# PRELIMINARY DRAFT OF POTENTIAL REGULATORY AMENDMENTS TO THE LOW CARBON FUEL STANDARD

The draft regulatory amendment language in this document reflects CARB staff's ongoing preliminary development of concepts under consideration for a potential LCFS amendment package proposal.

New regulatory text is shown in underlined font to indicate additions to, and in ~~strikeout to show deletions from,~~ existing text that was adopted in 2015.

Introductory notes to each section appear in text boxes with blue font. This language is not to be included in the proposed regulation order but is provided here to assist and orient readers in identifying the content and suggested changes in that section.

Stakeholder feedback on these concepts is appreciated by October 6, 2017.

# LOW CARBON FUEL STANDARD

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## 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).

Section 95481 contains new definitions pertaining to the verification program, new fuels, and updates to improve clarity, particularly with respect to the roles of various entities who participate in the LCFS. Entity definitions given here have been updated throughout the draft regulation order.

### § 95481. Definitions and Acronyms.

(a) *Definitions.* For the purposes of sections 95480 through ~~95497~~ 95504, 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~~ 95504:

~~(1)~~ "Above ~~t~~The ~~r~~Rack" means sales of 10,000 gallons or more of diesel fuel or CARBOB at pipeline origin points, pipeline batches in transit, and at terminal tanks before the diesel or CARBOB 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.

"Adverse Fuel Pathway Validation Statement" means a statement rendered by a verification body attesting that: (1) the verification body cannot say, with reasonable assurance, that the calculated CI is free of material misstatement, or (2) the CI data submitted in the application contains correctable errors, or (3) both. Entities that receive an adverse fuel pathway validation statement due to correctable errors are not in conformance with the requirement to fix such errors pursuant to section 95500(h).

"Adverse Fuel Pathway Verification Statement" means a statement rendered by a verification body attesting that: (1) the verification body cannot say, with reasonable assurance, that the calculated CI is free of material misstatement, or (2) the CI data submitted in the fuel pathway report contain correctable errors, or (3) both. Entities that receive an adverse fuel pathway verification statement due to correctable errors are not in conformance with the requirement to fix such errors pursuant to section 95500(h).

"Adverse Transactions Data Verification Statement" means a statement rendered by a verification body attesting that: (1) the verification body cannot say, with reasonable assurance, that each quarterly fuel quantity per FPC as listed in section 95500(c) is free of material misstatement, or (2) the data submitted as part of quarterly fuel transactions reports contains correctable errors, or (3) both. Entities that receive an adverse transactions data verification statement due to correctable errors are not in conformance with the requirement to fix such errors pursuant to section 95500(h).

"Adverse Project Data Verification Statement" means a statement rendered by a verification body attesting that: (1) the verification body cannot say, with reasonable assurance, that the reported total GHG emission reductions or total GHG removal enhancements is free of material misstatement, or (2) the data submitted as part of the project report contains correctable errors, or (3) both. Entities that receive an adverse project data verification statement due to correctable errors are not in conformance with the requirement to fix such errors pursuant to section 95500(h).

~~(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.

~~(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 ~~f~~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~~13).

"Alternative Jet Fuel" means drop-in fuels made from petroleum or non-petroleum (biogenic) sources, which can replace conventional jet fuels without the need to modify aircraft engines and existing fuel distribution infrastructure.

"Animal Fat" means the inedible fat that originates from a rendering facility as a product of rendering the by-products from meat processing facilities including animal parts, fat and bone. The primary animal fats used in the biofuel industry include inedible tallow from processing cattle, inedible choice white grease from swine processing, and inedible poultry fat. "Yellow grease" must be characterized as animal fat if evidence is not provided to the verifier or ARB to confirm that it is solely UCO.

~~(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.

"Aviation Gasoline" means a complex mixture of volatile hydrocarbons, with or without additives, suitably blended to be used in aviation reciprocating engines. Specifications can be found in ASTM Specification D910-17, Standard Specification for Aviation Gasolines, which is incorporated herein by reference.

~~(7)~~ "Battery ~~e~~Electric ~~v~~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 ~~d~~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~~ means methane derived from biogas or gasification of renewable resources ~~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~~ that has been upgraded to meet pipeline quality natural gas standards. Biomethane contains all of the renewable attributes associated with biogas and is also referred to as renewable natural 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~~3.0 (CA-GREET ~~2.0-T1 or CA-GREET2.0-T2~~3.0) model, (~~September 29, 2015~~XX XX, 2017), 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.~~
"LCFS Credit Broker" is a person registered in the LRT-CBTS specifically to facilitate the transfer of LCFS credits between LRT-CBTS accounts.

"Calendar Year" means the time period from January 1 through December 31.

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

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

"Certification Body" means an entity participating in a certification system selected by the Executive Officer pursuant to section 95504 to include LCFS validation and verification services in its certification system.

"Chain-of-custody evidence for feedstocks" means either: (1) delivery records that show shipments of feedstock type and quantity directly from the point of origin to the fuel producer or (2) information from material balance or energy balance systems that control and record the assignment of input characteristics to output quantities at relevant points along the feedstock supply chain.

"Chain-of-Custody Evidence for Produced Fuel" means either: (1) delivery records that show shipments of fuel quantities per fuel pathway code directly from the point of production, through an importer if applicable, to a point of sale in California for use as a transportation fuel or (2) information from material balance or energy balance systems that control and record the assignment of input characteristics to output quantities at relevant points along the fuel supply chain into California.

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

"Conflict of Interest" means a situation in which, because of financial or other activities or relationships with other persons or organizations, a person or body is unable, or potentially unable, to render an impartial validation or verification statement on a potential client's LCFS data report,

or the person or body's objectivity in performing validation or verification services is, or might be, otherwise compromised.

"Conventional Jet Fuel" means a quality kerosene product with an average specific gravity of 40.7 API, and ten percent distillation temperature of 400 degrees Fahrenheit and an end-point of 572 degrees Fahrenheit. Jet fuel includes Commercial and Military Jet Fuel. Commercial Jet Fuel includes products known as Jet A, Jet A-1, and Jet B. Military Jet Fuel includes products known as JP-5 and JP-8.

"Correctable Errors" means errors identified by the verification team that affect data subject to validation or verification as specified in section 95500 that result from a nonconformance with this article. Differences that, in the professional judgment of the verification team, are the result of differing but reasonable methods of truncation or rounding or averaging, where a specific procedure is not prescribed by this article, are not considered errors and therefore do not require correction.

~~(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~~ a fuel reporting entity or a project operator that generates LCFS credit in the LCFS program.

~~(24)~~ "Credits" and "~~d~~Deficits" mean the measures used for determining a regulated ~~party's~~ entity'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).

"Consumer Price Index for All Urban Consumers" means a measure that examines the changes in the price of a basket of goods and services purchased by urban consumers, and is published by the U.S. Bureau of Labor Statistics.

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

"Deficit Generator" means a fuel reporting entity who generates deficits in the LCFS program.

"Designee" is an entity authorized by a fuel reporting entity to act on their behalf in the LCFS program.

~~(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.

"Distiller's Corn Oil" has the same meaning as "Technical Corn Oil"

~~(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 California Air Resources Board, or his or her designee.

"Exchange" means a central marketplace with established rules and regulations where buyers and sellers meet to conduct trades.

"Export" means transportation fuel reported in the LCFS program that is subsequently delivered outside of California and not used for transportation in California.

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

"First-collection Point" means the facility that aggregates and stores or treats feedstock materials collected from a point of origin.

"First Fuel Reporting Entity" means the entity that initiates a chain-of-custody within the LRT-CBTS for a given amount of fuel. This entity initially holds the obligation as a credit or deficit generator for this fuel, but may transfer these obligations under certain conditions pursuant to sections 95483 or 95483.1.

"Fuel Reporting Entity" is an entity that is required to report fuel transactions in the LCFS program.

"Fish Oil" means the fat that originates from fish processing operations as a product of rendering fat from residual fish parts.

~~(35)~~ "Fixed ~~g~~Guideway ~~s~~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.~~

"Total Obligated Amount" means the difference between the amount reported for each FPC using transaction types with positive obligation (Production in California, Production for Import, Import, Purchased with Obligation, Gain of Inventory) and amount reported with transaction types with negative obligation (Sold with Obligation, Loss of Inventory, Export, Not Used for Transportation).

"Total Amount" means the difference between the amount reported for each FPC using transaction types Production in California, Production for Import, Import, Purchased with Obligation, Purchased without Obligation, and Gain of Inventory and amount reported with transaction types Sold with Obligation, Sold without Obligation, Loss of Inventory, Export, and Not Used for Transportation.

"Fuel Pathway Applicant" refers to an entity that has registered in AFP and has submitted an application including all required documents and attestations in support of the application requesting a certified fuel pathway.

~~(40)~~ "Fuel Pathway Code" means the identifier in the LRT-CBTS that applies to a specific fuel pathway approved pursuant to sections 95488 through 95488.9.

"Fuel Pathway Holder" refers to either 1) a fuel pathway applicant that has received a certified fuel pathway code, including a Provisional fuel pathway code, or 2) a fuel reporting entity using a Temporary or Lookup Table fuel pathway code for reporting fuel in the LCFS program.

"Fuel Reporting Entity" is an entity that is required to report fuel in the LCFS program.

~~(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~~ fuel pathway holder 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 ~~f~~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 ~~e~~Electric ~~v~~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.

"Independent Reviewer" has the same meaning as "lead verifier independent reviewer."

"Ineligible ~~s~~Specified ~~s~~Source ~~f~~Feedstocks" means feedstocks specified in section 95488.7(g)(1)(A) that do not meet the chain-of-custody documentation requirements specified in section 95488.7(g)(1)(B).

~~(48)~~ "Intermediate ~~c~~Calculated ~~v~~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).

"Joint Applicant" refers to an entity that elects to or is required to be a fuel pathway applicant, fuel pathway holder or project operator along with another entity.

"Lead Verifier" means a person that has met all of the requirements in section 95501 and who may act as the lead verifier of a verification team providing validation or verification services or as a lead verifier providing an independent review of validation or verification services rendered.

~~(49)~~ "Life ~~c~~Cycle ~~g~~Greenhouse ~~g~~Gas ~~e~~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).

"Mandatory Reporting Regulation" or "MRR" means ARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions as set forth in title 17, California Code of Regulations, chapter 1, subchapter 10, article 2 (commencing with section 95100)

"Material Misstatement of Carbon Intensity" means any discrepancy, omission, or misreporting, or aggregation of the three, identified in the course of validation or verification services that leads a verification team to believe that the reported CI calculation ($gCO_2e/MJ$) contains errors greater than 5 percent. Material misstatement is calculated separately for each CI and each quarterly fuel quantity per FPC.

"Material Misstatement of Quarterly Fuel Quantity" means any discrepancy, omission, or misreporting, or aggregation of the three, identified in the course of validation or verification services that leads a verification team to believe that the reported fuel quantity per FPC per quarter contains errors greater than 5 percent, as applicable. Material

misstatement is calculated separately for each CI and each quarterly fuel quantity per FPC.

