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

(39) "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) "Fuel Pathway Code (FPC)" means the identifier in the LRT-CBTS that applies to a specific fuel pathway approved pursuant to section 95488.

(41) "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) "GTAP" or "GTAP Model" means the Global Trade Analysis Project Model (December 2014), which is incorporated herein by reference, and is a software available for download at https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=4577.

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

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

(47) "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 entered California. For purposes of this definition, "transportation equipment" includes, but is not limited to, rail cars, cargo tanker trucks, and pipelines.

(48) "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).

(48.1) "LCFS Data Management System (LCFS DMS)" means a system which comprises the following three modules: LCFS Reporting Tool (LRT), Credit Bank and Transfer System (CBTS), and Alternative Fuel Portal (AFP)

(48.2) "LCFS Reporting Tool and Credit Bank & Transfer System (LRT-CBTS)" means an interactive, secured internet web-based system used for registration and fuel and credit reporting, available at www.arb.ca.gov/lcfsrt.

(49) "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) "Light-Duty Vehicle" and "Medium-Duty Vehicle" mean 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) "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) "Liquefied Natural Gas (LNG)" means natural gas that has been liquefied.

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

(54) "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).

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

(57) "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.

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

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

(63) "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) "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) "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) "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 pursuant to section 95483.1.

(67) "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) "Production facility" means, with respect to any 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) "Public access fueling facility" means a fueling facility that is not a private-access fueling dispenser.

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

(71) "Renewable Hydrocarbon 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.

(72) "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, <u>and any person who has exported transportation fuel that was reported with compliance obligation</u>.

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

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

(A) "Production in California" means the transportation fuel was produced at a facility in California for use in 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) "Purchased with Obligation" means the transportation fuel was purchased with the compliance obligation from a reporting party;
(E) "Purchased without Obligation" means the transportation fuel was purchased without the compliance obligation from a reporting party;
(F) "Sold with Obligation" means the transportation fuel was sold with the compliance obligation by a reporting party;
(G) "Sold without Obligation" means the transportation fuel was sold without the compliance obligation by a reporting party;
(H) "Export" means a transportation fuel was reported with compliance obligation under the LCFS but was later exported outside of California;
(I) "Loss of Inventory" means the fuel entered the California fuel pool but was not used due to volume loss;
(J) "Gain of Inventory" means the fuel entered the California fuel pool due to a volume gain;
(K) "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) "EV Charging" means providing electricity to recharge EVs;

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

(N) "Forklift Fueling" means providing fuel (electricity, hydrogen, etc.) to forklifts;

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

(78) "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) "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.

"AEZ-EF" means Agro-Ecological Zone Emissions Factor model.
"AFP" means Alternative Fuel Portal.
"ASTM" means ASTM International (formerly American Society for Testing and Materials).
"BEV" means battery electric vehicles.
"CA-GREET" means California-modified Greenhouse Gases, Regulated Emissions, and Energy use in Transportation model.
"CARBOB" means California reformulated gasoline blendstock for oxygenate blending.
"CaRFG" means California reformulated gasoline.
"CCM" means Credit Clearance Market.
"CEC" means California Energy Commission.
"CFR" means Code of Federal Regulations.
"CI" means carbon intensity.
"CNG" means compressed natural gas.
"EER" means energy economy ratio.
"EV" means electric vehicle.
"FCV" means fuel cell vehicles.
"FPC" means fuel pathway code.
"gCO_2e/MJ" means grams of carbon dioxide equivalent per megajoule.
"GGE" means gasoline gallon equivalent.
"GTAP" means the Global Trade Analysis Project model.
"GVWR" means gross vehicle weight rating.
"H_2" means hydrogen.
"HDV" means heavy-duty vehicles.
"HDV-CIE" means a heavy-duty vehicle compression-ignition engine.
"HDV-SIE" means a heavy-duty vehicle spark-ignition engine.
"HEV" means hybrid electric vehicle.

"ICEV" means internal combustion engine vehicle.
"iLUC" means indirect land use change.
"LCFS" means Low Carbon Fuel Standard.
"LCFS DMS" means LCFS Data Management System.
"LDV" means light-duty vehicles.
"L-CNG" means liquefied compressed natural gas.
"LNG" means liquefied natural gas.
"LPG" means liquefied petroleum gas.
"LRT-CBTS" means LCFS Reporting Tool and Credit Bank & Transfer System.
"MCON" means marketable crude oil name.
"MDV" means medium-duty vehicles.
"MMBtu" means million British Thermal Units.
"MT" means metric tons of carbon dioxide equivalent.
"NGV" means a natural gas vehicle.
"OPGEE" means Oil Production Greenhouse gas Emissions Estimator Model
"PHEV" means plug-in hybrid vehicles.
"SCF" means standard cubic foot.
"TEOR" means thermally enhanced oil recovery.
"ULSD" means California ultra-low sulfur diesel.

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, 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 used in forklifts;
~~(3) A hydrogen blend;~~
~~(4)~~(3) Fossil CNG derived from North American sources;
~~(5)~~(4) Bio-CNG;
~~(6)~~(5) Bio-LNG; and
~~(7)~~(6) 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 or hydrogen used in on-road transportation; 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.

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 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 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 CARBOB and Diesel (including the CARBOB and Diesel portion of liquid fuel blends).* The regulated parties for CARBOB and Diesel under the LCFS are intended to be the same as the required reporting parties for CARBOB and Diesel volumes under the Regulation for Mandatory Reporting of Greenhouse Gas Emissions (MRR) contained in Sections 95100-95158 of Title 17 of the California Code of Regulations.

(1) For CARBOB and Diesel (including the CARBOB and Diesel portion of liquid fuel blends), the regulated party is the reporting party covered under the MRR, section 95121(d)(1)-(4).

(2) *The Obligation for CARBOB and Diesel Cannot Be Transferred.*

(b) *Regulated Parties for Liquid Alternative Fuels (including the liquid alternative fuel portion of blends with CARBOB and Diesel).* For both neat liquid alternative fuel and the liquid alternative fuel portion of blends with CARBOB and Diesel, the regulated party is the producer or importer of the liquid alternative fuel.

(c) *Transfer of Liquid Alternative Fuels and Blends of Liquid Alternative Fuels with CARBOB or Diesel Fuel.*

(1) *Transfer of Liquid Alternative Fuels*.

(A) *Person Acquiring the Liquid Alternative Fuel Becomes the Regulated Party.* Except as provided in section 95483(c)(1)(B), when a person who is the regulated party for liquid alternative fuel transfers ownership of the liquid alternative fuel, before it has been transferred from its final distribution facility, the new owner of the liquid alternative fuel (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 95491(c)(1).

(B) *Transfer of Liquid Alternative Fuels and Retaining Compliance Obligation.* Section 95483(c)(1)(A) notwithstanding, the transferor may elect to remain the regulated party and retain the LCFS compliance obligation for the transferred liquid alternative fuel by written contract with the recipient. The transferor shall provide the recipient at the time of transfer with a product transfer document that prominently states the information specified in 95491(c)(1).

(2) *Transfer of Blends of Liquid Alternative Fuels with CARBOB or Diesel ("Blend").*

(A) *Person Acquiring the Blend Becomes the Regulated Party for the Liquid Alternative Fuel Portion of the Blend.* Except as provided for in section 95483(c)(2)(B), on each occasion that a person transfers ownership of a Blend before it has been transferred from its final distribution facility, the recipient of ownership of the Blend (i.e., the transferee) becomes the regulated party for the liquid alternative fuel portion of the Blend. The transferor shall provide the recipient a product transfer document that prominently states the information specified in 95491(c)(1).

(B) *Transfer of Blends and Retaining Compliance Obligation for the Liquid Alternative Fuel Portion of the Blend.* Section 95483(c)(2)(A)

notwithstanding, the transferor may elect to remain the regulated party and retain the LCFS compliance obligation for the liquid alternative fuel portion of the transferred Blend by written contract with the recipient. The transferor shall provide the recipient at the time of transfer with a product transfer document that prominently states the information specified in 95491(c)(1).

~~(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 person, 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 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 section 95483(a)(2)(C),~~

~~(A) 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) 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) Subsections (A) and (B) 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).~~

~~(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 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.~~

~~(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), on each occasion that a person transfers ownership of fuel that falls within section 95483(c) ("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) 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 <u>or his/her designee</u>; 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 <u>or his/her designee</u>.

(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 <u>the sole party</u> eligible to generate credits in its service territory. To receive such credits, 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);

(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 (A) through (C) above and costs associated with meeting the requirements. 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) 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~~ becomes the sole party eligible to generate the credits for the electricity. To receive credit for transportation fuel supplied through public access EV charging equipment, the EVSP or Electrical Distribution Utility must meet the requirements set forth in section 95483(e)(1)(B) through (D) and in section 95488(c)(4)(D)4.

(3) EV Fleets

(A) For on-road transportation fuel supplied to a fleet of EVs, 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 or his/her designee's written request to opt in and generate credits associated with a specified fleet, the fleet operator or his/her designee becomes the sole party ~~is~~ eligible to generate the credits for the electricity. 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 and requirements set forth in section 95488(c)(4)(D)4. must be met.

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(B) For on-road transportation fuel supplied through the use of a battery switch station, 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 station owner's or his/her designee's written request to opt in and generate credits associated with a specific location or locations, the station owner or his/her designee becomes the sole party ~~is~~ eligible to generate the credits for the electricity. To receive credit for transportation fuel supplied to an EV fleet, requirements set forth in section 95488(c)(4)(D)4.) must be met.

(4) For on-road transportation fuel supplied through private access EV charging equipment at a business or workplace, 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 site host's or his/her designee's written request to opt in and generate credits associated with a specific location or locations, the site host or his/her designee becomes the sole party ~~is~~ eligible to generate the credits for the

electricity. 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 or his/her designee 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

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

(C) Requirements set forth in section 95488(c)(4)(D)4. must be met.

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

(~~7~~6) 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~~ becomes the sole party 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 of electric forklifts in the fleet must be included by the fleet operator as supplemental information in annual compliance reporting.

(7) In the event that there is measured on-road electricity as a transportation fuel that is not covered in subsections 95483(e)(1) through (6) 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).

(f) *Regulated Parties for Hydrogen ~~or a~~and Hydrogen Blends).*

~~(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.~~

(1) *Designation of Regulated Parties for Hydrogen.* The regulated party is the business or legal entity that operates the fueling equipment ("station operator") at the facility at which the finished hydrogen fuel is dispensed to motor vehicles for their transportation use, or his/her designee.

~~(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)~~.

(2) For hydrogen supplied to a station operator by a third-party producer or provider ("provider"), the hydrogen provider must be a co-applicant on the fuel pathway submission, and must provide the recipient a product transfer document that prominently states the information specified in section 95491(c).

(3) The station operator may elect not to be the regulated party. Upon submittal to and approval by the Executive Officer of the station operator's written acknowledgment that it will not generate credits and fulfill the reporting requirements of the regulated party under this provision, the provider becomes the regulated party.

~~(3)~~(4) 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, 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(b) and meets the requirements of section 95483(d), (e) or (f)(4), 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 into 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*.

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

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

(C) 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, 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 online LCFS Reporting Tool and Credit Bank & Transfer System (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 Country, 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 Country, 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) *Know Your Customer Requirements.*

(1) All individuals (account administrators, credit facilitators and brokers) in addition to the requirements contained elsewhere for registering with the LRT-CBTS system must provide the following documentation:

(A) The address of the primary residence of the applicant, which may be shown by any of the following:

1. A valid government-issued identity card with an expiration date;

2. Any other government-issued identity document containing an individual's primary address; or

3. Any other document that is customarily accepted by the State of California as evidence of the primary residence of the individual;

(B) Date of birth;

(C) Employer name, contact information, and address;

(D) Either a passport number or driver's license number, if one is issued;

(E) An open bank account in the United States;

(F) Employment or other relationship to an entity that has registered or has applied to register with the LRT-CBTS system if the individual

is listed by an entity registering pursuant to section 95483, 95483.1 or 95483.2;

(G) A government-issued document providing photographic evidence of identity of the applicant which may include:

1. A valid government-issued identity card or driver's license with an expiration date and date of birth; or

2. A passport; and

(H) Any criminal conviction during the previous five years constituting a felony in the United States, and for international applicants a criminal conviction equivalent to a felony in the United States. This disclosure must include the type of violation, jurisdiction, and year.

(I) Verification of information.

1. Any copy of a document submitted pursuant to section 95483.2(e) must be notarized by a notary public no more than three months before submittal.

2. The Executive Officer may re-check all documents required pursuant to Section 95483.2(e) every two years. To allow verification, upon request and within ten days, the individual must provide updated documentation required pursuant to this section.

~~(e)~~(f) *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, 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***	96.50
2017	95.02
2018	93.55
2019	91.08
2020 and subsequent years	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 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

Year	*Average Carbon Intensity (gCO_2e/MJ)*
2013**	97.05
2014	97.05
2015	97.05
2016***	99.97
2017	98.44
2018	96.91
2019	94.36
2020 and subsequent years	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 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, 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:

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

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

where:

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

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

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

$Credits^{CCMPledge}$ are the credits pledged for the Credit Clearance Market and withheld from ongoing LCFS market;

(c) *Credit Clearance Market.* *Timeline may change subject to verification schedule.*

(1) If a regulated party does not 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 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 regulated party subject to section 95485(c)(1) must acquire credits pledged into the Credit Clearance Market 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 retired for compliance all of the credits 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. $200/credit (MT$CO_2$e) in 2016.

2. This price shall be adjusted in subsequent years by a Consumer Price Index (CPI) 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 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 =

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

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.

(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 on 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 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, 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 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 the LRT-CBTS. When the Executive Officer approves the section 95488 or 95489 application or demonstration, the Executive Officer will recognize any 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 the buyer within ~~10~~ 3 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;

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[1]:

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)

[1] Energy density factors are based on the lower heating values of fuels in CA-GREET 2.0 using BTU to MJ conversion of 1055.06 J/Btu.

~~Pure Methane (ft^3)~~	~~1.02 (MJ/ft^3)~~
Natural Gas (~~ft^3~~)(scf)	~~1.04~~ 0.98 (MJ/~~ft^3~~scf)
LNG (gal)	78.83 (MJ/gal)
Electricity (KWh)	3.60 (MJ/KWh)
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 CA-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 ~~and electric and hydrogen fuel cell forklifts~~. For <u>any expansion of</u> fixed guideway system ~~expansion beyond~~ <u>after</u> 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 the quarterly report has been submitted in the LRT-CBTS. Regulated parties shall reconcile their data with their business partners before submission. *Timeline may change subject to verification schedule.*

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

(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~~" "date completed" first) will be retired next;

(C) Credits generated in a previous compliance ~~year~~ period (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).

(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:

$$Total\ Credits = Credits^{Gen} + Credits^{Aquired} - Sum\ of(Credits^{Retired} + Credits^{OnHold} + Credits^{Sold} + Credits^{Exported} + Credits^{CCMPledge})$$

where:

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

(B) <u>The credit transfer request must identify the type of transfer agreement for which the transfer request is being submitted, selecting one of the following two types:</u>

<u>1. The agreement for the sale of credits for which the delivery of LCFS credits will take place no more than 6 days from the date the parties reached the credit transfer agreement;</u>

<u>2. The agreement for the sale of credits for which the delivery of LCFS credits is to take place more than 6 days from the date the parties reached the credit transfer agreement or that involve multiple transfers of credits over time.</u>

(C)~~(B)~~*Credit Seller Requirements.* When a credit transfer agreement has been reached, within ~~10 business~~ <u>3</u> 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 <u>the credit transfer</u> 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 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, if applicable, 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. If the agreement does not contain a price for LCFS credits, the seller may enter a price of zero dollars only if the transfer request is submitted to fulfill a type of agreement listed in a. through c. below.

   a. The proposed transfer is between parties with a direct corporate association;
   b. The proposed transfer is to reflect an adjustment in CI value of fuel transacted;
   c. The proposed transfer is for a transfer agreement that incorporates credit trade along with other product sales or purchases, and does not specify a price or cost basis for the sale of the credits alone;

The seller must disclose the type of agreement in the CTF. If the pricing terms are not covered by the agreement types listed in section 95487(c)(1)(C)(9)a. through c. then the seller must explain the reason for price unavailability using the comment section in CTF and upload a copy of transfer agreement including the terms of credit pricing.

10. Expected Termination Date of the agreement. If the last term of the transfer agreement is completed when the credit transfer request process is completed, then the date the transfer request is submitted should be entered as the Expected Termination Date. If there is financial reconciliation, contingency, or other terms not settled prior to the completion of the credit transfer request, the parties are required to state the date the terms are expected to be settled as the Expected Termination Date. If the transfer agreement does not specify a date for the settlement of financial reconciliation, contingency, or other terms after the transfer request is completed, the entity may enter the Expected Termination Date as "Not Specified".

11. Whether the transfer agreement provides for future credit transfers after the current transfer request is completed.

(D)~~(C)~~ *Credit Buyer Requirements.*

1. *Confirmation of Agreement for Credit Transfer.* Within ~~10~~ 3 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~~ 6 days of reaching the credit transfer 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.

(E)~~(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 of 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 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.

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 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 or have obtained certified 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 (2), 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), (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. 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.~~

~~(2) *Recertification of legacy pathways.* Fuel providers may apply for recertification as set forth below to replace pathway certifications subject to being 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) through (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 (CCS). 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. If the innovative method involves delivery of carbon captured by the alternative fuel producer to a third party to store the carbon, both the alternative fuel producer and the third party must apply and will be considered joint applicants for approval of the innovative method; 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~~ Alternative Fuel Portal (http://www.arb.ca.gov/lcfsrt). The New Pathway Request Form contains the following fields. All that apply are required.

(A) Production company name and full mailing address for the physical location of the company's headquarters.

(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 LCFS Company ID.

(C) 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 for the company

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

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

(F) 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 LCFS Facility ID.

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

(J) 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) *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) *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) *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: the pathway from the Tier 2 Lookup Table (Table 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 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.

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

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

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

1. Feedstock
2. Direct CI
3. Indirect 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 Attestation Letter. Once the proposed pathway has been certified and both an electronic and paper copy of the LCFS Fuel Producer 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 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 and other 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~~certified pathway;
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 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); and
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. *Tier 1 Calculator.* 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.
   a. *Period Covered*. The period used to complete this interface shall be the most recent two-year period of typical operation.
   b. *Processes Covered for Energy Use Inputs*. 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.

b. *Co-location.* If the fuel production facility is co-located with one or more non-fuel-production facilities, and energy consumption invoices are not separately available for the fuel production process, the applicant shall obtain and submit a third-party energy audit sufficient to establish the long-term, typical energy consumption patterns of the fuel production facility (distinct and separated from the consumption of all co-located non-fuel processes).

c. *Choice of Electricity Mix.* 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. Applicants outside the U.S. must choose the user-defined option and use the applicable mix for their region/country.

2. *Summary Spreadsheet.* A spreadsheet summarizing the invoices and receipts used to derive the inputs to the Tier 1 Calculator. Retention requirements for all documentation underlying this Summary Spreadsheet shall conform to section 95488(c)(7)A and the applicant shall make all information available to their verifier or ARB upon request. Specifically the sheet must summarize:

a. *All forms of energy consumed in the fuel production process*. For each form of energy consumed, report the monthly total energy consumption, the two-year total, and the monthly average. 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 in the submitted CA-GREET2.0-T1 interface.

b. *All fuel sales, feedstock purchases, and co-products sold*. For feedstock purchases, co-product sales, etc., report the monthly totals, two-year totals and a monthly average.

c. *Any additional off-site processing*. If the fuel produced, or any by-products or co-products, receive additional processing after they leave the facility, such as additional distiller's grains drying or fuel distillation, the submitted sheets shall include a summary of receipts covering the energy consumed for those processes.

d. Any other relevant information summarizing input to the CA-GREET 2.0-T1 model.

~~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.~~3. *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.~~4. A signed LCFS Fuel Producer Attestation Letter, as set forth in section 95488(c)(2).

~~(B) Upon verifying completion 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) http://www.arb.ca.gov/fuels/lcfs/fuelpathways/fuelpathways.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/fuelpathways/fuelpathways.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 if the Tier 2 Lookup Table (Table 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.); and
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. *Summary of Energy Invoices*. The applicant shall submit ~~Invoices,~~ a summary spreadsheet of all required information, 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~~ and other information related to 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 Attestation Letter, as set forth in section 95488(c)(2).

4. *Specific provisions for users of Lookup Table Pathways for California Grid Electricity ELCG100, Average North American Natural Gas CNGFS100, and Hydrogen.*

a. In lieu of requirement specified in Section 95488(c)(4)(D)1 above, applicants requesting pathway ELCG100 are required to submit: a list of EV charging stations, including a name of the station, a number of charging ports, physical address, and geographical coordinates (coordinates must be reported using latitude and longitude). If there is an addition, removal or relocation of a charging station then the list of stations must be updated by next quarterly reporting deadline, as set forth in section 95491(a)(1)(A).

b. In lieu of requirement specified in 95488(c)(4)(D)1 above, applicants requesting pathway CNGFS100 are required to submit a list of CNG stations, including meter unique ID, physical address, and geographical coordinates (coordinates must be reported using latitude and longitude). If there is an addition, removal or relocation of a CNG station then the list of stations must be updated by next quarterly reporting deadlines, as set forth in section 95491(a)(1)(A).

c. In addition to the requirements of subsections 1-3 above, regulated parties for hydrogen fuel are required to submit: a list of hydrogen stations, including a name of the station, the number of pumps at each dispensing pressure, physical address, and geographical coordinates (coordinates must be reported using latitude and longitude). If there is an addition, removal or relocation of a hydrogen fueling station then the list of stations must be updated by next quarterly reporting deadline, as set forth in section 95491(a)(1)(A). Regulated parties for renewable hydrogen must include one of the following:

i. Regulated parties for hydrogen pathways produced by reforming with biomethane must provide contracts and invoices documenting the quantity and origin of biomethane used in the reformation process.

ii. Regulated parties for hydrogen pathways produced by electrolysis with renewable electricity must provide contracts and invoices documenting procurement of renewable electricity from a source that meets the requirements of 95488(b)(6)(G).

(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 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 does 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 the Tier 2 Lookup Table (Table 6). To generate the values appearing in Table 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, ~~September 29, 2015~~ November xx, 2016), which is incorporated herein by reference,

b. The Tier 2 California-modified GREET model, version 2.0 (CA-GREET2.0 T2, , ~~September 29, 2015~~ November xx, 2016), 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.