Material Misstatement of Project Data" see "Project Material Misstatement."

~~(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 ~~v~~Vehicle" has the same meaning as defined in section 415 of the Vehicle Code.

~~(57)~~ "Multi-fuel ~~v~~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, most plug-in hybrid electric vehicles use both electricity and gasoline as the fuel source and can be "refueled" using two separately distinct fueling ports.

~~(58)~~ "Natural ~~g~~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.

"Nonconformance" means the failure to use the methods specified in this subarticle, or the failure to meet any other requirements of the regulation.

~~(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 2.0 ~~1.1 Draft E (April 6, 2015)~~ posted at http://www.arb.ca.gov/fuels/lcfs/lcfs.htm, which is hereby incorporated by reference.

"Opt-in Fuel Reporting Entity" is an entity that meets the requirements of section 95483.1 and voluntarily opts in to be a fuel reporting entity and be willing to be subject to the requirements set forth in this subarticle.

"Opt-in Project" is a project approved for generating LCFS credits by the Executive Officer pursuant to sections 95489 or 95490.

"Performance Review" means an assessment conducted by ARB of an applicant seeking to become accredited or reaccredited as a verification body or lead verifier pursuant to section 95502 of this subarticle or seeking to become selected as a certification system pursuant to section 95504 of this subarticle. Such an assessment may include a review of applicable past sampling plans, validation and verification reports, validation and verification statements, conflict of interest submittals, and additional information or documentation regarding the applicant's fitness for qualification.

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

~~(63)~~ "Petroleum ~~p~~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.

"Positive Fuel Pathway Validation Statement" means a statement rendered by a verification body attesting that the verification body can say with reasonable assurance that the calculated CI is free of material misstatement and that the data submitted in the application conforms to the requirements of this article.

"Positive Fuel Pathway Verification Statement" means a statement rendered by a verification body attesting that the verification body can say with reasonable assurance that the calculated CI is free of material misstatement and that the data submitted in the fuel pathway report conforms to the requirements of this article.

"Positive Transactions Data Verification Statement" means a statement rendered by a verification body attesting that the verification body can say

with reasonable assurance that each quarterly fuel quantity per FPC as listed in section 95500(c) is free of material misstatement and that the submitted quarterly fuel transactions reports or, the annual report if corrections have been made to quarterly data, conforms to the regulatory requirements of this article.

"Positive Project Data Verification Statement" means a statement rendered by a verification body attesting that the verification body can say with reasonable assurance that the total GHG emission reductions or total GHG removal enhancements is free of material misstatement and that the submitted project report conforms to the regulatory requirements of this article.

~~(65)~~ "Private ~~a~~Access ~~f~~Fueling ~~f~~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~~ fuel reporting entity to the recipient of the fuel. A PTD is created by a ~~regulated party~~ fuel reporting entity to contain information collectively supplied by other fuel transaction documents, including bills of lading, invoices, contracts, meter tickets, rail inventory sheets, Renewable Fuels Standard (RFS~~2~~) product transfer documents, etc.

~~(68)~~ "Production ~~f~~Facility" means, with respect to any fuel ~~(other than CNG, LNG and L-CNG),~~ a facility at which the fuel is produced or a facility from which site-specific data is used in determination of a fuel pathway carbon intensity. "Production facility" ~~means, with respect to natural gas (CNG, LNG, L-CNG, or biomethane),~~ includes a facility at which ~~fuel~~ a material is converted, compressed, liquefied, refined, treated, or otherwise processed to produce a fuel or intermediate chemical that may be further processed into a fuel. ~~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.~~

"Professional Judgment" means the ability to render sound decisions based on professional qualifications and relevant life cycle greenhouse gas accounting or auditing experience.

"Project Material Misstatement" means a discrepancy, omission, misreporting, or aggregation of the three, identified in the course of project verification services that leads a verification team to believe that a Project Report contains errors resulting in an overstatement of the reported total GHG emission reductions or GHG removal enhancements greater than 5 percent. Discrepancies, omissions, or misreporting, or an aggregation of the three, that result in an understatement of total reported GHG emission reductions or GHG removal enhancements in the Project Report is not a project material misstatement.

"Project Operator" means an entity that registers an opt-in project in AFP and has it approved for generating LCFS credits. Project operator must meet the requirements of section 95483.1(a)(5) and be willing to be subject to the requirements set forth in this subarticle.

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

"Qualified Positive Fuel Pathway Validation Statement" means a statement rendered by a verification body attesting that the verification body can say with reasonable assurance that the calculated CI is free of material misstatement and contains no correctable errors, but the data submitted in the application may include one or more other nonconformances with the requirements of this subarticle which do not result in a material misstatement.

"Qualified Positive Fuel Pathway Verification Statement" means a statement rendered by a verification body attesting that the verification body can say with reasonable assurance that the calculated CI is free of material misstatement and that the data submitted in the fuel pathway report contains no correctable errors, but the data may include one or more other nonconformances with the requirements of this subarticle, which do not result in a material misstatement.

"Qualified Positive Transactions Data Verification Statement" means a statement rendered by a verification body attesting that the verification body can say with reasonable assurance that each quarterly fuel quantity per FPC as listed in section 95500(c) is free of material misstatement and that the submitted quarterly fuel transactions reports or, the annual report if corrections have been made to quarterly data, contain no correctable errors, but the data may include one or more other nonconformances with the requirements of this subarticle which do not result in a material misstatement.

"Qualified Positive Project Data Verification Statement" means a statement rendered by a verification body attesting that the verification

body can say with reasonable assurance that the total GHG emission reductions or total GHG removal enhancements is free of material misstatement and that the submitted project report contains no correctable errors, but the data may include one or more other nonconformances with the requirements of this subarticle which do not result in a material misstatement.

"Reasonable Assurance" means a high degree of confidence that submitted data and statements are valid.

~~(70) "Regulated pParty" means a person who, pursuant to section 95483 or 95483.1, must meet the average carbon intensity requirements in section 95484.~~
"Regulated Entity" means an entity subject to any requirement pursuant to this subarticle.

~~(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.

"Renewable Propane" means propane that is produced from nonpetroleum renewable resources.

~~(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.~~

~~(73) "Single fFuel vVehicle" 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.~~

"Specified source feedstocks" means feedstocks that require the chain of custody evidence specified in 95488.7(g)(1)(B), in order to be eligible for a reduced CI that reflects the lower emissions or credit associated with the use of a waste, residue, by-product or similar material. Specified source feedstocks are specified in section 95488.7(g)(1)(A).

~~(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.

"Technical Corn Oil" means inedible oil recovered from thin stillage or the distiller's grains and solubles produced by a dry mill corn ethanol plant,

termed distiller's corn oil (DCO), or other non-food grade corn oil from food processing operations.

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

~~(76)~~ "Transaction ~~Quantity~~ Amount" means the ~~amount~~ quantity of fuel reported in a transaction. A Transaction ~~Quantity~~ Amount 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~~ fuel reporting entity;
~~(E)~~ "Purchased without Obligation" means the transportation fuel was purchased without the compliance obligation from a ~~reporting party~~ fuel reporting entity;
~~(F)~~ "Sold with Obligation" means the transportation fuel was sold with the compliance obligation by a ~~reporting party~~ fuel reporting entity;
~~(G)~~ "Sold without Obligation" means the transportation fuel was sold without the compliance obligation by a ~~reporting party~~ fuel reporting entity;
~~(H)~~ "Export" means ~~a transportation fuel was reported with compliance obligation under the LCFS but was later exported outside of California;~~ any fuel reported in the LCFS program which is subsequently delivered outside of California and is not used for transportation in 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.

"HV Fueling" means the dispensing of hydrogen at a fueling station designed for fueling hydrogen fuel cell electric vehicles.

"Propane Fueling" means the dispensing of propane at a fueling station designed for fueling propane 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 ~~f~~Fuel" means any fuel used or intended for use as a motor vehicle fuel or for transportation purposes in a non-vehicular source.

"Uncertainty" means the degree to which data or a data system is deemed to be indefinite or unreliable.

"Used Cooking Oil" means fats and oils originating from commercial or industrial food processing operations, including restaurants, that have been used for cooking or frying. UCO does not contain any other fats, oils, or greases that were not previously used for cooking or frying operations.

"Verification" means a systematic, independent and documented process for evaluation of a responsible entity's reported data against requirements specified in this subarticle.

"Verification Body" means an entity accredited by the Executive Officer that is able to render a validation or verification statement and provide validation or verification services to entities responsible for validation or verification.

"Verification Services" means services provided during validation or verification as specified in section 95501 beginning with the development of the validation or verification plan to submitting a validation or verification statement to ARB.

"Verification Team" means all of those working for a verification body or certification body, including all subcontractors, to provide validation or verification services to the entity responsible for validation or verification.

"Verifier Review" means a verifier conducts all reviews and services specified in section 95501, except the material misstatement assessment under section 95501(b)(10) through (12). If some of the data sources are selected for data checks based on the sampling plan, the verifier will check for conformance with the requirements of this subarticle.

"Yellow Grease" means a commodity produced from a mixture of: (1) used cooking oil, and (2) rendered animal fats that were not used for cooking. This mixture often is combined from multiple points of origin. Yellow grease must be characterized as "animal fat" if evidence is not provided to the verifier or ARB to confirm that it is solely UCO.

(b) *Acronyms.* For the purposes of sections 95480 through 95~~497~~501, the following acronyms apply.

"AEZ-EF" means Agro-Ecological Zone Emissions Factor model.
"AltJF" means Alternative Jet Fuel.
"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.
"CEC" means California Energy Commission.
"CFR" means Code of Federal Regulations.
"CI" means carbon intensity.
"CNG" means compressed natural gas.
"DCO" means Distiller's Corn Oil or Technical Corn Oil.
"EER" means energy economy ratio.
"EV" means electric vehicle.
"FCV" means fuel cell vehicles.
"FPC" means fuel pathway code.
"FSE" means fueling supply equipment.
"$gCO_2e/MJ$" means grams of carbon dioxide equivalent per megajoule.
"GTAP" means the Global Trade Analysis Project model.
"GTSR" means the Green Tariff Shared Renewables program.
"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.
"HV" means hydrogen vehicle.
"ICEV" means internal combustion engine vehicle.
"iLUC" means indirect land use change.
"LCA" means life cycle analysis.
"LCFS" means Low Carbon Fuel Standard.
"LDV" means light-duty vehicles.
"LDMS" means LCFS Data Management Systems.
"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.
"LVP" means LCFS Verification Portal.
"MCON" means marketable crude oil name.
"MDV" means medium-duty vehicles.
"MMBtu" means million British Thermal Units.
"MRR" Mandatory Greenhouse Gas Reporting Regulation
"MT" means metric tons of carbon dioxide equivalent.
"NG" means natural gas.
"NGV" means a natural gas vehicle.
"OPGEE" means Oil Production Greenhouse gas Emissions Estimator Model
"PHEV" means plug-in hybrid vehicles.
"RNG" means renewable natural gas or biomethane.
"UCO" means Used Cooking Oil.
"TEOR" means thermally enhanced oil recovery.
"TRU" means Transport Refrigeration Unit.
"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).

This section has been updated to reflect changes to the types of fuels used in California which are required to, or may voluntarily, report to the LCFS for credit or deficit generation.

**§ 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 9550495497 (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~~fuel reporting entity defined in section 95481 and specified in section 95483, is responsible for reporting 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)~~(7) A fuel blend containing greater than 10 percent ethanol by volume;
~~(9)~~(8) A fuel blend containing biomass-based diesel;
~~(10)~~(9) Denatured fuel ethanol ("E100");
~~(11)~~(10) Neat biomass-based diesel ("B100");~~ and~~
(11) Alternative Jet Fuel;
(12) Propane; and
~~(12)~~(13) 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~~2030. 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~~ opt-in fuel reporting entity pursuant to section 95483.1 and meeting the requirements of this regulation:

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

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

(1) An alternative fuel that:

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

A ~~regulated party~~ fuel reporting entity 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~~entity.

(2) ~~Liquefied petroleum gas (LPG or "propane").~~Conventional jet fuel or aviation gasoline.

(3) Conventional CARBOB and diesel used in 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.

(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;~~
(1~~2~~) Locomotives not subject to the requirements specified in CCR, title 17, section 93117; and
(2~~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).

This section is updated to clearly identify the entities responsible for reporting fuel in the LCFS program and provide clarification on transfer of the reporting requirements to another entity.

**§ 95483. ~~Regulated Parties~~ Fuel Reporting Entities.**

~~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.~~

The purpose of this section is to designate the fuel reporting entities for each type of transportation fuel.

(a) *~~Regulated Parties~~ Fuel Reporting Entities for Gasoline and Diesel*.

(1) *Designation of ~~Producers and Importers as Regulated Parties~~ First Fuel Reporting Entity*.

(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~~ first fuel reporting entity is 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~~ first fuel reporting entity is the producer or importer of the gasoline. Where additional oxygenate is added to gasoline, the ~~regulated party~~ first fuel reporting entity 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~~ first fuel reporting entity is 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~~ first fuel reporting entity is the producer or importer of the diesel fuel.

(2) *Effect of Transfer of CARBOB, Diesel Fuel, or Diesel Fuel Blends by ~~Regulated Party~~ Fuel Reporting Entity.* A person, who acquires ownership of CARBOB from ~~the regulated party~~ a fuel reporting entity, becomes ~~the regulated party~~ a fuel reporting entity for the CARBOB if, by the time ownership is transferred, the two ~~parties~~ entities agree by written contract that the person acquiring ownership accepts the ~~LCFS compliance obligation as the regulated party~~ responsibilities of a deficit generator. A person, who acquires ownership of Diesel Fuel or Diesel Fuel Blends from the ~~regulated party~~ fuel reporting entity above the rack, ~~may~~ becomes ~~the regulated party~~ a fuel reporting entity for the Diesel Fuel or Diesel Fuel Blends if, by the time ownership is transferred, the two ~~parties~~ entities agree by written contract that the person acquiring ownership accepts the responsibilities of a deficit generator ~~LCFS compliance obligation as the regulated party~~. For the transfer of ~~regulated party~~ deficit generator obligations to be effective, the transferor must, at the time of transfer, 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 $\text{Deficits}^{\text{XD}}_{\text{Incremental20XX}}$, 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 $\text{Deficits}^{\text{XD}}_{\text{Base}}$, 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~~ Fuel Reporting Entity 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~~ a Fuel Reporting Entity Unless Specified Conditions are Met.* Except as provided in section 95483(a)(3)(B), when a person who is ~~the regulated party~~ a fuel reporting entity 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~~ person acquiring the ownership of the oxygenate or biomass-based diesel (i.e., the ~~transferee~~ recipient) becomes ~~the regulated party~~ a fuel reporting entity. The transferor must provide the recipient a product transfer document at the time of transfer that prominently states the information specified in section ~~95491(c)(1)~~ 95491.1(b)(1)(A).

(B) *Transfer of Oxygenate or Biomass-Based Diesel and Retaining ~~Compliance Obligation~~ Credit Generator or Deficit Generator Status.* Section 95483(a)(3)(A) notwithstanding, a ~~regulated party~~ fuel reporting entity transferring ownership of oxygenate or Biomass-Based Diesel may elect to ~~remain~~ retain the ~~regulated party~~ credit or deficit generator status ~~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)~~95491.1(b)(1)(B).

(4) *Effect of Transfer by ~~Regulated Party~~ a Fuel Reporting Entity of Gasoline to be Blended with Additional Oxygenate.* A person who is the deficit generator ~~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~~ deficit generator 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~~ entities agree by written contract that the person acquiring ownership accepts the ~~LCFS compliance obligations~~ deficit generator obligations ~~as a regulated party~~ with respect to the gasoline.

(C) The transferor provides the recipient at the time of transfer with 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 $\mathrm{Deficits}^{\mathrm{XD}}_{\mathrm{Base}}$, 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~~ entity 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~~ entities includes an agreement that the recipient of the gasoline will be blending additional oxygenate into the gasoline.

(5) *Fuel Exports*. Entities responsible for reporting exports of fuel that has been reported in the LRT-CBTS are defined below:

(A) When the fuel is sold or delivered above the rack for export, the entity holding title to the fuel as it crosses the border on its way toward the first point of sale/delivery outside of California is responsible for reporting the export in the LRT-CBTS.

(B) When the fuel is sold across the rack for export, the entity holding title to the fuel as the fuel crosses the rack is responsible for reporting the export in the LRT-CBTS.

(C) When the fuel is diverted out-of-state below the rack, the entity holding title to the fuel, as it crosses the border, is responsible for reporting the export in the LRT-CBTS.

(b) *~~Regulated Party~~ Fuel Reporting Entity 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.~~

(1) 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~~ first fuel reporting entity is the producer or importer of the liquid alternative fuel.

(2) *Fuel Exports*. Entities responsible for reporting exports are defined below:

(A) When the fuel is sold or delivered above the rack for export, the entity holding the title of the fuel as it crosses the border on its way toward the first point of sale/delivery is responsible for reporting the export in the LRT-CBTS.

(B) When the fuel is sold across the rack for export, the entity holding the title of the fuel as the fuel crosses the rack is responsible for reporting the export in the LRT-CBTS.

(C) When the fuel is diverted out-of-state below the rack, the entity holding the title of the fuel, as it crosses the border, is responsible for reporting the export in the LRT-CBTS.

(c) *~~Regulated Party~~ Fuel Reporting Entity for Blends of Liquid Alternative Fuels and Gasoline or Diesel Fuel.*

(1) *Designation of ~~Producers and Importers as Regulated Parties~~* First Fuel Reporting Entities. 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~~ first fuel reporting entity 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~~ on Deficit or Credit Generator Status.* 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~~ person acquiring the ownership of such an alternative liquid fuel blend (i.e., the ~~transferee~~ recipient) becomes ~~the regulated party~~ credit or deficit generator for that alternative liquid fuel blend. The transferor shall provide the recipient at the time of transfer with a product transfer document that prominently states the information specified in section ~~95491(c)(1)~~ 95491.1(b)(1)(A).

(3) *Effect of Transfer of a Blend of Liquid Alternative Fuel and Gasoline or Diesel Fuel and Retaining Credit or Deficit Generator Status ~~Compliance Obligation~~.* Section 95483(c)(2) notwithstanding, the transferor may elect to ~~remain the regulated party and~~ retain credit or deficit generator status ~~the LCFS compliance obligation~~ for the transferred alternative liquid fuel 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 section ~~95491(c)(1)~~ 95491.1(b)(1)(B).

(4) *Fuel Exports*. Entities responsible for reporting exports are defined below:

(A) When the fuel is sold or delivered above the rack for export, the entity holding title to the fuel as it crosses the border on its way toward the first point of sale/delivery is responsible for reporting the export in the LRT-CBTS.

(B) When the fuel is sold ~~at~~ across the rack for export, the entity holding title to the fuel as the fuel crosses the rack is responsible for reporting the export in the LRT-CBTS.

(C) When the fuel is diverted out-of-state below the rack, the entity holding title to the fuel, as it crosses the border, is responsible for reporting the export in the LRT-CBTS.

(d) ~~*Regulated Party*~~ *Designation of Fuel Reporting Entity for Natural Gas (Including CNG, LNG, L-CNG, and Biomethane).*

(1) *Designation of ~~Regulated Party~~ First Fuel Reporting Entity 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~~ fuel reporting entity is 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 or his/her designee; 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~~ first fuel reporting entity 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 or his/her designee.

(2) *Designation of ~~Regulated Party~~ First Fuel Reporting Entity 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~~ first fuel reporting entity 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~~ first fuel reporting entity 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 Party~~ First Fuel Reporting Entity 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~~.~~,* the first fuel reporting entity is the following:

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~~ first fuel reporting entity 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~~ First Fuel Reporting Entity 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~~ first fuel reporting entity is the producer of the bio-CNG or bio~~gas~~-LNG or bio-L-CNG.

(5) *Effect of Transfer of Fuel by ~~Regulated Party~~ a Fuel Reporting Entity for Biomethane.*

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

(B) *Conditions Under Which a Person Acquiring Ownership of a Biomethane Fuel Becomes the ~~Regulated Party~~ Credit Generator.* Notwithstanding the previous subsection (A), a person acquiring

ownership of a fuel specified in section 95483(d)(1) through (4) from ~~the regulated party~~ a fuel reporting entity becomes the ~~regulated party~~ credit generator 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~~ credit generator. For the transfer of ~~regulated party~~ credit generator 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*~~ *Fuel Reporting Entity for Electricity.* For electricity used as a transportation fuel, the ~~party~~ entity who is eligible to generate credits is determined as specified below:

Staff is still considering what additional flexibility may be advisable in this subsection with respect to electricity credit generation from renewable electricity or smart charging. We encourage additional stakeholder input on these topics.

(1) *Residential Charging.* For on-road transportation fuel supplied through electric vehicle (EV) charging in a single- or multi-family residence, the Electrical Distribution Utility is eligible to generate credits in its 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) *Public Access Charging.* For on-road transportation fuel supplied through public access EV charging equipment, any entity may generate credits, providing that only one entity makes such a claim for each piece of charging equipment during a given reporting period. ~~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 eligible to generate the credits for the electricity~~. To receive credit for transportation fuel supplied through public access EV charging equipment, the fuel reporting entity ~~EVSP or Electrical Distribution Utility~~ must meet the requirements set forth in section 95483(e)(1)(B) through (D).

~~(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 written request to opt in and generate credits associated with a specified fleet, the fleet operator is eligible to generate the credits for the electricity. To receive credit for transportation fuel supplied to an EV fleet, an accounting of the number of EVs in the fleet must be included as supplemental information in annual compliance reporting.~~

~~(B) For on-road transportation fuel supplied 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 written request to opt in and generate credits associated with a specific location or locations, the station owner is eligible to generate the credits for the electricity.~~

~~(4)~~(3) *Private Access EV Charging (including EV Fleets).* For on-road transportation fuel supplied through private access EV charging equipment at a business or workplace, any entity may generate credits, providing that only one entity makes such a claim for each piece of charging equipment during a given reporting period. ~~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 written request to opt in and generate credits associated with a specific location or locations, the site host 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 the fuel reporting entity, ~~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)~~(3)(A), above, and an accounting of the number of EVs known to be charging at the business.