The Carbon Intensity Lookup Table, shown below, specifies 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~~ November xx, 2016. 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~~ Version 3.0. Pathways ~~CNG020 and CNG021~~ CNGWW100 and CNGWW101.

Industrial Strategies Division, Air Resources Board. ~~December 15, 2014~~ November xx, 2016. 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~~ Version 3.0. Pathway ~~CNG005~~ CNGFW100.

Industrial Strategies Division, Air Resources Board. November xx, 2016. Detailed ~~California-Modified~~ CA-GREET Pathway for Compressed Natural Gas (CNG) from North American Natural Gas. Version 3.0. Pathway CNGFS100.

Industrial Strategies Division, Air Resources Board. ~~December 15, 2014~~ November xx, 2016. Detailed CA-GREET Pathway for Ultra Low Sulfur Diesel (ULSD) from Average Crude Refined in California. ~~Version 3~~ Version 4.0. Pathway ~~ULSD001~~ ULSD100

Industrial Strategies Division, Air Resources Board. ~~December 15, 2014~~ November xx, 2016. Detailed CA-GREET Pathway for California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB) from Average Crude Refined in California. ~~Version 3~~ Version 4.0. Pathway ~~CBOB001~~ CBOB100.

Industrial Strategies Division, Air Resources Board. ~~December 15, 2014~~ November xx, 2016. Detailed CA-GREET Pathway for California Average and Marginal Electricity. ~~Version 3~~ Version 4.0. Pathway ~~ELC002~~ ELCG100 and ELCR100.

Industrial Strategies Division, Air Resources Board. ~~December 15, 2014~~ November xx, 2016. Detailed CA-GREET Pathway for Compressed Gaseous Hydrogen from North American Natural Gas ~~Version 3~~ Version 4.0. Pathways ~~HYGN001, HYGN002, HYGN003, HYGN004, and HYGN005~~ HYGF100, HYGF101, HYGRB100, and HYGRB101.

Industrial Strategies Division, Air Resources Board. November xx, 2016. Detailed CA-GREET Pathway for Compressed Gaseous Hydrogen by Electrolysis Version 1.0. Pathways HYGEG100, HYGEG101, HYGERG100 and HYGERG101.

Table 6. Tier 2 Lookup Table for Gasoline and Diesel and Fuels that Substitute for Gasoline and Diesel

Fuel	Pathway Identifier	Pathway Description	Carbon Intensity Values (gCO_2e/MJ)		
			Direct Emissions	Land Use or Other Indirect Effect	Total
CARBOB[1]	~~CBOB001~~ CBOB100	CARBOB - based on the average crude oil supplied to California refineries and average California refinery efficiencies	99.78	0	99.78
Diesel[1]	~~ULSD001~~ ULSD100	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~~ CNGFW100	Biomethane produced from the high-solids (greater than 15 percent total solids) anaerobic digestion of food and green wastes; compressed in CA	-22.93	0	-22.93
	~~CNG020~~ CNGWW100	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	0	7.75
	~~CNG021~~ CNGWW101	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	0	30.92
	CNGFS100	Natural Gas – Average North American Natural Gas (77.2% Well NG and 22.8% Shale Gas); pipelined to California for compression[2].	78.35	0	78.35
Electricity	~~ELC002~~ ELCG100	California grid electricity	105.16	0	105.16
	ELCR100	Electricity from 100% solar or wind generation	0.00	0	0.00
Hydrogen	~~HYGN001~~ HYGF100	Compressed H2 from ~~central~~ reforming of NG (includes liquefaction and re-gasification steps)	~~151.01~~ XX.XX		
	~~HYGN002~~	~~Liquid H2 from central reforming of NG~~	~~143.51~~ XX.XX		
	~~HYGN003~~ HYGF101	Compressed H2 from ~~central~~ reforming of NG (no liquefaction and re-gasification steps)	~~105.65~~ XX.XX		
	~~HYGN004~~	~~Compressed H2 from on-site reforming of NG~~	~~105.13~~ XX.XX		

Fuel	Pathway Identifier	Pathway Description	Carbon Intensity Values (gCO_2e/MJ)		
			Direct Emissions	Land Use or Other Indirect Effect	Total
	~~HYGN005~~ HYGRB100	Compressed H2 from ~~on-site~~ reforming with 100% renewable biomethane feedstocks (includes liquefaction and re-gasification steps)	~~88.33~~ XX.XX		
	HYGRB101	Compressed H2 from reforming with 100% renewable biomethane feedstocks (no liquefaction and re-gasification steps)	XX.XX		
	HYGEG100	Compressed H2 from electrolysis using California average grid electricity (includes liquefaction and re-gasification steps)	XX.XX		
	HYGEG101	Compressed H2 from electrolysis using California average grid electricity (no liquefaction and re-gasification steps)	XX.XX		
	HYGERG100	Compressed H2 from electrolysis using 100% renewable electricity (includes liquefaction and re-gasification steps)	XX.XX		
	HYGERG101	Compressed H2 from electrolysis using 100% renewable electricity (no liquefaction and re-gasification steps)	XX.XX		

[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.~~
[2]Fuel Pathway Code CNGFS100 is a Tier 1 Pathway.

(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 (Table 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 (see sub-section 6(a) below for details on supporting documentation). ~~Documents such as receipts, which are available in paper form only, shall be scanned into an electronic file for submittal.~~ The LCFS Fuel Producer 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 specified in section 95488(c)(3)(A)2 ~~subsection (A) above~~ must be uploaded through the LRT-CBTS web portal (http://www.arb.ca.gov/lcfsrt);

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 not exempt from the LCFS under section 95482(c).

(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 (Table 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 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 (Table 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 <u>within the United States, except regulated parties for hydrogen and dedicated electric charging stations meeting the requirements of section 95488(b)(6)(G),</u> 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. <u>Applicants outside the U. S. must choose the user-defined option and use the applicable mix for their region/country.</u>

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), summary sheets reflecting inputs to the CA-GREET2.0 T-2 model pursuant to section 95488(c)(3)(A)2 shall be required to be submitted by an applicant. ~~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-T2 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 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 section 95488(c)(5) shall apply to all Tier 1 and all Tier 2 Method 2A and Method 2B fuel pathway applications.

These provisions shall not apply to Tier 2 Lookup Table applications.

(B) After 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 elapsed 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 applicant shall be required to obtain validation services for the pathway pursuant to section 95498(c). ~~the Executive Officer will evaluate that application to determine whether it has met all requirements necessary for certification.~~ After an application receives a positive validation statement, the application will move to a final review by ARB staff. If deficiencies are revealed at that stage, the applicant will be offered an opportunity to address the deficiencies.

(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. For Tier 2 applications, t~~T~~he 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~~ summary sheets (as detailed in 95488(c)(3)(A)2) 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 the summary sheets and other documentation provided, ~~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 ~~or an application to replace any pathway subject to deactivation under section 95488(a)~~ has met all requirements for certification, the pathway 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, once the Executive Officer has deemed that the application has met all requirements necessary for certification, it will be posted to the LCFS fuel pathway comments web site for public comment. Comments will be accepted for 10 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.

(I) 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, ARB will move forward to certify the application. The applicant's response and ARB evaluation and recommendation ~~those responses will be~~ 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 60055.1 through 60055.43.

(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.

(G) Indirect accounting mechanisms for renewable energy generation, such as the use of renewable energy certificates, cannot be used to reduce an energy source's CI. Renewable energy sources that may be used to reduce CI are limited to renewable electricity from a dedicated (non-grid) form of generation, such as wind turbines and photovoltaic arrays.

1. Notwithstanding the above, renewable electricity sources that meet one of the following requirements may be used to reduce the CI of pathways for hydrogen fuel produced by electrolysis, and electricity used for electric vehicle charging at dedicated, metered charging stations. Such electricity:

a. Is obtained through a program with eligibility requirements that match or are more stringent than the Green Tariff Shared Renewables program under California Public Utilities Code Section 2831, or

b. Is grid-connected, located at a site owned by the hydrogen producer or EV charging station owner, meets renewable electricity eligibility requirements under California Public Utilities Code Section 399.12, and produces no additional renewable attributes such as renewable energy certificates.

(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	ETH100T	75.97
	Sorghum	Grid electricity, natural gas, and/or renewables	ETH101T	83.49
	Sugar Cane and molasses	Bagasse and straw only; no grid electricity	ETH102T	56.66
	Any starch or sugar feedstock	Any another	ETH103T	98.47
	Corn Stover	As specified in CA-GREET 2.0	ETH104T	41.05
Biodiesel	Any feedstock derived from animal fats or used cooking oil	Grid electricity, natural gas, and/or renewables	BIOD200T	37.54
	Any feedstock derived from plant oils	Grid electricity, natural gas, and/or renewables	BIOD201T	56.95
	Any feedstock	Any other	BIOD202T	102.01
Renewable Diesel (UOP process)	Any feedstock derived from animal fats or used cooking oil	Grid electricity, natural gas, and/or renewables	RNWD300T	32.26
	Any feedstock derived from plant oils	Grid electricity, natural gas, and/or renewables	RNWD301T	53.21
	Any feedstock	Any other	RNWD302T	102.01
Fossil CNG	Petroleum Natural Gas	N/A	CNG400T	78.37
Fossil LNG	Petroleum Natural Gas	N/A	LNG401T	94.42
Fossil L-CNG	Petroleum Natural Gas	N/A	LCNG402T	97.33
Biomethane CNG	Landfill or digester gas	Grid electricity, natural gas, and/or parasitic load	CNG500T	46.42

Fuel	Feedstock	Process Energy	FPC	CI (gCO_2e/MJ)
Biomethane LNG	Landfill or digester gas	Grid electricity, natural gas, and/or parasitic load	LNG501T	64.63
Biomethane L-CNG	Landfill or digester gas	Grid electricity, natural gas, and/or parasitic load	LCNG502T	67.18
Electricity	Natural gas, dams, wind, etc.	CA mix average	EL600T	110.42
Hydrogen	Centralized reforming of fossil L-CNG	Any	HYDN700T	191.25
	Centralized reforming of fossil LNG		HYDN701T	176.58
	Centralized reforming of fossil CNG		HYDN702T	113.38
	On-site reforming of CNG		HYDN703T	112.48
	On-site reforming of CNG made with renewable feedstocks		HYDN704T	98.05
Any gasoline substitute feedstock-fuel combination not included above	Any	Any	SG800T	98.47
Any diesel substitute feedstock-fuel combination not included above	Any	Any	SD801T	102.01

(C) Based on timely reports using temporary FPCs, the regulated party may generate credits.

(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.

(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 complete a third-party validation, pursuant to section 95498(c), for ~~operating records covering all prior periods of full commercial operation, provided those~~ records that cover at least one full quarter of commercial production ~~one full calendar quarter~~. ~~The following subsections govern the development, evaluation, and post-certification monitoring of such provisional pathways.~~

Following a positive validation statement, the Executive Officer may grant ~~Following the~~ provisional certification of a fuel pathway application. ~~,t~~ The applicants shall then submit pathway data pursuant to sections 95488(c)~~copies of receipts for all energy purchases~~ each calendar quarter until the Executive Officer is in possession of verified data ~~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 of the provisional fuel pathway. ~~based on those receipts.~~ Based on timely submissions and accurate reporting ~~reports~~, the applicant may generate ~~provisional~~ credits using such provisional pathways.