~~(5) In the event that there is measured on-road electricity as a transportation fuel that is not covered in subsections 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~~ be the credit generator 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 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, as calculated using a method administered by the Executive Officer, 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 an ~~the~~ electric forklift fleet operator's or his/her designee's written request that it will opt in and generate credits associated with a specified fleet, the fleet operator or his/her designee ~~is~~ becomes 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) For transportation fuel supplied to electric airport ground support equipment, the entity operating the equipment is eligible to generate credits for the electricity. Upon submittal to and approval by the Executive

Officer of the operator's written acknowledgment that it will not opt in and generate credits under this provision, the Electrical Distribution Utility becomes eligible to eligible to generate the credits for the electricity and must meet the requirements set forth in section 95483(e)(1)(B) through (D).

(8) For electricity supplied to electric Transport Refrigeration Unit fleets, the fleet operator is eligible to generate credits for the electricity. Upon submittal to and approval by the Executive Officer of the fleet operator's written acknowledgment that it will not opt in and generate credits under this provision, the Electrical Distribution Utility becomes eligible to generate the credits for the electricity, and must meet the requirements set forth in section 95483(e)(1)(B) through (D).

(9) In the event that there is measured electricity as a transportation fuel that is not covered in subsections 95483(e)(1) through (8) 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*~~ *Fuel Reporting Entity for Hydrogen* ~~*or a Hydrogen Blend.*~~

~~(1) *Designation of Regulated Party at Time Finished Fuel is Created.* For a volume of finished fuel consisting of hydrogen or a blend of hydrogen and another fuel ("finished hydrogen fuel"), the person who owns the finished hydrogen fuel at the time the finished fuel is created is eligible to generate credits. A hydrogen blend is considered to be a finished hydrogen fuel at completion of blending.~~

(1) The first fuel reporting entity is the business or legal entity that operates the fueling equipment ("hydrogen station operator") at the facility at which the 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 delivered to a station operator by a producer or supplier ("hydrogen fuel provider"), the station operator may elect not to be the first fuel reporting entity if the two entities agree by written contract that:

(A) The hydrogen station operator will not generate credits or deficits and will instead provide the amount of hydrogen fuel dispensed, and other required information pursuant to 95491(a), to the upstream hydrogen fuel provider.

(B) The hydrogen fuel provider accepts all LCFS responsibilities and will fulfill these responsibilities on behalf of the hydrogen station operator.

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

(g) *Fuel Reporting Entities for Alternative Jet Fuel or an Alternative Jet Fuel Blend.*

(1) *First Fuel Reporting Entity for Alternative Jet Fuel not Blended with Conventional Jet Fuel.* For an alternative jet fuel that is not blended with conventional jet fuel, the first fuel reporting entity is the producer or importer of the alternative jet fuel that is uploaded to an aircraft in California.

(2) *First Fuel Reporting Entity for Blends of Alternative Jet Fuel and Conventional Jet Fuel.* For a jet fuel that is a blend of alternative jet fuel and conventional jet fuel, the first fuel reporting entity is the following:

(A) For the alternative jet fuel component, the producer or importer of the alternative jet fuel that is uploaded to an aircraft in California; and

(B) The conventional jet fuel component is not subject to the Low Carbon Fuel Standard.

(3) *Effect of Transfer of Alternative Jet Fuel on Credit Generator Status.*

(A) *Transferor Remains Credit Generator Unless Conditions are Met.* When a person who is the credit generator for alternative jet fuel specified in section 95483(g)(1) or (2) transfers ownership of the fuel, the transferor remains the credit generator unless the conditions of the following subsection are met.

(B) *Conditions Under Which a Person Acquiring Ownership of Alternative Jet Fuel Becomes the Credit Generator.* Notwithstanding the previous subsection (A), a person acquiring

ownership of Alternative Jet Fuel specified in section 95483(g)(1) or (2) becomes the credit generator for that fuel if, by the time ownership is transferred, the two parties agree by written contract that the person acquiring ownership accepts the responsibilities as a credit generator. For the transfer of credit generator responsibilities to be effective, the transferor must also provide the recipient a product transfer document that prominently states the information specified in section 95491(c).

(h) *Fuel Reporting Entities for Propane used as a Transportation Fuel.*

(1) *Designation of First Fuel Reporting Entity for Fossil Propane and Renewable Propane.*

(A) *Where Renewable Propane is Used Without Blending with Fossil Propane.* For fuel consisting solely of renewable propane, the first fuel reporting entity is the producer or importer of the renewable propane.

(B) *Where Renewable Propane is Added to Fossil Propane.* For fuel consisting of a fossil propane and renewable propane, the first fuel reporting entity is initially the following:

1. With respect to fossil propane, the entity that owns the propane fueling equipment at the facility at which the fossil propane and renewable propane blend is dispensed to motor vehicles for their transportation use, or his/her designee; and

2. With respect to the renewable propane, the producer or importer of the renewable propane.

(C) *Where No Renewable Propane is Added to Fossil Propane.* For fuel consisting solely of fossil propane, the first fuel reporting entity is the entity that owns the propane fueling equipment at the facility at which the fossil propane is dispensed to motor vehicles for their transportation use, or his/her designee.

(2) *Effect of Transfer of Renewable Propane on Credit Generator Status.*

(A) *Transferor Remains Credit Generator Unless Conditions are Met.* When a fuel reporting entity for a fuel specified in section 95483(h)(1), transfers ownership of the fuel, the transferor remains the credit generator unless the conditions of the following subsection are met.

(B) *Conditions Under Which a Person Acquiring Ownership of a Fuel Becomes the Credit Generator.* Notwithstanding the previous subsection (A), a person acquiring ownership of a fuel specified in section 95483(h)(1) becomes the credit generator for that fuel if, by the time ownership is transferred, the two parties agree by written contract that the person acquiring ownership accepts the responsibilities as the credit generator. For the transfer of credit generator 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).

(i) *Credit or Deficit Generator Status Transfer Period.* For all fuels, the period in which credit or deficit generator status can be transferred to another entity, for a given amount of fuel, is limited to two calendar quarters. This means that, for example, if a first fuel reporting entity takes title to a fuel and initiates the chain of custody for fuel in the LRT-CBTS in one calendar quarter, the status as credit or deficit generator for that amount of fuel can be transferred to another entity no later than the end of the following calendar quarter. After this period is over, the credit and deficit generator status for that amount of fuel cannot be transferred.

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).

Section 95483.1 is updated to establish the eligibility and requirements for opting into LCFS program.

**§ 95483.1. Opt-In ~~Parties~~ Entities.**

(a) *Eligibility.* ~~Only a person who~~ An entity that 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) *Opt-in Fuel Reporting Entity.* An entity meeting the following criteria can opt into the LCFS program in a capacity of fuel reporting entity.

~~(1)~~(A) *Fuel Providers.* ~~A person~~ An entity who provides a fuel specified in section 95482(b) and meets the requirements of section 95483(d)~~, (e) or (f),~~ through (h), whichever applies to that fuel;

~~(2)~~(B) *Out-of-State Producers.* An out-of-state producer of oxygenate for blending with CARBOB or gasoline, or biomass-based diesel for

blending with CARB diesel, who is not otherwise already subject to the LCFS regulation as an importer. An ~~credit generator~~ out-of-sate producer under this subsection may retain the ability to generate credits or deficits ~~compliance obligation~~, for a specific ~~volume~~ amount of fuel or blendstock, only if ~~that person sells the fuel to a regulated party~~ it opts in as a first fuel reporting entity and meets the requirements of section 95483, wherever applicable.

~~(3)~~(C) *Intermediate Entities.* ~~A person who~~ An entity that 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)~~1. The ~~person~~ entity received ownership of the fuel for which the ~~person~~ entity is claiming to generate LCFS credits;

~~(B)~~2. Either:

~~1.~~a. The ~~person~~ entity received the ~~LCFS compliance obligation~~ fuel reporting entity status from a producer that opted in under section 95483.1; or

~~2.~~b. The producer did not opt in under section 95483.1(a)(1).

~~(C)~~3. The ~~person~~ entity actually delivered the fuel or caused the fuel to be delivered to California;

~~(D)~~4. 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)~~5. The ~~person~~ entity is not otherwise already subject to the LCFS regulation as a ~~regulated party~~ fuel reporting entity.

~~(F)~~6. The demonstrations in subsections (A) through (E) above must be made for the specific ~~volume~~ amount of fuel upon which the ~~person~~ entity first elects to opt into the LCFS. For subsequent ~~volumes~~ amounts of fuel for which the ~~person~~ entity is claiming to be the ~~credit generator~~ fuel reporting entity pursuant to this subsection, the ~~person~~ entity 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.~~

(D) *Designee.* A third-party authorized by a fuel reporting entity to act on behalf of the fuel reporting entity in the LCFS program. The designee must obtain a written contract with the reporting entities. All registration and reporting requirements also apply to designees.

~~(5)~~(2) *Project Operators.* An entity, ~~producer of crude oil~~ that ~~has an innovative production method~~ has a project approved for crediting 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).~~ in to the LCFS program as a credit generator.

(b) *Opting in 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~~ opt-in entity 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~~ entity may not report and generate credits and deficits based on transactions that precede the quarter in which the ~~party~~ entity 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~~ entity 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 Procedure*. ~~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:~~ An opt-in entity may decide later to opt-out of the LCFS program by following the following procedure:

(1) ~~*90 Days before Opt-Out Date*~~ For opt-out to be effective, the opt-in entity must complete all actions specified below:

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

(B) Submit any outstanding quarterly ~~progress~~ fuel transactions or project reports up to the quarter in which the effective opt-out-date falls and a final annual compliance report~~s~~ (covering the year through the opt-out date in which the opt-out is effective); 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~~ Approval*. ~~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~~ opt-in entity of the final "approval" status of the opt-out request. Any credits that remain in the ~~credit generator's~~ opt-in entity's account at the time of the effective opt-out date shall be forfeited and the ~~credit generator's~~ opt-in entity'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).

Section 95483.2 has been renamed and is updated to provide clear regulatory requirements for all online systems responsible for LCFS data management and program implementation. The section provides specific requirements for each online tool that is a part of LCFS Data Management System (LDMS), including Alternative Fuels Portal (AFP); LCFS Reporting Tool and Credit Banking and Transfer System (LRT-CBTS); and the proposed LCFS Verification Portal (LVP).

Note that the entire section has been struck out in its original location and replaced with new draft text.

**§ 95483.2. LCFS Data Management System.**

The LCFS Data Management System (LDMS) refers to all the online systems responsible for LCFS data management and program implementation.

LDMS comprises of following three interactive and secured web-based systems: Alternative Fuel Portal (AFP), LCFS Reporting Tool and Credit Bank and Transfer System (LRT-CBTS), and LCFS Verification Portal (LVP).

(a) *Alternative Fuel Portal (AFP).* The AFP is designed to support processes related to fuel pathway applications, certifications and verifications. It also handles the registration of fuel production facilities and opt-in projects.

(1) *Eligibility.* Any person who intends to be a fuel pathway applicant or an opt-in project operator can request to establish an account in AFP.

(2) *Requirements to Establish an Account in AFP.* To establish an account in the AFP, an entity must complete and submit the online AFP account registration form and provide the following:

(A) Organization name, address, state and country, Organization Federal Employer Identification Number (FEIN), date and place of incorporation.

(B) A letter on company letterhead stating the basis for qualifying for an account pursuant to subsection (1) above. This letter must be signed by the company owner, a president, a managing partner, or a corporate officer. A signed pdf copy must be uploaded in the AFP to complete the application process.

(C) The online AFP registration form must designate a primary account representative and at least one alternate account representative.

(D) For each representative, name, title, relationship to the organization, business and mobile phone, e-mail address, username, and password.

(E) The account representatives can be changed by following steps set forth in subsection (B) and (C) above. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous account representatives prior to the time and date when the Executive Officer receives the superseding information shall be binding on the entity.

(3) *Account Approval.*

(A) The account is established when the Executive Officer approves the application.

(B) Account registration application may be denied based on the information provided:

1. If the Executive Officer determines the applicant has provided false or misleading information; or

2. If the Executive Officer determines the applicant has withheld information material to its application.

(4) *Account Management Roles and Duties.*

(A) The account representative is responsible for making any changes to the company profile within AFP.

(B) The account representative may designate users within the company who can access and manage the account.

(5) *Change of Ownership*. If the existing company sells or transfers wholly or partially (selling the entire company or just one or more production facilities or projects) to a new company, then the existing and new owner must inform ARB and submit documents providing proof of ownership.

The proof of ownership document must be e-mailed to ARB AFP Administrator and will be reviewed by ARB Legal team. If the whole company was sold, the new account is established for the new owner after following submission of a new AFP registration form into the AFP account as described above in section 95483.3(b)(1). If the company was only partially sold (e.g., only one facility was sold) then the new owner should apply for a new account (assuming one does not already exist for the new owner due to a prior relationship with the AFP) and the production facility registration information, including FPC will be transferred to the new account owner.

(b) *LCFS Reporting Tool and Credit Bank & Transfer System (LRT-CBTS)*. The LRT-CBTS is designed to support fuel transaction reporting, compliance demonstration, credit generation, banking and transfers.

(1) *Eligibility.* The following entities can request to establish an account in the LRT-CBTS:

(A) A fuel reporting entity;
(B) An entity opting into LCFS, pursuant to section 95483 or 95483.1; or
(C) A broker.

(2) *Deadline to Establish LRT-CBTS Account.*

(A) An entity responsible for reporting any transportation fuels pursuant to section 95483 must complete registration at least 30 days prior to the date for filing any required report.

(B) An opt-in entity can register anytime during a calendar year. All quarterly and annual reporting is then required, beginning with the quarter in which registration was approved, and continuing until any opt-out is completed.

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

(3) *Requirements to Establish an Account in LRT-CBTS.* A company owner, a president, a managing partner, or a corporate officer with legal binding authority must complete and submit the online LRT-CBTS account registration form and provide the following:

(A) Organization name, address, state and country, Organization Federal Employer Identification Number (FEIN), date and place of incorporation.

(B) A letter on company letterhead stating the basis for qualifying for an account pursuant to subsection (1) above. This letter must be signed by the company owner, a president, a managing partner, or a corporate officer. A signed pdf copy must be uploaded in the LRT-CBTS to complete the application process.

(C) The online LRT-CBTS registration form must designate a primary account representative and at least one alternate account representative. The primary account representative and the alternate account representative(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 representative or the secondary account representative, 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."

(D) For each representative, name, title, relationship to the organization, business and mobile phone, e-mail address, username, and password.

(E) The account representatives can be changed by following steps set forth in subsections (B) through (D) above. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous account representatives prior to the time and date when the Executive Officer receives the superseding information shall be binding on the entity.

(F) *Designee.* In addition to requirements specified in (3)(A) through (E), a designee must provide a letter, issued by the fuel reporting entity they are acting for, attesting that the designee can act on their behalf in the LCFS program. The attestation letter must be on the company letterhead and signed and dated by a company owner, a president, a managing partner, or a corporate officer with legal binding authority. A pdf version must be uploaded into LRT-CBTS organization registration page.

(3) *Broker.* A broker may represent other LRT-CBTS account holders in LCFS credit transfers. To register a broker account, the broker must provide the following:

(A) Broker's organization name, address, state and country, Organization Federal Employer Identification Number (FEIN), date, and place of incorporation, if applicable.

(B) Broker's 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 a broker 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."

(4) *Account Approval.*

(A) The account is established when the Executive Officer approves the application.

(B) Account registration application may be denied based on the information provided:

1. If the Executive Officer determines the applicant has provided false or misleading information; or

2. If the Executive Officer determines the applicant has withheld information material to its application.

(5) *Account Management Roles and Duties.*

(A) The account representative is responsible for making any changes to the company profile within LRT-CBTS.

(B) The account representative may designate users within the company who can access and manage the account.

(C) The account representative is responsible for meeting the reporting requirements as set forth in section 95491.

(6) *Account Closure.*

(A) An LRT-CBTS account is subject to suspension or closure based on any of the following:

1. The account holder is no longer eligible to establish a LRT-CBTS account pursuant to section 95483.2(b)(1);

2. The account holder fails to comply with requirements of section 95483.2(b);

3. The account holder intends to opt-out pursuant to section 95483.1(c).

(B) The account holder must provide a notice of intent to the LRT-CBTS Administrator to close the account within 90 days after any condition in subsection (A) above. The entity must submit a final quarterly report for the quarter in which the notice was provided, submit a final annual report, and submit verification that any remaining deficits have been eliminated. The Executive Officer shall notify the entity of the final account closure. Any credits that remain in the entity's account at the time of the closure will be forfeited.

(C) Failure to provide notice pursuant to subsection (B) above will result in account closure and forfeit of any credits that remain in the entities account at the time of the closure.

(D) When an entity requests to reopen the LRT-CBTS account that was previously closed, the entity must follow the requirements as set forth in section 95483.4(b) to reopen the account.

(7) *Registration of Fueling Supply Equipment (FSE).* After establishing the LRT-CBTS account, fuel reporting entities for natural gas, electricity, propane, and hydrogen must register all their fueling supply equipment in LRT-CBTS using the FSE registration template that can be downloaded from the LRT-CBTS home page. The template requires:

(A) Organization Federal Employer Identification Number (FEIN), FSE Name, FSE Address, Latitude and Longitude.

(B) In addition to the information specified in (A), fuel reporting entities for CNG shall provide the FSE utility meter number, name of the utility company, and a copy of the most recent utility bill.

(C) In addition to the information specified in (A), fuel reporting entities for LNG shall provide the FSE ID number used for their accounting purposes, name of the FSE owner, and a copy of the most recent dispenser reading record or the bill of lading.

(D) In addition to the information specified in (A), fuel reporting entities for electricity shall provide the FSE serial number assigned by the original equipment manufacturer (OEM) and the FSE OEM name. If there are multiple FSE at the same location, provide a new record in the spreadsheet with an FSE Serial # for each unique piece of equipment.

(E) In addition to the information specified in (A), fuel reporting entities for hydrogen shall provide the FSE Dispenser ID as provided in National Renewable Energy Laboratory (NREL) Data Collection Tool. If there are multiple dispensers at a facility, provide a new record in the spreadsheet with a Dispenser ID for each unique dispenser. If no Dispenser ID is currently available, enter the unique identifier for the equipment used by the company/utility to identify the device, preferably Dispenser Serial Number.

(F) Upload the template and supporting documentation, if applicable, into LRT-CBTS. Upon the FSE registration, the applicant will receive a unique LCFS FSE ID that must be used for reporting fuel transactions in the LRT-CBTS pursuant to 95491.

(c) *LCFS Verification Portal (LVP)*. The LVP is designed to support LCFS verification processes.

(1) *Eligibility.* Any entity providing verification services pursuant to section 95500 (Executive Officer accredited verification body and an Executive Officer selected certification systems) can request to establish an account in LVP.

(2) *Requirements to Establish an Account in LVP.* A company owner, a president, a managing partner, or a corporate officer with legal binding authority must complete and submit the online LVP account registration form and provide the following:

(A) Organization name, address, state and country, Organization Federal Employer Identification Number (FEIN), date and place of incorporation.

(B) The online LVP registration form must designate a primary account representative and at least one alternate account representative.

(C) For each representative, name, title, relationship to the organization, business and mobile phone, e-mail address, username, and password.

(D) The account representatives can be changed by following steps set forth in subsection (B) and (C) above. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous account representatives prior to the time and date when the Executive Officer receives the superseding information shall be binding on the entity.

(3) *Account Approval.*

(A) The account is established when the Executive Officer approves the application.

(B) Account registration application may be denied based on the information provided:

1. If the Executive Officer determines the applicant has provided false or misleading information; or

2. If the Executive Officer determines the applicant has withheld information material to its application.

(4) *Account Management Roles and Duties.*

(A) The account representative is responsible for making any changes to the company profile within LVP.

(B) The account representative may designate users within the company who can access and manage the account.

(C) The account representative is responsible for meeting the requirements as set forth in section 95500 through 95502.

~~**§ 95483.2. Establishing a LCFS Reporting Tool Account**~~

~~(a) *Eligibility and Restrictions.*~~

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

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

~~(b) *Requirements to Establish Account.*~~

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

(A) Organization Name, Address, State and 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) *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).

Section 95484 is amended to extend the program targets beyond 2020. This section will provide the carbon intensity values to be used to calculate credits and deficits in each year to 2030.

**§ 95484. ~~Average~~ Annual Carbon Intensity ~~Requirements~~ Benchmarks.**

(a) ~~Starting January 1, 2011, and for each year thereafter, a regulated party must meet the average~~ Credit and deficit calculations, as described in Section 95486, will use the appropriate annual carbon intensity benchmarks ~~requirements~~ set forth in Tables 1, ~~and Table~~ 2 and 3 of this section ~~for its transportation gasoline and diesel fuel, respectively, in each calendar year~~.

(b) ~~*Requirements*~~ *Benchmarks for Gasoline and Fuels used as a Substitute for Gasoline*.