Until the Executive Officer has ~~adjusted the CI or informed the producer that the provisional CI has been successfully corroborated by~~ removed the pathway's provisional status (by the applicant completing the full certification process using the data ~~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.~~

(3) Conservative Defaults for Use in Case of Exports and Similar Transactions for Credit Generating Fuels.

(A) A reporting party that is unable to determine the FPC and biofuel facility information for a transaction type listed in 95488(d)(3)(B) must report using the substitute FPCs corresponding to their fuel as listed below:

Fuel	**FPC**	**CI (gCO_2e/MJ)**
Ethanol	ETH0116	40
Biodiesel	BIOD0116	15
Renewable Diesel	RNWD0116	30

(B) The substitute FPC is only functional when reporting the following transaction types in LRT-CBTS:

- sold without obligation
- purchased without obligation
- export
- loss of inventory
- not used for transportation

(C) When using the substitute FPC, the following company and facility ID needs to be selected in the LRT-CBTS:

For the company ID: 0000(Alt. Fuel Production Facility – Defaults)
For the facility ID: 00004(Production Facility Unknown – CI Unknown)

(D) The exporting party is obligated to report the exported volume under the transaction type "export" in LRT-CBTS and must retire credits equivalent for the volume exported.

(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, through positive verification statements during the period in question, that the fuel transfer mode used matches the mode claimed in the certified CI pathway application. ~~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 and fossil natural gas used as a transportation fuel ~~is~~ are exempt from this requirement. For purposes of this provision, "demonstrated" and "demonstration" include 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 make ~~submit~~ the demonstration of a fuel transport mode available to their verifier or the Executive Officer upon request. ~~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 the reported ~~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~~ For demonstrations covering biomethane ~~conveyed to California by pipeline~~ for the purpose of earning credits under the LCFS, the regulated party shall submit as part of their pathway application ~~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). This fact shall be verified quarterly by ARB accredited verifiers for each quarter in which biomethane is supplied to California.

(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) (e) 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 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 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, 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	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
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	16.31
	Albian Heavy Synthetic (all grades)	19.90
	Albian Muskeg River Heavy	19.90
	BC Light	8.27
	Bonnie Glen	8.27
	Borealis Heavy Blend	17.21
	Boundary Lake	8.27
	Bow River	9.27
	Cardium	8.27
	Christina Dilbit Blend	13.34
	Christina Synbit	17.43
	Cold Lake	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	35.27
	Husky Synthetic	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	29.88
	Long Lake Light Synthetic	35.12
	Mackay Heavy Blend	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	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	14.49
	Statoil Cheecham Synbit	18.20
	Suncor Synthetic (all grades)	23.71
	Surmont Heavy Blend	18.26
	Synbit Blend	20.76
	Syncrude Synthetic (all grades)	21.39
	Synthetic Sweet Blend	22.55
	Tundra Sweet	8.27
	Wabasca	6.79
	Western Canadian Blend	9.27
	Western Canadian Select	18.43
Chad	Doba	8.08
Colombia	Cano Limon	9.41
	Castilla	9.61
	Cusiana	10.67
	Magdalena	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	12.35
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	25.42
	Boscan	10.76
	Hamaca	23.51
	Hamaca DCO	7.63
	Laguna	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	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	19.14
	Arroyo Grande	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	4.77
	Belridge, South	14.84

	Beverly Hills	4.49
	Big Mountain	2.58
	Blackwells Corner	5.03
	Brea-Olinda	3.17
	Buena Vista	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	4.08
	Cheviot Hills	3.39
	Chico-Martinez	15.81
	Cienaga Canyon	4.08
	Coalinga	27.85
	Coles Levee, N	4.56
	Coles Levee, S	2.70
	Comanche Point	7.88
	Coyote, East	6.15
	Cuyama, South	14.43
	Cymric	19.23
	Deer Creek	9.96
	Del Valle	4.73
	Devils Den	5.88
	Edison	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	12.77
	Kern Front	25.10
	Kern River	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	10.26
	Lost Hills, Northwest	3.91
	Lynch Canyon	12.00
	Mahala	2.70
	McCool Ranch	3.32
	McDonald Anticline	4.30
	McKittrick	24.64
	Midway-Sunset	25.05
	Montalvo, West	2.28
	Montebello	14.96
	Monument Junction	3.62
	Mount Poso	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	12.71
	Oxnard	9.16
	Paloma	3.51
	Placerita	31.20
	Playa Del Rey	4.58
	Pleito	2.60
	Poso Creek	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	25.99
	Russell Ranch	7.56

	Salt Lake	2.67
	Salt Lake, South	3.84
	San Ardo	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	7.55
	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		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 $CI_{20XXCrudeAve} > CI_{BaselineCrudeAve} + 0.10$ *then:*

$$Deficits_{Incremental20XX}^{XD} = (CI_{BaselineCrudeAve} - CI_{20XXCrudeAve}) \times E^{XD} \times C$$

If $CI_{20XXCrudeAve} \leq CI_{BaselineCrudeAve} + 0.10$ *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;

$CI_{Standard}^{XD}$ has the same meaning as specified in section 95486(b)(3)(A);

$CI_{BaselineAve}^{XD}$ 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, $CI_{BaselineAve}^{XD}$ for CARBOB (XD = "CARBOB") and diesel fuel (XD = "diesel") are the Baseline Average carbon intensity values for CARBOB and diesel (ULSD) set forth in 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:

$$CI_{BaselineCrudeAve} = \frac{[11.39 \times V_{2013} + 11.39 \times V_{2014} + 11.98 \times V_{2015}]}{[V_{2013} + V_{2014} + V_{2015}]}$$

For comparison to $CI_{2016CrudeAve}$, the baseline is:

$$CI_{BaselineCrudeAve} = \frac{[11.39 \times V_{2014} + 11.98 \times V_{2015} + 11.98 \times V_{2016}]}{[V_{2014} + V_{2015} + V_{2016}]}$$

For comparison to $CI_{2017CrudeAve}$and subsequent years, the baseline is

$$CI_{BaselineCrudeAve} = 11.98$$

$CI_{20XXCrudeAve}$ 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 for 2013 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 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):

$$Credits_{Innov}(MT) = 26765 \times \frac{V_{steam} \times f_{solar}}{V_{crudeproduced}} \times V_{Innov} \times C$$

For crude oil produced using solar steam generation (generated steam of 65 to 75 percent quality):

$$Credits_{Innov}(MT) = 24992 \times \frac{V_{steam} \times f_{solar}}{V_{crudeproduced}} \times V_{Innov} \times C$$

For crude oil produced using solar steam generation (generated steam of 55 to 65 percent quality):

$$Credits_{Innov}(MT) = 23219 \times \frac{V_{steam} \times f_{solar}}{V_{crudeproduced}} \times V_{Innov} \times C$$

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 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 (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 (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*.

(A) 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.

(B) If the carbon intensity of the marketed crude or crude blend that contains the innovatively produced crude is greater than the 2010 Baseline Crude Average ($CI^{XD}_{BaselineAvg}$), then the total volume of the marketed crude or crude blend eligible to generate innovative method credits in a given annual compliance period will be limited to the volume of the marketed crude or crude blend supplied to California refineries during the baseline year 2010.

(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 calculation 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)(54) 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
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 Intermediate feedstocks; and

(D) The volume of CARBOB and diesel purchased for blending.

(3) Credits 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.

(B) *Credit Calculation*. For CARBOB and diesel volumes reported in section 95489(e)(2)(A):

$$Credits_{LC-LE}^{XD} = 5\ gCO2e/MJ \times VF^{XD} \times E^{XD} \times C$$

where:

$Credits_{LC-LE}^{XD}$ 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

$$C = 1.0 \times 10^{-6} \frac{MT}{gCO_2e}$$

(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 $CI_{20XXCrudeAve} > CI_{BaselineCrudeAve} + 0.10$ and $CI^{LC-LE}_{20XXCrudeAve} > CI^{LC-LE}_{BaselineCrudeAve} + 0.10$ then:

$$Deficits^{XD}_{Incr20XX} = \left[(CI_{BaselineCrudeAve} - CI_{20XXCrudeAve}) \times (1 - VF^{XD}) + (CI^{LC-LE}_{BaselineCrudeAve} - CI^{LC-LE}_{20XXCrudeAve}) \times VF^{XD}\right] \times E^{XD} \times C$$

If $CI_{20XXCrudeAve} > CI_{BaselineCrudeAve} + 0.10$ and $CI^{LC-LE}_{20XXCrudeAve} \leq CI^{LC-LE}_{BaselineCrudeAve} + 0.10$ then:

$$Deficits^{XD}_{Incr20XX} = (CI_{BaselineCrudeAve} - CI_{20XXCrudeAve}) \times (1 - VF^{XD}) \times E^{XD} \times C$$

If $CI_{20XXCrudeAve} \leq CI_{BaselineCrudeAve} + 0.10$ and $CI^{LC-LE}_{20XXCrudeAve} > CI^{LC-LE}_{BaselineCrudeAve} + 0.10$ then:

$$Deficits^{XD}_{Incr20XX} = (CI^{LC-LE}_{BaselineCrudeAve} - CI^{LC-LE}_{20XXCrudeAve}) \times VF^{XD} \times E^{XD} \times C$$

If $CI_{20XXCrudeAve} \leq CI_{BaselineCrudeAve} + 0.10$ and $CI^{LC-LE}_{20XXCrudeAve} \leq CI^{LC-LE}_{BaselineCrudeAve} + 0.10$ then:

$$Deficits^{XD}_{Incr20XX} = 0$$

where:

$Deficits^{XD}_{Incr20XX}$ 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);

$CI^{LC-LE}_{20XXCrudeAve}$ 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. $CI^{LC-LE}_{2015CrudeAve}$ will be calculated using data for crude oil supplied to the low-complexity/low-energy-use refinery during the calendar year 2015. $CI^{LC-LE}_{2016CrudeAve}$ will be calculated using data for crude oil supplied to the low-complexity/low-energy-use refinery during the calendar years 2015 and 2016. $CI^{LC-LE}_{2017CrudeAve}$ 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} 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.

$C = 1.0 \times 10^{-6} \frac{MT}{gCO_2e}$.

(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, a default carbon intensity value 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 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 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.

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. Carbon Intensity Values for Crudes 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	19.92
	Cold Lake	18.40
	Federated	7.62
	Koch Alberta	7.62
	Mixed Sweet	7.62
	Suncor Synthetic	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	12.38
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	12.83
	Arroyo Grande	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	4.58
	Belridge, South	13.58
	Beverly Hills	4.42
	Big Mountain	2.85
	Brea-Olinda	3.15
	Buena Vista	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	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	20.30
	Deer Creek	10.17

	Del Valle	4.56
	Devils Den	5.58
	Edison	8.83
	El Segundo	3.22
	Elk Hills	5.20
	Elwood, S., Offshore	4.29
	Fruitvale	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	13.50
	Kern Front	23.74
	Kern River	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	10.75
	Lost Hills, Northwest	4.58
	Lynch Canyon	7.30
	McDonald Anticline	5.10
	McKittrick	16.77
	Midway-Sunset	22.30
	Montalvo, West	2.83
	Montebello	11.64
	Monument Junction	3.56
	Mount Poso	14.02
	Mountain View	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	11.91
	Oxnard	15.61
	Paloma	3.55
	Placerita	35.08
	Playa Del Rey	5.60
	Pleito	3.56
	Poso Creek	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	29.16
	Russell Ranch	7.92
	Salt Lake	2.56
	Salt Lake, South	3.70
	San Ardo	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	5.38
	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 must be submitted during or after the year 2016 and must be approved pursuant to this section before the refinery can receive credit. A project is eligible if the authority-to-construct permit was approved after January 1, 2016.