**Table 1. LCFS ~~Compliance Schedule~~ Carbon Intensity Benchmarks for 2011 to ~~2020~~ 2030 for Gasoline and Fuels Used as a Substitute for Gasoline.**

| *Year* | *Average Carbon Intensity ($gCO_2e/MJ$)* | *Year* | *Average Carbon Intensity ($gCO_2e/MJ$)* |
|---|---|---|---|
| 2010 | Reporting Only | | |
| 2011* | 95.61 | 2021 | xx.xx |
| 2012 | 95.37 | 2022 | xx.xx |
| 2013** | 97.96 | 2023 | xx.xx |
| 2014 | 97.96 | 2024 | xx.xx |
| 2015 | 97.96 | 2025 | xx.xx |
| 2016*** | 96.50 | 2026 | xx.xx |
| 2017 | 95.02 | 2027 | xx.xx |
| 2018 | 93.55 | 2028 | xx.xx |
| 2019**** | 91.08 | 2029 | xx.xx |
| 2020 ~~and subsequent years~~ | 88.62 | 2030 and subsequent years | xx.xx |

* The ~~average carbon intensity requirements~~ benchmarks 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~~ benchmarks 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~~ benchmarks for years 2016 to 2020 reflect reductions from revised base year (2010) CI values for CaRFG (98.47).
**** The benchmarks for years 2019 to 2030 reflect reductions from revised base year (2010) CI values for CaRFG (xx.xx).

(c) *~~Requirements~~ Benchmarks for Diesel Fuel and Fuels used as a Substitute for Diesel Fuel.*

**Table 2. LCFS ~~Compliance Schedule~~ Carbon Intensity Benchmarks for 2011 to ~~2020~~ 2030 for Diesel Fuel and Fuels Used as a Substitute for Diesel Fuel.**

| *Year* | *Average Carbon Intensity ($gCO_2e/MJ$)* | *Year* | *Average Carbon Intensity ($gCO_2e/MJ$)* |
|---|---|---|---|
| 2010 | Reporting Only | | |
| 2011* | 94.47 | 2021 | xx.xx |
| 2012 | 94.24 | 2022 | xx.xx |
| 2013** | 97.05 | 2023 | xx.xx |
| 2014 | 97.05 | 2024 | xx.xx |
| 2015 | 97.05 | 2025 | xx.xx |
| 2016*** | 99.97 | 2026 | xx.xx |
| 2017 | 98.44 | 2027 | xx.xx |
| 2018 | 96.91 | 2028 | xx.xx |
| 2019 | 94.36 | 2029 | xx.xx |
| 2020 ~~and subsequent years~~ | 91.81 | 2030 and subsequent years | xx.xx |

* The ~~average carbon intensity requirements~~ benchmarks 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~~ benchmarks 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~~ benchmarks for years 2016 to 2020 reflect reductions from revised base year (2010) CI values for ULSD (102.01).
**** The benchmarks for years 2019 to 2030 reflect reductions from revised base year (2010) CI values for ULSD (xx.xx).

(d) *Benchmarks for Fuels used as a Substitute for Conventional Jet Fuel.*

**Table 3. LCFS Carbon Intensity Benchmarks for 2019 to 2030 for Fuels Used as a Substitute for Conventional Jet Fuel.**

| *Year* | *Average Carbon Intensity ($gCO_2e/MJ$)* |
|---|---|
| 2019 | xx.xx |
| 2020 | xx.xx |
| 2021 | xx.xx |
| 2022 | xx.xx |
| 2023 | xx.xx |
| 2024 | xx.xx |
| 2025 | xx.xx |
| 2026 | xx.xx |
| 2027 | xx.xx |
| 2028 | xx.xx |
| 2029 | xx.xx |
| 2030 and subsequent years | xx.xx |

* The benchmarks reflect reductions from base year (2010) CI values for conventional jet fuel (xxx.xx).

(d~~d~~e) ~~*Carbon Intensity Requirements*~~ *Benchmarks 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~~ The benchmarks for gasoline set forth in section 95484(b) will be used for credit and deficit calculations for any ~~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~~ The benchmarks for diesel fuel set forth in section 95484(c) will be used for credit and deficit calculations for ~~its~~ any 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~~d~~e)(1).

(~~e~~f) *Carbon Intensity ~~Requirements~~ Benchmarks for Biomass-Based Diesel Fuel Provided for Use in a Single-Fuel Vehicle.* ~~A regulated party must use the average carbon intensity value~~ The benchmark for diesel fuel, set forth in section 95484(c), must be used 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~~g) *Carbon Intensity ~~Requirements~~ Benchmark for Transportation Fuels Intended for Use in Multi-Fuel Vehicles.*

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

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

(B) the ~~average carbon intensity value~~ benchmarks for diesel fuel set forth in section 95484(c) must be used 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).

This section contains only minor suggested clean ups and clarifications.

**§ 95485. Demonstrating Compliance.**

(a) *Compliance Demonstration.* A ~~regulated party's~~ fuel reporting entity's annual compliance obligation is met when the ~~regulated party~~ fuel reporting entity demonstrates, via its annual LRT-CBTS 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~~ fuel reporting entity must calculate the credit balance at the end of a compliance period as follows:

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

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

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 the ongoing LCFS market.

(c) *Credit Clearance Market.*

(1) If a ~~regulated party~~ fuel reporting entity 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.~~

(A)~~(B)~~ *If the Credit Clearance Market occurs*, a ~~regulated party~~ fuel reporting entity 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.

(B)~~(C)~~ *If no Credit Clearance Market occurs*, the Executive Officer will record any ~~party's~~ entity's unmet compliance obligation ~~in that party's Accumulated Deficits account~~, and the ~~regulated party~~ fuel reporting entity will be deemed in compliance for that year, provided that it retires credits equivalent to the Accumulated Deficits ~~that~~

~~Accumulated Deficit balance~~, with interest as explained in section 95485 (c)(4)(E) below, 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~~ fuel reporting entity 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~~ fuel reporting entity's compliance obligation from an immediate prior year.

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

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

2. The ~~regulated party~~ fuel reporting entity 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 party~~ fuel reporting entities 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~~previous year's maximum price plus inflation).

(B) *Pledging Credits for Sale into Clearance Market.* ~~Regulated party~~ Fuel reporting entities 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~~ number of ~~any~~ credits they are pledging for sale.

(C) *Calculation of the Maximum Price for Credits in the Clearance Market.* The maximum price for credits acquired, purchased or

transferred via the Credit Clearance Market shall be set by the following formula:

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

2. ~~This price shall be adjusted in subsequent years by a Consumer Price Index (CPI) deflator in all years subsequent to 2016 to keep pace with inflation and remain at a constant price, in real terms.~~ This per credit price shall be adjusted annually by the rate of inflation as measured by the most recently available twelve months of the Consumer Price Index for All Urban Consumers.

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.~~ "Consumer Price Index for All Urban Consumers" means a measure that examines the changes in the price of a basket of goods and services purchased by urban consumers, and is published by the U.S. Bureau of Labor Statistics.

(D) *Eligibility to Sell.* Only ~~regulated party~~ fuel reporting entities ~~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~~ Fuel reporting entities 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~~ Parties 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 p~~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~~ fuel reporting entity 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~~ fuel reporting entity's pro-rata share of credits available in the Clearance Market will be calculated by the following formula:

~~Regulated Parties~~ Fuel reporting entity 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 parties~~ fuel reporting entities 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'~~ fuel reporting entities' 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~~ entities 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~~ entity that did not meet the requirement of section 95485(a) and the number of credits that each ~~party~~ entity is obligated to acquire as their pro-rata share; and

2. ~~t~~The name of each ~~party~~ entity 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~~ Fuel reporting entities 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~~ fuel reporting entity retains an unmet compliance obligation, the Executive Officer shall record remaining ~~unmet~~ deficits from that compliance year in ~~an Accumulated Deficit account for that~~ the entity's account.

(5) *Rules Governing Accumulated Deficits.*

(A) *Compound Interest on Accumulated Deficits*. ~~Regulated Parties~~ Fuel reporting entities with an Accumulated Deficit will be charged interest to be applied annually to all deficits in a ~~regulated party's~~ fuel reporting entity's ~~Accumulated Deficit~~ account. Interest will be applied in terms of additional deficits that must be retired pursuant to section 95485(c)(1)(A)~~(B), above,~~ at a rate of 5 percent annually, applied on each May 1st.

(B) *Repayment of Accumulated Deficits.* ~~Regulated Parties~~ Fuel reporting entities 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~~ Fuel reporting entities may repay ~~unmet~~ Accumulated ~~d~~Deficits as part of a subsequent annual report. However, no repayment of any ~~a~~Accumulated ~~d~~Deficits is allowed unless the ~~regulated party~~ fuel reporting entity meets 100 percent of its current compliance obligation.

(D) *Prohibitions on Credit Transfers.* ~~Regulated Parties~~ Fuel reporting entities 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~~ fuel reporting entity may use credits created pursuant to section 95489(f) to meet no more than 20 percent of its annual compliance obligation.

(2) A ~~regulated party~~ fuel reporting entity may use credits created pursuant to section 95489(g) to meet no more than 10 percent of its annual compliance 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).

This section is updated to clarify existing process, requirements and restrictions relating to generation of credits in the LCFS program. Clarifications are not intended to change the meaning of regulatory provisions currently in effect. It also discusses adding a buffer account for LCFS credits to safeguard against the risk of invalidation. Some of the EER values, used for credit calculation, are also updated.

## § 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 party or credit generators~~ entities through the LRT-CBTS.

(2) *No Retroactive Credit ~~Generation~~Claim.* Unless expressly provided elsewhere in this subarticle, no credit generator may claim credits ~~may be generated or claimed~~ retroactively based on section 95489 and 95490 provisions, ~~supplying electricity for transportation,~~ or any ~~transaction or activity~~ net transactions or activities regarding a transportation fuel for any act occurring in a quarter for which the quarterly reporting deadline has passed. Similarly, no deficit generator may eliminate deficits retroactively 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) *Buffer Account.* The Executive Officer may create a LRT-CBTS account under the control of the Executive Officer. In this account, the Executive Officer may place:

(A) An equivalent number of credits for any LCFS credits that could have been claimed (or deficits that could have been eliminated) if reported timely, if not for the prohibition on retroactive credit claims in subsection 95486(a)(2).

(B) X% of total credits from a CCS project at the time of issuance.

(C) All net credits remaining in any deactivated LRT-CBTS accounts.

(D) The Executive Officer may retire credits in the Buffer Account to make the LCFS program whole following the invalidation of credits, pursuant to 95495, including invalidation of credits due to reversals of CCS projects, if the person responsible for the reversal or credit invalidity of the invalidated credits no longer exists or is otherwise unavailable to reimburse the program.

~~(3)~~(4) The Executive Officer may, at the time of credit ~~creation~~ generation 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~~ invalidated or adjusted as necessary pursuant to section 95495.

~~(4)~~(5) *Acquisition of "Carryback" Credits to Meet Obligation.*

(A) *~~Extended Credit Acquisition~~Carryback Credit Acquisition Period*. A ~~regulated party~~ fuel reporting entity may acquire, via purchase or transfer, additional credits between January 1st and ~~March 31st~~ April 30th ("~~extended~~ carryback period") to be used for meeting the compliance obligation of the year immediately prior to the ~~extended~~ carryback 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~~April 30th and completed by the buyer within ~~10~~ 5 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~~ carryback period;

2. The ~~additional~~ credit was generated in a compliance year prior to the ~~extended~~ carryback period;

3. A ~~regulated party~~ fuel reporting entity 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~~ carryback credits were obtained; and

4. A ~~regulated party~~ fuel reporting entity electing to use carryback credits must:

   a. ~~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. ~~m~~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~~ carryback period that are eligible to be used as ~~carry back~~ carryback 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 this section~~s 95486~~ and section 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~~4, must be converted to MJ in the LRT-CBTS by multiplying by the corresponding energy density[1]:

**Table ~~3~~4. Energy Densities of LCFS Fuels and Blendstocks.**

| *Fuel (units)* | *Energy Density* |
|---|---|
| CARBOB (gal) | 119.53 (MJ/gal) |
| CaRFG (gal) | 115.83 (MJ/gal) |
| Diesel fuel (gal) | 134.47 (MJ/gal) |
| ~~Pure Methane ($ft^3$)~~ | ~~1.02 (MJ/$ft^3$)~~ |
| Natural Gas ~~($ft^3$)~~ (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) |
| Alternative Jet Fuel (gal) | xxx.xx (MJ/gal) |
| Propane (gal) | xxx.xx (MJ/gal) |

(2) The total credits and deficits generated by a ~~regulated party~~ credit or deficit generator in a compliance period ~~must~~ will be calculated as follows:

[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.

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

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

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

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, and jet fuel ~~average~~ carbon intensity benchmarks ~~requirements~~, and from opt-in projects, if applicable;

$Deficits^{Gen}$ 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 for which ~~supplied by~~ a ~~regulated party~~ fuel reporting entity is the credit or deficit generator will ~~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"), or jet fuel ($XD$ = "jet");

$CI_{standard}^{XD}$ is the average carbon intensity requirement of either gasoline ($XD$ = "gasoline"), ~~or~~ diesel ($XD$ = "diesel"), or jet fuel ($XD$ = "jet") for a given year as provided in sections 95484(b) ~~and~~, (c) and (d), 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"), or jet fuel ($XD$ = "jet") 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 ($XD$ = "diesel"), or jet fuel ($XD$ = "jet") as listed in Table ~~4~~5. For a vehicle-fuel combination not listed in Table 45, $EER^{XD} = 1$ 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~~4, except as noted in section 95486(b)(3)(D).

(D) For Fixed Guideway Systems and Forklifts:

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

where:

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

**Table ~~4~~5. EER Values for Fuels Used in Light- and Medium-Duty, and Heavy-Duty Applications.**

| ***Light/Medium-Duty Applications (Fuels used as gasoline replacement)*** | | ***Heavy-Duty/Off-Road Applications (Fuels used as diesel replacement)*** | |
|---|---|---|---|
| ***Fuel/Vehicle Combination*** | ***EER Values Relative to Gasoline*** | ***Fuel/Vehicle Combination*** | ***EER Values Relative to Diesel*** |
| Gasoline (incl. E6 and E10)<br>or<br>E85 (and other ethanol blends) | 1.0 | Diesel fuel<br>or<br>Biomass-based diesel blends | 1.0 |
| CNG/ICEV | 1.0 | CNG or LNG (Spark-Ignition Engines)<br>CNG or LNG (Compression-Ignition Engines) | 0.9<br>1.0 |
| Electricity/BEV, or PHEV | 3.4 | Electricity/BEV, or PHEV* ~~Truck~~<br>~~Electricity/BEV or PHEV* Bus~~<br>Electricity/Fixed Guideway, Heavy Rail<br>Electricity/Fixed Guideway, Light Rail<br>Electricity/Trolley Bus, Cable Car, Street Car<br>Electricity Forklifts<br>Electric TRU | 5.0 ~~2.7~~<br>~~4.2~~<br>4.6<br>3.3<br>3.1<br>3.8<br>3.4 |
| H2/FCV | 2.5 | H2/FCV<br>H2 Fuel Cell Forklifts | 1.9<br>2.1 |
| Propane | X.X | Propane | X.X |

*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~~2019 and every year afterwards, a ~~regulated party~~ credit generator 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~~ if all of the conditions set forth below are met:

(1) The credit generator met all the reporting requirements pursuant to section 95489, 954890 and 95491;

(2) The credit generator reconciled its data with business partners before the quarterly reporting deadline, if applicable.

(3) The activity is not prohibited pursuant to section 95486(a)(2) or any other provision of this subarticle.

(4) A different credit generation frequency for the reported activity is not expressly specified elsewhere in this subarticle.

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).

This section is updated to clarify rules and requirements for transferring credits in the LRT-CBTS system.

## § 95487. Credit Transactions.

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

(1) A ~~regulated party~~ fuel reporting entity or credit generating entity may:

(A) ~~r~~Retain LCFS credits without expiration for use within the LCFS market;

(B) ~~a~~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)~~section 95483.~~, 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~~ fuel reporting entity or credit generating entity may not:

(A) ~~u~~Use credits in the LCFS program that are generated outside the LCFS program, including credits generated in other ~~AB 32~~ tradeable emission credit programs administered by the California Air Resources Board.

(B) ~~b~~Borrow or use credits from anticipated future carbon intensity reductions.

(C) ~~g~~Generate LCFS credits from fuels exempted from the LCFS under section 95482(d) or are otherwise not eligible pursuant to~~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~~time of annual compliance report submission, a ~~regulated party~~ fuel reporting entity 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~~ fuel reporting entity'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~~ fuel reporting entity 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~~ uses ~~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" i.e., "completed date" 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~~ entity who wishes to sell or transfer credits ("the Seller") and a regulated ~~party~~ entity 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:

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

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

1. The transaction agreement covers a single delivery of LCFS credits in the LRT-CBTS, which is taking place no more than 10 days from the date of agreement;

2. The transaction agreement covers multiple credit deliveries, or at least one of the deliveries is taking place—or will take place—more than 10 days from the date of agreement.

(C)~~(B)~~ *Credit Seller Requirements.* ~~When a credit transfer agreement has been reached~~ From the date of credit transfer agreement, within ~~10 business~~ 5 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. *Date of transaction agreement:* The date on which the Buyer and Seller reached the transaction 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 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 transaction agreement does not specify the price for LCFS credits, the seller may select one of the following options listed in a. and b. below.

   a. The proposed transfer is to reflect an adjustment in CI value of fuel transacted between Buyer and Seller;

   b. The proposed transfer incorporates a credit trade along with the sale or purchase of other product, and does not specify a price or cost basis for the sale of the credits alone. In such cases, Seller should provide a brief description of the pricing method;

   If the pricing terms are not covered by the transfer types listed in section 95487(c)(1)(C)(9)a. through b. then the seller must provide the basis for pricing terms using the comment section in the CTF and upload a copy of transaction agreement including the terms of credit transfer.

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 transaction 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~~5 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~~10 days of reaching an agreement, the Executive Officer will deem the transaction void.

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

(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~~ entity is responsible for the accuracy of information submitted to the Executive Officer. If a regulated ~~party~~ entity discovers an error in the information reported to the Executive Officer or recorded by the Executive Officer, the regulated ~~party~~ entity must inform the Executive Officer in writing within ~~five (5) business~~5 days of the discovery and request a correction. Each submitted request is subject to Executive Officer review and approval. 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~~ reports 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~~ fuel reporting entities and credit generating entities and the total number of outstanding deficits carried over by ~~regulated parties~~ deficit generating entities 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~~ entities 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).

Section 95488, which describes the process and requirements for determining fuel pathway carbon intensity values and obtaining certification in order to report and generate credits, has been extensively reorganized to improve structure, clarity, and readability. As such, the existing text has been entirely struck out in its original location, and all text now appears in underline format.

New sections, 95488.1 through 95488.9, have been added in order to reduce the level of indentation throughout the current adopted text.

95488 introduces the applicability of the sections covering fuel pathway application process and requirements and clarifies responsibilities for pathways that involve multiple facilities.

**§ 95488. ~~Obtaining and Using~~ Entities Eligible to Apply for Fuel Pathways.**

(a) Any alternative fuel provider may apply to the Executive Officer for fuel pathway carbon intensity certification for the purpose of credit generation.

(b) *Joint Applicants.* Multiple entities may contribute site-specific data to a single pathway application. In these cases, the parties involved may either designate a single entity as the pathway applicant, or designate multiple entities as joint applicants on a single pathway. Applying as joint applicants allows each entity to maintain control of confidential data for the portions of the pathway they submit.

(1) Each joint applicant is subject to all requirements for pathway application, attestations, validation and verification, recordkeeping, pursuant to this article, for the portion of the pathway they control.

(2) A single entity designated to submit data on behalf of multiple entities within a pathway does not relieve any other entity in the pathway from responsibility for ensuring that the data submitted on its behalf is accurate.

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).

Section 95488.1 was created to contain the fuel pathway classifications that applicants use to determine which requirements pertain to their application. This includes minimal revisions to the Tier 1 and Tier 2 classifications, and a stand-alone Lookup Table classification. The Lookup Table is divided into renewable pathways that require some applicant-specific information, and those that can be automatically approved for use upon registration without a data review. The Tier 1 classification can now include certain pathways with renewable process energy inputs from biomethane and solar or wind electricity generation.

## § 95488.1. Fuel Pathway Classifications.

(a) For purposes of fuel pathway carbon intensity determination, all new LCFS fuel pathways certified after January 1, 2019 (or the effective date of this regulation) shall be classified as either: a Lookup Table, Tier 1 or Tier 2, pathway as described below.

(b) *Lookup Table Classification.* Pathways falling under this classification are the simplest pathways. Lookup Table pathways CI values were developed by the Board's staff using the CA-GREET3.0 model with the input variables and assumptions provided in the Lookup Table Pathway Documents, which are incorporated herein by reference.

(1) *Lookup Table pathways that do not require applicant-specific CI evaluation.* The following pathways represent pathways developed using average values for inputs into the CA-GREET3.0 model which are not expected to vary significantly across providers of the fuel. Fuel Pathway Applicants for these pathways must register their facility and declare the Lookup Table classification per the requirements of section 95488.2. After completion of these steps, applicants for the following pathways may report fuel sales directly in the LRT-CBTS without needing to submit site-specific data.

(A) CARBOB
(B) ULSD
(C) Fossil natural gas
(D) Electric vehicle charging using California grid-average electricity
(E) Fossil-based propane
(F) Hydrogen (gaseous and liquefied) from central reforming of fossil-based natural gas
(G) Hydrogen from electrolysis using California grid-average electricity

(2) *Lookup Table pathways that require applicant-specific CI evaluation.* Applicants seeking certification for the following Lookup Table fuel pathways must submit an application as specified in 95488.4 to

demonstrate they meet the criteria to report fuel sales using the Lookup Table CI:

(A) Electricity that is generated from 100 percent solar or wind supplied to electric vehicles in California that meets the criteria of 95488.7(i);

(B) Hydrogen produced from: (1) reforming of biomethane, or (2) electrolysis powered by solar or wind electricity.