(B) The refinery investment credit project must occur within the boundaries of the refinery.

(C) The refinery investment credit project must achieve a carbon intensity reduction from the comparison baseline of at least 0.1 gCO_2e/MJ.

(D) The applicant 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.

(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).

(H) Carbon capture and sequestration (CCS). CCS projects must use a Board-approved quantification methodology including monitoring, reporting, verification, and permanence requirements associated with the carbon storage method being proposed. If the CCS project involves delivery of carbon captured by the refinery to a third party to store the carbon, both the refinery and the third party must apply and will be considered joint applicants for approval of the CCS project.

(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 total energy for each refinery product output pre-project and post-project as follows:

$$EC_i^{XD} = \left(Volume_i^{XD}\right)\left(D^{XD}\right)\left(42\ \left(\frac{gal}{bbl}\right)\right)$$

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

$C = 1.0 \times 10^{-6} \frac{MT}{gCO_2e}$.

(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 and how emissions are reduced;

2. An engineering drawing(s) or process flow diagram(s) that illustrates the project 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.

(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) 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) 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 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. 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(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) When the Executive Officer determines that the carbon intensity reduction from refinery investment credits has decreased 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 project, the refinery investment credit shall be canceled henceforth.

(6) *Recordkeeping*. For each approved refinery investment 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(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:

$Credits_{RIC}^{H}$ is the amount of LCFS credits generated (a zero or positive value), in metric tons, by renewable hydrogen;

CI_{Fossil}^{H} is carbon intensity requirement of fossil hydrogen in gCO_2e/MJ from Table 6 for Hydrogen with the pathway identifier HYGN003;

$CI_{Renewable}^{H}$ is the carbon intensity of the renewable hydrogen in gCO_2e/MJ, as determined by section 95488(c)(4)(F);

$D_{Renewable}^{H}$ is the energy density of hydrogen listed in Table 3 in MJ/kg;

$V_{Renewable}^{H}$ 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 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, 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.]

§ 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 45 days, reporters shall use the reconciliation reports provided in the LRT-CBTS and in conjunction with counterparties complete any necessary report corrections. This deadline does not apply to entities that do not need to reconcile with counterparties. It only applies to entities that perform the following transactions: purchased with obligation, purchased without obligation, sold with obligation, and sold without obligation. The reporting frequencies for these reports are set forth below:

(A) *Quarterly Reports.* Unless expressly provided elsewhere in this subarticle, 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.

(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. (Deadline may change subject to verification schedule)

(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 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 Company ID and 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~~ GGE or Therms) per compliance period for all light/medium-duty vehicles (LDV & MDV) and 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.

   For CNG and L-CNG, the amount of fuel dispensed at fast fill stations must be reported in GGE* and the amount of fuel dispensed at time (slow) fill stations must be reported in Therms as shown on utility bills.

   ~~CNG and L-CNG are 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:~~

   $$\cancel{100\ \text{lbs CNG} \times \frac{\text{SCF}}{20.4\ \text{grams}} \times \frac{453.59\ \text{grams}}{\text{lb}} = 22.23\ \text{SCF};}$$

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;

3. The carbon intensity value of the CNG, LNG, L-CNG, determined pursuant to section 95488.

* 1 GGE of CNG measured at standard pressure and temperature (14.73 pounds per square inch at 60 degrees Fahrenheit) equals to 126.67 cubic feet or 5.66 pounds (NIST 1994)

5. For Bio-CNG, Bio-LNG, and Bio-L-CNG: Biomethane production Company ID and 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, residential charging may be measured by:

   a. the use of metering to measure the electricity directly dispensed to all vehicles at each residence; or

   b. for households and residences where sufficient metering is not available, 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 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 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 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. The carbon intensity value of the hydrogen or the blendstocks used to produce the hydrogen blend determined pursuant to section 95488.

5. Production Company ID and Facility ID.

6. *Additional reporting requirements for Regulated Parties for hydrogen pathways with renewable energy inputs.* The quantity of renewable feedstock or process energy used to produce renewable hydrogen.

(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:~~ An annual compliance report will be generated for reporting party submission in the LRT-CBTS and shall include 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~~ pledged for sale into the CCM.

(B) A reporting party must report the total credits pledged for sale into CCM.

(~~B~~C) 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~~D) ~~All pending credit transfers initiated during a compliance period must be completed prior to submittal of the annual compliance report.~~

Regulated parties for electricity must include supplemental information as specified section 95483(e)(1) through (7) as applicable.

(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;

(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 previously submitted quarterly reports for the current compliance period reopened for corrective edits and resubmittal by submitting a 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. 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 (T/F)	x	x	n/a	x	x
Fuel Application/EER	x	x	x	x	x
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

Parameters to Report	*Gasoline & Diesel Fuel*	*CNG & LNG*	*Electricity*	*Hydrogen or Hydrogen Blends*	*Neat Ethanol or Biomass-Based Diesel Fuels or Other Alternative Fuels*
***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~~,~~ and Diesel Fuel ~~or Fossil NG~~*
**** Value will be calculated, stored and displayed in the LRT-CBTS.*

Table 12. Annual Compliance Calendar.
(Timeline may change subject to verification schedule)

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 30th	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, including name, phone number, and company's email;

;

2. Transferee Company Name, Address and Contact Information, including name, phone number, and company's email;

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, 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, 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).~~(c)(5).

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, 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) Each day or portion thereof that any report required by this subarticle remains unsubmitted, incomplete, or inaccurate constitutes a separate violation. For purposes of this subsection, "report" means any submittal to the Executive Officer or made in the LRT-CBTS.

(c) Each deficit that is not eliminated at the end of a compliance period or carried over as permitted by section 95485 constitutes a separate day of violation, subject to a penalty not to exceed $1000 per deficit.

NOTE: Authority cited: Sections 38510, 38560, 38560.5, 38571, 38580, 39600, 39601, 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 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 954~~83.3~~95(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, 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.

(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;

(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.

(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.

(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, 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, 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).

§ 95498. Requirements for Verification of Fuel Pathway Carbon Intensity and Fuel Volumes.

(a) *Applicability*. This section establishes a quality assurance verification program to improve the data quality used to earn LCFS credits, and to add quality assurance to data used for compliance reporting through the LRT-CBTS. Responsible parties who must attain verification services include any:

(1) Reporting party;

(2) Fuel pathway applicant;

(3) Fuel pathway holder.

(b) *Verification Requirements*. Responsible parties must contract with an accredited verification body to verify the validity of LCFS credits entering the market. To verify the legal transfer of credits and fuel volumes, responsible parties must also obtain the services of an accredited verification body to verify the accuracy of subsequent fuel transactions for fuels sold with obligation up to point of final distribution. Verifications shall include quarterly and annual verifications.

(1) Quarterly verifications for fuel pathway holders and reporting parties

(A) Quarterly verification scope for fuel pathway holders includes:

1. Conformance review of high risk pathway contributors.

2. Accuracy of reported volumes of fuels produced during the applicable quarter under a certified fuel pathway.

3. Accuracy of reported by-products or co-products associated with fuel production.

4. Total production volume.

5. Fuel transport mode.

(B) Quarterly verification scope for reporting parties includes:

1. Accuracy of reported fuel transactions by reporting parties including, but not limited to, reconciliation of fuel volumes along the supply chain, the proper assignment of obligation

throughout the supply chain, and product transfer documentation associated with fuel transactions reported in the LRT-CBTS.

(C) Quarterly verification reports must be submitted following each reporting period described in section 95491(a)(1)(A) as follows:

September 30th – for the first calendar quarter covering the reporting period of January through March;

December 31st – for the second calendar quarter covering the reporting period of April through June;

March 31st – for the third calendar quarter covering the reporting period of July through September; and

June 30th – for the fourth calendar reporting quarter covering the reporting period of October through December.

(2) Annual verification for fuel pathway holders

(A) Annual verification scope for fuel pathway holders includes:

1. Full verification of entire life cycle associated fuel pathways described in section 95498(b)(1)(A), including feedstock acquisition, total fuel production and sale of fuel and any by-products or co-products.

2. Volumetric reconciliation of fuels reported in the LRT-CBTS since the last annual verification.

3. Volumetric reconciliation of reported by-products and co-products since the last annual verification.

(B) Annual verification reports must be submitted by September 1st for the prior year.

(3) Fuel pathway holders required to obtain quarterly and annual verifications under section must contract with accredited verifying bodies. Responsible parties shall not use the same verification body or verifier(s) for more than six consecutive years. The six year period begins on the date the responsible party first contracts for any independent third-party verification. This includes ARB verification services, for the scope of activities or operations under the USEPA Facility ID or LCFS Facility ID for uploading supporting documents for carbon intensity calculations and fuel

volume determination, and ends on the date the final verification statement is submitted.

(4) Reporting parties required to obtain quarterly verifications under section 95498 must contract with accredited verifying bodies. Responsible parties shall not use the same verification body or verifier(s) for more than six consecutive years, which includes any verifications conducted under this article. The six year period begins on the date the responsible party first contracts for any independent third-party verifications. This includes ARB verification services, for the scope of activities or operations under the USEPA Facility ID or LCFS Facility ID for uploading supporting documents for LRT-CBTS transactions, and ends on the date the final verification statement is submitted.

(5) A responsible party may contract verification services from a previous verification body or verifier(s) only after not using the previous verification body or verifier(s) for at least three years.

(c) *Validation Requirements*. Any fuel pathway applicant must obtain the services of an accredited verification body to validate the carbon intensity for any proposed fuel pathway.

(d) Verification Phase-in period during 2017 to 2018 -***To be discussed at the June 2nd Workshop.***

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, 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).

§ 95499. Requirements for Verification Services.

(a) *Notice of Verification Services.* The verification body shall submit a notice of verification services to ARB for validations and both quarterly and annual verifications. The verification body may begin verification services for the responsible party ten working days after the notice is received by the Executive Officer and the Executive Officer has determined, pursuant to 95501(f), that the potential for conflict of interest is acceptable. The notice must include the following information:

(1) A list of the staff who will be designated to provide verification services as a verification team, including the names of each designated staff member,

the lead verifier, and all subcontractors, and a description of the roles and responsibilities each member will have during verification.

(2) Documentation that the verification team is qualified to provide verification services for the responsible party. This documentation must demonstrate:

(A) To provide fuel pathway verification, at least one verification team member is accredited by ARB as a life cycle specialist verifier and a fuel transactions specialist verifier.

(B) To provide LRT-CBTS transaction verification, at least one verification team member is accredited by ARB as a fuel transactions specialist verifier.

(3) General information on quarterly and annual verifications, including:

(A) The 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 LCFS Facility ID;

(B) The name, address, and contact information for the regulated party including a list of upstream and downstream entities, including but not limited to feedstock suppliers and purchasers of co-products, electricity from facilities cogenerating and exporting electricity, and finished fuel.

(C) The date(s) of scheduled on-site visit(s), if required in section 95499(a)(1), with facility addresses and contact information;

(D) A brief description of expected verification services to be performed, including expected completion date.

(4) If any of the information under section 95501(a)(1) or 95501(a)(3) changes after the notice is submitted to ARB or during the verification services, the verification body must submit an updated conflict of interest self-evaluation form at least five working days before the verification services start date. If any information submitted under section 95501(a)(1) or 95501(a)(3) changes during the verification services, the verification body must notify ARB. In either instance, the conflict of interest must be reevaluated pursuant to section 95501(f) and ARB must approve any changes in writing.

(b) Verification services must include:

(1) *Verification plan*. The verification team must develop both quarterly and annual verification plans:

(A) Any verification plan must include the following information from the responsible party:

1. Information to allow the verification team to develop a general understanding of production fuel volumes, LRT-CBTS reported fuel volumes, and credit transactions;

2. Information to allow the verification team to perform a mass balance of the fuel facility, such as type and amount of feedstock going into fuel facility, type and amount of co-products and by-products, and any others;

3. Fuel pathway monitoring plan;

4. Contracts, sales/purchase agreements, or any other supporting documents issued to track the finished fuel;

5. Sales/purchase agreements for LCFS credits;

6. Information on fuel pathway/s under verification that describes all aspects of a fuel's pathway life cycle that contributes to the total CI.

7. Previous verification reports.

(B) Proposed schedule of the verification services must include:

1. Dates of proposed meetings/interviews with the reporting entities;

2. Dates of proposed site visits, as deemed necessary by verifier or ARB;

3. Types of proposed document and data reviews;

4. Expected date for completing verification services.

(2) *Reconciliation of fuel volume and associated transactions reported in the LRT-CBTS*. For verification of reported fuels transactions, the verification team must conduct an evaluation of the financial data management systems environmental data management systems, product transfer documentation, and any other information associated with the legal transfer of transportation fuels and the transfer of fuel obligation.

(3) *Planning meetings with the responsible party.* The verification team must discuss with the fuel pathway applicant, fuel pathway holder, or reporting party, the scope of the verification services and request any information and documents needed for initial verification services. The verification team must review the documents submitted and plan and conduct a review of original documents and supporting data for the verification service.

(4) *Site visits.* At least one accredited verifier in the verification team, including the fuel life cycle specialist and the fuel transactions specialist, must make at least one site visit during each calendar year. During the site visit, the verification team member(s) must:

(A) Check that all information specified in sections 95484 to 95486, 95488, and 95491, as applicable to the regulated party are identified appropriately.

(B) Review the data management systems used by the regulated party to track, quantify, and report carbon intensity value(s), fuel volumes, and fuel transactions. The verification team shall evaluate the effectiveness of these systems.

(C) Perform tasks that, in the professional judgment of the team, are needed in the verification process, potentially including the following:

1. Interview key personnel, such as process engineers and metering experts, as well as staff involved in compiling and uploading data for verifications;

2. Observe equipment for data sources and equipment supplying data for sources determined in the sampling plan to be high risk;

3. Assessing conformance with measurement accuracy, and data capture, requirements;

4. Reviewing contracts and invoices to confirm carbon intensity parameters, fuel volume and fuel transactions documentation.

(D) Requirements for verification protocols - ***To be discussed at the June 2nd Workshop.***

(5) *Reviewing of facility operations and financial transactions.* The verification team shall review facility operations and financial transactions to identify

applicable carbon intensity parameters and supporting data for fuel volume determination. This shall include a review of material listed in sections 95484 to 95486, 95488, and 95491. The verification team shall also ensure that the reported fuel pathway codes are accurately represented in the LRT-CBTS and that all reported fuel pathway codes have undergone necessary verifications prior to being used.

(6) *Sampling plan.* As part of confirming carbon intensity values, reported fuel volumes, and LRT-CBTS transactions, the verification team shall develop a sampling plan that meets the following requirements:

(A) The sampling plan must be based on an analysis of the likely nature, scale and complexity of the verification services for the contracted responsible party. The analysis shall review the inputs for the submitted information, the rigor and appropriateness of data management systems, and the coordination within the various parties who produce and market transportation fuels to manage the operation and maintenance of equipment and systems used to develop data.

(B) Address in the sampling plan at least 90 percent of the certified fuel pathway carbon intensity for annual verification.

(C) Include in the sampling plan a list of any fuel pathway certification operating conditions as defined in the operating conditions, and relevant information from the alternative fuel portal.

(D) Include in the sampling plan a qualitative narrative of uncertainty risk assessment in the following areas as applicable under sections 95484 to 95486, 95488, and 95491:

1. Data acquisition equipment;

2. Data sampling and frequency;

3. Monitoring plan for carbon intensity value;

4. Data reporting;

5. Management policies or practices in developing carbon intensity, fuel volume, and fuel transactions reports.

(E) Include in the sampling plan the following list of information:

1. Carbon intensity parameters, fuel volumes, and/or fuel transactions that will be targeted for document reviews, and

data checks as specified in 95499(b)(7), and an explanation of why they were chosen;

2. Methods used to conduct data checks for each carbon intensity parameter, fuel and feedstock volumes, or fuel transactions;

3. A summary of the information to be analyzed in the data checks and document reviews conducted for each carbon intensity parameter, fuel volume, or fuel transaction targeted.

The sampling plan list must be updated and finalized prior to the completion of verification services. The final sampling plan must describe in detail how the identified risks were addressed during the verification.

(F) The verification team shall revise the sampling plan to describe tasks completed by the verification team as information becomes available and potential issues emerge with material misstatement or non-conformance with the requirements of this article.

(G) The verification body shall retain the sampling plan in paper, electronic, or other format for a period of no less than ten years following the submission of each verification statement. The sampling plan shall be made available to ARB upon request.

(H) The verification body shall retain all material received, reviewed, or generated to render a verification statement for a regulated party or reporting entities for no less than ten years. The documentation must allow for a transparent review of how a verification body reached its conclusion in the verification statement.

(7) *Data Checks*. To determine the reliability of the submitted data, the verification team shall use data checks. Such data checks shall focus on the most influential or uncertain carbon intensity parameters, fuel volume determinants, or fuel transactions documents, depending on type of verification, and shall include the following:

(A) The verification team shall use data checks to ensure the accuracy of data reported under sections 95484 to 95486, 95488, and 95491of this article;

(B) The verification team shall use professional judgment in the number of data checks required for the team to conclude with reasonable assurance whether the reported information is free of material misstatement. At a minimum, data checks must include the

following:

1. Tracing data to source or origin;

2. Assessment of the data compilation and collection;

3. Recalculation of carbon intensity parameters to check original calculations;

4. Review of CA-GREET calculation by the regulated party or reporting entities for conformance with this article; and

5. Review of meter and fuel analytical instrumentation measurement accuracy and calibration for consistency with the requirements of section XXXXX.

(C) As applicable, the verification team shall review the following information when conducting data checks of the reported data:

1. Feedstock, finished fuel, and co-product and by-product inventory and stock records;

2. Finished fuel and co-product and by-product sales records and contracts;

3. Electricity co-generation and exports, when applicable;

4. Energy inputs;

5. Purchase and delivery records for material inputs to fuel facility or upstream facilities, when applicable;

6. Incoming and outgoing material measurement records; and

7. Other information or documentation that provides measurement information supporting reported material(s).

(D) The verification team is responsible for ensuring reasonable assurance that data reported for certified carbon intensity value(s), reported fuel volumes and proper assignment of obligation conforms to the requirements of this article. In addition, and as applicable, the verifier's review must confirm the following information is correctly reported:

1. For facilities that combust natural gas, natural gas supplier customer account number, service account identification

number, or other primary account identifier(s);

2. For suppliers of natural gas, end-user names, account identification numbers, and natural gas deliveries in MMBtu;

3. For facilities generating or co-generating energy to displace energy use from the local grid or to export electricity, type of meters and number of meters in installed to quantitate energy use and exports, contract and sales invoices, and any other information to support energy use.

(E) The verification team shall compare its own calculated results with the reported data in order to confirm the extent and impact of any omissions and errors. Any discrepancies must be investigated. The comparison of data checks must also include a narrative to indicate which carbon intensity or fuel volume parameters, and transactions were checked, the types and quantity of data that were evaluated for each parameter and transaction, the percentage of reported information covered by the data checks and any separate discrepancies that were identified.

(8) *Findings*. To verify that the submitted information is free of material misstatements, the verification team shall make its own determination of carbon intensity parameters, fuel volume quantitation, and/or fuel transactions for checked data and shall determine whether there is reasonable assurance that reported data for any of the before mentioned verifications does not contain a material misstatement following the guidelines outlined in this article and most recent CA-GREET model. To assess conformance with this article the verification team shall review the methods and factors used to develop reported data for adherence to the requirements of this article and ensure that other requirements of this article are met.

(9) *Log of Issues*. The verification team must keep a log of any issues identified in the course of verification activities that may affect determinations of material misstatement and non-conformance. The issues log must identify the regulatory section related to the non-conformance, if applicable, and indicate if the issues were corrected by the regulated party or reporting entities prior to completing the verification. Any other concerns that the verification team has with the preparation of the carbon intensity, fuel volumes, or fuel transactions report must be documented in the issues log. The log of issues must indicate whether each issue has a potential bearing on material misstatement, non-conformance, or both.

(10) *Material Misstatement Assessment*. Assessments of material misstatement are conducted independently for carbon intensity, fuel volumes, and transactions verifications.

(A) In assessing if the reported carbon intensity value contains material misstatement, the verifier must compare data derived from site visits regarding carbon intensity contributors to reported values used for CA-GREET calculations to determine carbon intensity.

(B) In assessing if the fuel volumes reported contain material misstatement, the verifier must review all contracts and sales invoices, measurement outputs by facility, and any other document supporting volumes measurements and compare inferred volume to fuel volumes reported.

(C) In assessing if the fuel transactions contain material misstatement, the Product Transfer Documents (PTDs), sales/purchase agreements, number of parties involved per fuel pathway code, total production fuel volumes and production capacity, LRT-CBTS reported fuel volumes, number of credits generated, sold, and/or retired must be evaluated.

(D) When evaluating material misstatement, verifiers must assume correctly substituted missing data to be accurate, for as long as the amount of substituted data conforms to section 95499(b)(11) and the newly calculated CI is equal to or less than the CI reported in the LRT-CBTS system as stated in section 95488(c)(6)(A).

(11) *Review of missing data substitution*. If a source selected for a data check was affected by a loss of data used to calculate carbon intensity, determine fuel volumes, or account for fuel transactions over a verification season:

(A) The verification team must note the date, time, and source of any missing data substitution discovered in the verification statement.

(B) The verification team shall confirm that the substituted data does not conflict with the operating conditions as defined in the staff summary during pathway certification.

(C) The verification team shall determine whether the missing data will result in changes to the carbon intensity, fuel volumes, or fuel transactions and if it does, determine the extent of the changes.

(D) The verification team shall categorize the missing data for carbon intensities as major or minor carbon intensity contributors.

(E) The verification team shall ensure that any data substitution does not result in changes an increase to the final carbon intensity of more than five percent.

(F) The verification team shall ensure that any data substitution is not critical to distinguishing between two fuel pathway codes.

(G) The verification team shall calculate the percentage change of the total carbon intensity, fuel volume, or fuel transactions caused by the missing data.

(12) *Fuel transactions report modification*. As a result of data checks by the verification team and prior to completion of a verification statement(s), the reporting party must fix all correctable errors that affect fuel transactions verifications. Failure to do so will result in an adverse verification statement. The reporting party shall maintain documentation to support any revisions made to the initial emissions data report. Documentation for all emissions data report submittals shall be retained by the reporting party for ten years pursuant to section 95488.

The verification team shall use professional judgment in the determination of correctable errors, including whether differences are not errors but result from truncation or rounding or averaging.

If the verification team determines that the reported USEPA Facility ID or LCFS Facility ID is inaccurate, and the reporting party does not submit a revised emissions data report to correct the current USEPA Facility ID or LCFS Facility ID, the result will be an adverse verification statement.

The verification team must document the source of any difference identified, including whether the difference results in a correctable error.

(c) Completion of verification services must include:

(1) *Verification Statement*. Upon completion of the verification services specified in section 95499(b), the verification body shall complete a carbon intensity, fuel volume, or fuel transactions verification statement, and provide those statements to the responsible party and ARB by the applicable verification deadlines specified in section 95498(b)(1)(B) and 95498(b)(2)(B). Before the carbon intensity, fuel volume, or fuel transactions verification statement is completed, the verification body shall have the verification services and findings of the verification team independently reviewed within the verification body by an independent reviewer who is a lead verifier not involved in services for that regulated

party, reporting entities, or upstream and downstream entities during that year.

(2) *Independent review*. The independent reviewer shall serve as a final check on the verification team's work to identify any significant concerns, including:

(A) Errors in planning,

(B) Errors in data sampling, and

(C) Errors in judgment by the verification team that are related to the draft verification statement.

The independent reviewer must maintain independence from the verification services by not making specific recommendations about how the verification services should be conducted. The independent reviewer will review documents applicable to the verification services provided, and identify any failure to comply with requirements of this article or with the verification body's internal policies and procedures for providing verification services. The independent reviewer must concur with the verification findings before the verification statement(s) can be issued.

(3) *Completion of findings and verification report*. The verification body is required to provide the regulated party, reporting party, or party requesting verification services with the following:

(A) A detailed verification report, which shall at a minimum include:

1. For quarterly verifications

a. The verification plan;

b. A description of all transactions by regulated parties from fuel production to the rack;

c. An outline of fuel pathway code(s) used per volume of fuel; and

d. Mass balance assessment for incoming feedstock, finished fuel, and co-products and by-products.

2. For annual verifications

a. A detailed description of the fuel facility;

b. The verification plan;

c. A description of upstream and downstream entities operations and contributing carbon intensity parameters (this portion may redacted as requested by the upstream and downstream entities for business confidentiality);

d. A detailed description of data management practices, data acquisition, carbon intensity calculations, and fuel volume determinations;

e. The detailed comparison of the data checks conducted during verification services for carbon intensity value and fuel volume;

f. A detailed description of feedstock/finished fuel sampling for chemical testing;

g. Mass balance analysis and CA-GREET carbon intensity calculations;

h. The log of issues identified in the course of verification activities and their resolution; and

i. Any qualifying comments on findings during verification services.

3. The verification report shall be submitted to the responsible party before the final verification statement is submitted to ARB. The detailed verification report shall be made available to ARB upon request.

(B) The verification team shall have a final discussion with the responsible party or party requesting verification services explaining its findings, and notify the responsible party or party requesting verification services of any unresolved issues noted in the issues log before the verification statement is finalized.

(C) The verification body shall provide the verification statement to the responsible party or party requesting verification services, and to ARB, attesting whether the verification body has found that the reported information is in conformance with the requirements of this article. For every adverse verification statement, the verification body must explain any non-conformance or material misstatement leading to the adverse verification statement and must cite each section in this article that corresponds to each non-conformance

and material misstatement.

(D) The lead verifier in the verification team shall attest that the verification team has carried out all verification services as required by this article. The lead verifier who has conducted the independent review of verification services and findings shall attest to his or her independent review on behalf of the verification body and his or her concurrence with the verification findings.

1. The lead verifier must attest in the verification statement, in writing, to ARB as follows:

"I certify under penalty of perjury under the laws of the State of California that the verification team has carried out all verification services as required by this article."

2. The lead verifier independent reviewer who has conducted the independent review of verification services and findings must attest in the verification statement, in writing, to ARB as follows:

"I certify under penalty of perjury under the laws of the State of California that I have conducted an independent review of the verification services and findings on behalf of the verification body as required by this article and that the findings are true, accurate, and complete."

(4) *Adverse verification statement and petition process.* Prior to the verification body providing an adverse verification statement to ARB for fuel pathway or LRT-CBTS transactions verification, the verification body must notify the responsible party or party requesting verification services, and provide at least ten working days to gather supporting information to correct any material misstatements or non-conformance found by the verification team. The verification body must also provide notice to ARB of the potential for an adverse verification statement(s) at the same time it notifies the responsible party. The modified report and verification statement(s) must be submitted to ARB before the verification deadline, even if the reporting party makes a request to the Executive Officer as provided below in section 95499(c)(4)(A).

(A) If the responsible party or party requesting verification services and the verification body cannot reach agreement on modifications to the data that result in a positive verification statement for any verifications outlined in this article, the responsible reporting party or party requesting verification services may petition the ARB Executive Officer before the verification deadline and before the

verification statement is submitted to make a final decision as to the verifiability of the submitted data. At the same time that the responsible party or party requesting verification services petitions the Executive Officer, the responsible party or party requesting verification services must submit all information it believes is necessary for the ARB Executive Officer to make a final decision.

(B) The Executive Officer shall make a final decision following the submission of a petition pursuant to section 95499(c)(4)(A). If at any point ARB requests information from the verification body, responsible party, or party requesting verification services, the information must be submitted to ARB within five working days. ARB will notify the responsible party or party requesting verification services and the verification body of its determination.

(d) Upon provision of a verification statement to ARB, the reported data shall be considered final. No changes shall be made to the report as submitted to ARB, and all verification requirements of this article shall be considered complete except in the circumstance specified in section 95499(e).

(e) If the Executive Officer finds a high level of conflict of interest existed between a verification body and a responsible party or party requesting verification services pursuant to this article an error is identified, or a verification report that received a positive verification statement fails an ARB audit, the Executive Officer may set aside the positive verification statement issued by the verification body, and require the responsible party or party requesting verification services to have the data re-verified by a different verification body within 90 days. In instances where an error to the reported data is identified and determined by ARB to not affect the carbon intensity value, fuel volumes, or fuel transactions, the change may be made without a set aside of the positive or qualified positive verification statement.

(f) Upon request by the Executive Officer, the regulated party shall provide data reported as outlined in sections 95484 to 95486, 95488, and 95491for a verifier to conduct verifications, within 20 working days.

(g) Upon request of the Executive Officer, the verification body shall provide ARB the full verification report given to the responsible party, or party requesting verification services, as well as the sampling plan, contracts for verification services, and any other supporting documents and calculations, within 20 working days.

(h) Upon written notification by the Executive Officer, the verification body shall make itself and its personnel available for an ARB audit.

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, 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).

§ 95500. Accreditation Requirements for Verification Bodies and Verifiers.

(a) A verifier or verification body must meet the requirements of title 17, California Code of Regulations, section 95132 to provide validation and verification services to verify the carbon intensity of motor vehicle fuels, fuel production and sale volume, or fuel transactions described under this article. Accreditation of verification bodies and verifiers for verifying carbon intensity or fuel transactions must be achieved separately from accreditation for verifying reports submitted under title 17, California Code of Regulations, section 95100, et.seq..

(b) For purposes of this article, the subcontractor requirements of title 17, California Code of Regulations, section 95132(e) must be applied to life cycle consultants engaged in services that support the submittal, review and approval of pathway applications.

(c) An ARB accredited verification body must make itself and its personnel available for an ARB audit.

(d) *Lead verifier accreditation application.* Notwithstanding the requirements contained in title 17, California Code of Regulations, section 95132(b)(2), which shall remain in effect for purposes of this section, the following shall also apply:

(1) Between the date in which this section becomes effective through December 31, 2019, the requirement that the applicant has been an ARB accredited verifier for two continuous years and has worked as a verifier in at least three completed verifications under the supervision of an ARB accredited lead verifier, may be met if the applicant has acted as project manager, or in a lead capacity, in one or more of the following greenhouse gas reporting programs:

(A) As an approved lead verifier in good standing for the California Climate Action Registry prior to December 1, 2007, having performed at least three verifications by December 31, 2007; or as an acting lead verifier in the California Climate Action Registry, having taken CCAR or other GHG lead verification training and having performed at least three verifications by December 31, 2007; or,

(B) As a recognized lead verifier in good standing for the United

Kingdom Accreditation System, having performed at least three verifications by December 31, 2007; or,

(C) In an organization accredited by a recognized agency in ISO 14065, or ISO 19011, having performed at least three verifications by December 31, 2017.

(c) Fuel Transactions and Fuel Life Cycle Specialist Verifiers.

(1) *Fuel Transactions Specialist Verifier*. The applicant seeking to be accredited as a fuel specific verifier as specified in section 95499(a)(2) must, in addition to meeting the requirements for accredited lead verifier or verifier qualification, have at least two years of professional experience related to accounting and contractual agreements, and take an ARB fuel transaction's verification training for LRT-CBTS reporting and credit generation, take ARB fuel specific verification training and receive a passing score of greater than an unweighted 70% on an exit examination. If the applicant does not pass the exam after the training, they may retake the exam a second time. Only one retake of the examination is allowed before the applicant is required to retake the ARB approved fuel specific verification training.

(2) *Fuel Life Cycle Specialist Verifier*. The applicant seeking to be accredited as a life cycle verifier must, in addition to meeting the requirements for accredited lead verifier or verifier qualification, meet one of the following requirements:

(A) Have at least two years of professional experience related to developing life cycle greenhouse gas emission technical analyses for transportation fuels, experience related to the fuel technology and take an ARB fuel life cycle verification training for specific feedstock and fuel combinations, and receive a passing score of greater than an unweighted 70% on an exit examination. If the applicant does not pass the exam after the training, they may retake the exam a second time. Only one retake of the examination is allowed before the applicant is required to retake the applicable ARB-approved fuel life cycle verification training.

(d) An ARB accredited verifying body may employ the services of or contract with technical experts not accredited by the ARB to assist with validation or verification services.

(1) All technical experts must be listed on the Notice of Verification Services required in section 95499(a), and must be included in the evaluation for conflict of interest as required in section 95501.

(2) Technical experts must be under the direct supervision of an ARB accredited verifier while performing verification activities.

(3) Technical experts may assist in verification services under this article, but may not be responsible for completing any verification services as defined under section 95499.

(g) "Direct supervision", for purposes of this section, means daily, on-site close contact with an ARB accredited verifier acting as a supervisor, who is able to respond to the needs of the technical expert. The supervisor must be physically present, or within 4 hours travel time and available to respond to the needs of the technical expert.

(h) "Technical expert", for purposes of this section, mean a person, who is not an ARB accredited verifier, and has demonstrated expertise in a particular technical area for which the person is hired by the verification body to assist with underlying verification task(s) that require a particular expertise. A technical expert may be an employee of the verification body working to get the required experience to become an ARB accredited verifier.

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, 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).

§ 95501. Conflict of Interest Requirements for Verification Bodies.

(a) The conflict of interest provisions of this section shall apply to verification bodies, lead verifiers, and verifiers accredited by ARB to perform verification services for responsible parties. Any individual person or company that is hired by a responsible party to contract with a verification body on behalf of the responsible parties are subject to the conflict of interest assessment in this article. In such instances, the verification body must assess the potential conflict of interest between itself and the contracting entity over the two-year verification cycle. The verification body must address the potential conflict of interest between the responsible party in writing and signed by the contracting entity.

(b) The potential for a conflict of interest must be deemed to be high where:

(1) The verification body and responsible party share any management staff or board of directors membership, or any of the senior management staff of the responsible party have been employed by the verification body, or vice versa, within the previous five years; or

(2) Any employee of the verification body, or any employee of a related entity, or a subcontractor who is a member of the verification team has provided to the responsible party any of the following services within the previous five years:

(A) Designing, developing, implementing, reviewing, or maintaining an inventory or information or data management system for carbon intensity calculations, fuel volume measurements and fuel volume reporting, or credit generation, unless the review was part of providing carbon intensity and/or fuel volume verification services;

(B) Developing life cycle analysis parameters for CA-GREET carbon intensity calculations and pathway certification or related engineering analysis for carbon intensity values and fuel volume determination, including developing or reviewing a California Environmental Quality Act (CEQA) greenhouse gas analysis that includes facility specific information;

(C) Designing, developing, implementing, conducting an internal audit, consulting, or maintaining a GHG emissions reduction or GHG removal offset project as defined in the cap-and-trade regulation;

(D) Owning, buying, selling, trading, or retiring fuel facility shares, stocks, LCFS credits or emissions reduction credits from an offset project that was developed by the responsible party; or participation within the LCFS credits market;

(E) Dealing in or being a promoter of LCFS credits on behalf of the responsible party, project operator or authorized project designee where the credits are owned by the responsible party;

(F) Preparing or producing carbon intensity calculations, fuel volume determination, and credit generation manuals, handbooks, or procedures specifically for the responsible party;

(G) Appraisal services of credit generation from carbon intensity and reported fuel volumes, liabilities or assets;

(H) Brokering in, advising on, or assisting in any way in LCFS credit generation from both a carbon intensity value and LRT-CBTS reported fuel volumes, or credit trading;

(I) Directly managing any health, environment or safety functions for the responsible party;

(J) Bookkeeping or other services related to accounting records or financial statements;

(K) Any service related to feedstock and/or fuel analytical testing for chemical composition to support the carbon intensity calculations or fuel volume determination.

(L) Appraisal and valuation services, both tangible and intangible;

(M) Fairness opinions and contribution-in-kind reports in which the verification body has provided its opinion on the adequacy of consideration in a transaction, unless the resulting services will not be part of the verification process;

(N) Any actuarially oriented advisory service involving the determination of amounts recorded in financial statements and related accounts;

(O) Any internal audit service that has been outsourced by the responsible party for internal accounting controls, financial systems or financial statements, unless the result of those services will not be part of the verification process;

(P) Acting as a broker-dealer (registered or unregistered), promoter or underwriter on behalf of the responsible party;

(Q) Any legal services;

(R) Expert services to the responsible party a trade or membership group to which the responsible party or a legal representative for the purpose of advocating the responsible party interests in litigation or in a regulatory or administrative proceeding or investigation.

(S) Verification services that are not conducted in accordance with, or equivalent to, section 95501 requirements, unless the systems and data reviewed during those services, as well as the result of those services, will not be part of the verification process.

"Member" for the purposes of this section means any employee or subcontractor of the verification body or related entities of the verification body. "Member" also includes any individual with majority equity share in the verification body or its related entities. "Related entity" for the purposes of this section means any direct parent company, direct subsidiary, or sister company.

(3) The potential for conflict of interest shall be deemed to be high when any staff member of the verification body provides any type of non-monetary incentive to a responsible party to secure a verification services contract.

(4) The potential for a conflict of interest shall also be deemed to be high where any staff member of the verification body has provided verification services for the responsible party except within the time periods in which any of these parties and entities is allowed to use the same verification body as specified in section 95490(a).

(c) The potential for a conflict of interest shall be deemed to be low where the following conditions are met:

(1) No potential for a high conflict of interest is found pursuant to section 95501(b); and

(2) Any services provided by any member of the verification body or verification team to the responsible party, within the last five years, are valued at less than 20 percent of the fee for the proposed verification services. Any verification conducted in accordance with, or equivalent to, section 95501 provided by the verification body or verification team outside the jurisdiction of ARB is excluded from this financial assessment but must be disclosed to ARB in accordance with section 95501(e).

(3) Non-ARB verification services are deemed to be low risk if those services are conducted in accordance with, or equivalent to, section 95501, including, but not limited to, third-party certification of environmental management system under ISO 14001 or energy management system under 50001 standards.

(d) The potential for a conflict of interest shall be deemed to be medium where the potential for a conflict of interest is not deemed to be either high or low as specified in sections 95501(b) and 95501(c). The potential for conflict of interest will also be deemed to be medium where there are any instances of personal or familial relationships between the members of the verification body and management or staff of the responsible party and when a conflict of interest self-evaluation is submitted pursuant to section 95501(h).

(1) If a verification body identifies a medium potential for conflict of interest and intends to provide verification services for the responsible party, the verification body shall submit, in addition to the submittal requirements specified in section 95501(e), a plan to avoid, neutralize, or mitigate the potential conflict of interest situation. At a minimum, the conflict of interest mitigation plan shall include:

(A) A demonstration that any individuals with potential conflicts have been removed and insulated from the project.

(B) An explanation of any changes to the organizational structure or verification body to remove the potential conflict of interest. A demonstration that any unit with potential conflicts has been divested or moved into an independent entity or any subcontractor with potential conflicts has been removed.

(C) Any other circumstance that specifically addresses other sources for potential conflict of interest.

(2) As provided in section 95501(f)(4), the Executive Officer shall evaluate the conflict of interest mitigation plan and determine whether verification services may proceed.

(e) Conflict of Interest Submittal Requirements for Accredited Verification Bodies.

(1) Before the start of any work related to providing verification services to a responsible party, a verification body must first be authorized in writing by the Executive Officer to provide verification services. To obtain authorization, the verification body shall submit to the Executive Officer a self-evaluation of the potential for any conflict of interest that the verification body, related entities, or any subcontractors performing verification services may have with the responsible party. The submittal shall include the following:

(A) Identification of whether the potential for conflict of interest is high, low, or medium based on factors specified in sections 95501(b), (c), and (d);

(B) Identification of whether the verification body, related entities, or any member of the verification team has previously provided verification services for the responsible party and, if so, provide a description of such services and the years in which such services were provided;

(C) Identification of whether any member of the verification team, verification body, or related entity has engaged in services of any nature, other than ARB verification services, with the responsible party within or outside California during the previous five years. If services other than ARB verification services have previously been provided, the following information shall also be submitted:

1. Identification of the nature and location of the work performed for the responsible party and whether the work is

similar to the type of work to be performed during verification, such as consultation services for fuel pathway submittal and certification, outsourcing for data generation of carbon intensity parameters to support reductions in carbon intensity value, any work related to fuel volume reporting and credit generation pursuant to this article;

2. The nature of past, present or future relationships of any member of the verification team, verification body, or related entities with the responsible party including:

a. Instances when any member of the verification team, verification body, or related entities has performed or intends to perform work for the responsible party;

b. Identification of whether work is currently being performed for the responsible party, and if so, the nature of the work;

c. How much work was performed for the responsible party in the last five years, in dollars;

d. Whether any member of the verification team, verification body, or related entities has contracts or other arrangements to perform work for the responsible party;

e. How much work related to greenhouse gases the verification team has performed for the responsible party in the last five years, in dollars.

3. Explanation of how the amount and nature of work previously performed is such that any member of the verification team's credibility and lack of bias should not be under question.

(A) A list of names of the staff that would perform verification services for the responsible party, and a description of any instances of personal or family relationships with management or employees of the responsible party that potentially represent a conflict of interest; and,

(B) Identification of any other circumstances known to the verification body, responsible party that could result in a conflict of interest.

(C) Attest, in writing, to ARB as follows:

I certify under penalty of perjury under the laws of the State of California the information provided in the Conflict of Interest submittal is true, accurate, and complete.

(f) Conflict of Interest Determinations. The Executive Officer must review the self-evaluation submitted by the verification body and determine whether the verification body is authorized to perform verification services for the responsible party.

(1) The Executive Officer shall notify the verification body in writing when the conflict of interest evaluation information submitted under section 95501(e) is deemed complete. Within 30 working days of deeming the information complete, the Executive Officer shall determine whether the verification body is authorized to proceed with verification and must so notify the verification body.

(2) If the Executive Officer determines the verification body or any member of the verification team meets the criteria specified in section 95501(b), the Executive Officer shall find a high potential conflict of interest and verification services may not proceed.

(3) If the Executive Officer determines that there is a low potential conflict of interest, verification services may proceed.

(4) If the Executive Officer determines that the verification body and verification team have a medium potential for a conflict of interest, the Executive Officer shall evaluate the conflict of interest mitigation plan submitted pursuant to section 95501(d), and may request additional information from the applicant to complete the determination. In determining whether verification services may proceed, the Executive Officer may consider factors including, but not limited to, the nature of previous work performed, the current and past relationships between the verification body, related entities, and its subcontractors with the responsible party and the cost of the verification services to be performed. If the Executive Officer determines that these factors when considered in combination demonstrate an acceptable level of potential conflict of interest, the Executive Officer will authorize the verification body to provide verification services.

(5) If the verification body does not accurately disclose information from this section, the Executive Officer may invalidate the conflict of interest submittal and require that a different verification body perform validation/verification services.

(g) Monitoring Conflict of Interest Situations.

(1) After commencement of verification services, the verification body shall monitor and immediately make full disclosure in writing to the Executive Officer regarding any potential for a conflict of interest situation that arises. This disclosure shall include a description of actions that the verification body has taken or proposes to take to avoid, neutralize, or mitigate the potential for a conflict of interest.

(2) The verification body shall continue to monitor arrangements or relationships that may be present for a period of one year after the completion of verification services. During that period, within 30 days of the verification body or any verification team member entering into any contract with the responsible party for which the body has provided verification services, the verification body shall notify the Executive Officer of the contract and the nature of the work to be performed, and revenue received. The Executive Officer, within 30 working days, will determine the level of conflict using the criteria in section 95501(a)-(d), if the responsible party must re-verify their quarterly or biennial verification statement, and if accreditation revocation is warranted.

(3) The verification body shall notify the Executive Office, within 30 days, of any emerging conflicts of interest during the time verification services are being provided.

(A) If the Executive Officer determines that a disclosed emerging potential conflict is medium risk and this risk can be mitigated, the verification body is deemed to have met the conflict of interest requirements to continue to provide verification services to the responsible party and will not be subject to suspension or revocation of accreditation as specified in section 95500.

(B) If the Executive Officer determines that a disclosed emerging potential conflict is medium or high risk and this risk cannot be mitigated, the verification body will not be able to continue to provide verification services to the responsible party, and may be subject to suspension or revocation of accreditation under section 95500.

(4) The verification body shall report to the Executive Officer any changes in its organizational structure, including mergers, acquisitions, or divestitures, for one year after completion of verification services.

(5) The Executive Officer may invalidate a verification finding if a potential conflict of interest has arisen for any member of the verification team. In such a case, the responsible party shall be provided 90 days to complete re-verification.

(6) If the verification body or its subcontractor(s) are found to have violated the conflict of interest requirements of this article, the Executive Officer may rescind accreditation of the body, its verifier staff, or its subcontractor(s) as provided in section 95500.

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, 41510, 41511, 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).