(c) *Tier 1 Classification*. The Tier 1 pathway classification applies to fuel pathway categories that the Board's staff has extensive experience evaluating. This classification includes fuel pathways for which the Executive Officer has identified a discrete set of site-specific inputs that can modified to reflect a pathway's actual pathway conditions and operational data. CI values for Tier 1 fuel pathways are determined using Board-approved Simplified CI Calculators. The Simplified CI Calculators provide a framework for applicants to enter monthly operational data inputs that are combined with emission factors and life cycle inventory data from the CA-GREET3.0 model to calculate the pathway CI. The Tier 1 classification includes, but is not limited to, the following fuel pathways:

(1) Ethanol derived from starch or fiber in corn kernels, sorghum, and sugarcane;

(2) Biodiesel produced from feedstocks including but not limited to oilseed crop-derived oils; rendered tallow, distiller's corn oil, and used cooking oil;

(3) Renewable Diesel produced by hydrotreatment of feedstocks in a stand-alone reactor, including but not limited to oilseed crop-derived oils, rendered tallow, distiller's corn oil, and used cooking oil;

(4) LNG and L-CNG from North American fossil natural gas; and

(5) Biomethane from landfill gas.

(d) *Tier 2 Classification.* The Tier 2 pathway classification shall apply to fuel pathways that CARB Staff has limited experience evaluating and certifying, including fuel pathways that are not currently in widespread commercial production. The Tier 2 classification includes all fuel pathways not included in Tier 1 or the Lookup Table pathways. The Tier 2 classification includes, but is not limited to the following fuel pathways:

(1) Cellulosic alcohols;

(2) Biomethane from sources other than landfill gas;

(3) Hydrogen pathways not found in the Lookup Table;

(4) Electricity pathways not found in the lookup table;

(5) Drop-in fuels (renewable hydrocarbons) except for renewable diesel produced from feedstocks described in section 95488.1(c)(3). This category includes fuels produced from low carbon feedstocks co-processed with fossil feedstocks in petroleum refineries;

(6) Any fuel produced from unconventional feedstocks such as algae oil;

(7) Pathways classified as Tier 1 that are produced using innovative production methods, which cannot be accurately modeled using the Simplified CI Calculators. Such pathways must meet the substantiality requirements of 95488.8(a). Innovative production methods include, but are not limited to:

(A) Use of one or more low-CI process energy sources.

(B) Pathways utilizing carbon capture and sequestration. (Projects that utilize carbon capture and sequestration are subject to the provisions of section 95490).

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).

Section 95488.2 describes the requirements for pathway and facility registration in the Alternative Fuels Portal (AFP) as the first step to initialize a fuel pathway application.

## § 95488.2. Pathway Registration and Facility Registration.

After establishing an account in the Alternative Fuels Portal, per the requirements of section 95483.2(a), fuel pathway applicants must begin the application process by completing the facility and pathway registration through the AFP web portal.

(a) *Production Facility Registration.* All production facilities from which site-specific operational data is relied upon in determining the CI score for a pathway must be registered in the AFP. All of the following fields that apply are required:

(1) Production company name and full mailing address.

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

(3) Company contact person's contact information.

(A) Name
(B) Title or position
(C) Phone number
(D) Mobile phone number
(E) Email address
(F) Company web site URL

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

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

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

(7) 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.

(8) Facility contact person's contact information.

(A) Name
(B) Title or position
(C) Phone number
(D) Mobile phone number
(E) Email address

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

(b) *Pathway Registration.* All of the following fields that apply are required.

(1) Consultant's contact information

(A) Name
(B) Title or position
(C) Legal company name

(D) Phone number
(E) Mobile phone number
(F) Email address
(G) Web site URL

(2) Fuel type (renewable diesel, ethanol, etc.)
(3) Feedstock
(4) Brief pathway description
(5) Proposed pathway carbon intensity value
(6) Estimated representative annual quantity of fuel produced under the proposed pathway, in units of gasoline-gallon equivalents or diesel-gallon equivalents
(7) *Classification*. The fuel pathway applicant must declare whether the proposed fuel pathway falls under the Lookup Table, Tier 1 or Tier 2 provisions of this regulation as specified in section 95488.1. The Executive Officer will evaluate the fuel pathway applicant's classification declaration and either approve or change it. The Executive Officer's decision shall be final and not subject to further appeal.

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).

Section 95488.3 is a new section that describes how carbon intensities are calculated for fuel pathways using the suite of Board-adopted life cycle analysis models: CA-GREET3.0, OPGEE2.0, GTAP-BIO and AEZ-EF models.

## § 95488.3. Calculation of Fuel Pathway Carbon Intensities.

(a) *Calculating Carbon Intensities.* Pathway Applicants and the Executive Officer will evaluate all pathways based on life cycle greenhouse gas emissions per unit of fuel energy, or carbon intensity, expressed in grams of carbon dioxide equivalent per megajoule ($gCO_2e/MJ$) of the pathway. For this analysis, the Pathway Applicant must use the California-modified Greenhouse Gases, Regulated Emissions, and Energy use in Transportation version 3.0 (CA-GREET) model (including the Simplified CI Calculators derived from that model) or another model determined by the Executive Officer to be equivalent or superior to CA-GREET 3.0.

(b) *CA-GREET3.0.* The CA-GREET model contains emission factors for calculating greenhouse gas emissions from site-specific inputs to fuel pathways and standard values for parts of the life cycle not included in applicant-specific data

submission. The model is open source and publically available for review on the LCFS models web page and is incorporated herein by reference. CA-GREET3.0 includes contributions from the Oil Production Greenhouse Gas Estimator (OPGEE2.0) model (for emissions from crude extraction) and Global Trade Analysis Project (GTAP-BIO) together with the Agro-Ecological Zone Emissions Factor (AEZ-EF) model for land use change (LUC).

(c) *OPGEE2.0.* The OPGEE2.0 model is used to generate carbon intensities for crude oil used in the production of ultra-low sulfur diesel (ULSD) and California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB).

(d) *Accounting for Land Use Change.* The Executive Officer calculates LUC effects for certain crop-based biofuels using the GTAP model (modified to include agricultural data and termed GTAP-BIO) and the AEZ-EF model. LUC values for six feedstock/finished biofuel combinations are provided in Table 6 below. The Executive Officer may use the same modeling framework to assess LUC values for other crop-based biofuels, not currently found in Table 6, as part of processing a pathway application. Alternatively, the Executive Officer may require a Pathway Applicant to use one of the values in Table 6, if the Executive Officer deems that value appropriate to use for a crop-based feedstock/biofuel combination not currently listed in Table 6.

**Table 6. Land Use Change Values for Use in CI Determination**

| **Biofuel** | **LUC ($gCO_2$/MJ)** |
|---|---|
| Corn Ethanol | 19.8 |
| Sugarcane Ethanol | 11.8 |
| Soy Biomass-Based Diesel | 29.1 |
| Canola Biomass-Based Diesel | 14.5 |
| Sorghum Ethanol | 19.4 |
| Palm Biomass-Based Diesel | 71.4 |

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).

Section 95488.4 details the application requirements and certification process for Lookup Table pathways. Biomethane pathways have been removed from the Lookup Table, and natural gas and propane (fossil-based) have been added. Renewable hydrogen and renewable electricity pathways have also been added with special application requirements. Staff continues to solicit stakeholder input on how the renewable hydrogen and renewable electricity pathways should be evaluated.

This section adds a process for *new* Lookup Table pathways to be established, and provides for the California Grid Average Electricity pathway CI value to be updated annually.

## § 95488.4. Lookup Table Fuel Pathway Application Requirements and Certification Process.

(a) *Applicability*. A fuel pathway applicant may apply for a Lookup Table pathway if the Lookup Table (Table 7 in section 95488.4(c)) contains a fuel pathway that closely corresponds to the applicant's actual physical fuel production pathways. A fuel pathway applicant's actual physical fuel production pathway corresponds closely with a Lookup Table pathway when it is consistent with the 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 fuel pathway applicant's product must be lower than or equal to the Lookup Table pathway CI. If the Executive Officer determines the product has an actual CI that is likely to be higher than the Lookup Table CI value, the applicant may apply for a Tier 2 pathway.

(b) *Lookup Table Pathway Application Requirements*. The provisions set forth in this subsection apply exclusively to LCFS fuel pathways applications for the following pathways: compressed hydrogen produced in California from North American biomethane, liquefied hydrogen produced in California using North American biomethane, compressed hydrogen produced in California using 100 percent solar or wind electricity, or 100 percent solar or wind electricity used in EVs. No other fuel pathways in the Lookup Table require submission of a fuel pathway application based on applicant-specific operational data.

(1) The following information shall be submitted with all Lookup Table pathway applications for renewable hydrogen:

(A) Contracts and invoices to substantiate type and source of renewable input (feedstock) used to produce the fuel. For hydrogen produced in California by steam reforming of biomethane, contracts and invoices from the landfill or other supplying source for quantities of biomethane (MMBtu) are required to demonstrate accurate accounting and characterization. For hydrogen produced in California by electrolysis from solar- or wind-generated electricity, contracts and invoices are required to demonstrate that the electricity meets the requirements of section 95488.7(h)(7) and (8).

(B) The completed NREL Hydrogen Infrastructure Data Collection Tool covering three months of operation, if available, is required.

(2) The following information shall be submitted for Lookup Table pathway applications for renewable electricity supplied to EVs:

(A) For directly supplied renewable electricity, an applicant must indicate the locations of renewable electricity generation equipment, meters, meter ID numbers, and identify any other users of the electricity.

(B) For indirectly supplied renewable electricity, contracts and invoices are required to demonstrate that the solar- or wind-generated electricity meets the requirements of section 95488.7(h)(7) and (8).

(3) A fuel reporting entity's choice of carbon intensity value from the Lookup Table is subject in all cases to Executive Officer review.

(A) If the Executive Officer has reason to believe that a fuel reporting entity's Lookup Table choice is not the CI value that most closely corresponds to its actual pathway CI, the Executive Officer shall notify the entity through the LRT-CBTS to choose a different pathway from the Lookup Table.

(B) If the Executive Officer has reason to believe that the Lookup Table does not contain a fuel pathway that closely corresponds with the actual fuel pathway, the fuel reporting entity will not be allowed to use the Lookup Table to generate credits or deficits, but may apply for a Tier 1 or Tier 2 pathway or Temporary Fuel Pathway code.

(4) *New Lookup Table Pathways.* An entity can apply for the use of a Lookup Table pathway carbon intensity value if it appears in Table 7 in this subarticle or if the Executive Officer approves of a new Lookup Table

Pathway and publishes it on the LCFS Fuel Pathways web page. Any new Lookup Table pathway created by the Executive Officer will be posted for 10 business days for public comment prior to certification. The posted information will include details of the production process of the fuel, any technological details, CA-GREET3.0 model inputs and additional information related to the calculation of a CI for this fuel pathway. After close of the public comment period, only such comments related to potential factual or methodological errors will be considered. If these comments require significant revision of the originally published pathway, an updated pathway will be posted for public comment. Upon certification of a new Lookup Table pathway created by the Executive Officer, the new Lookup Table pathway will be available for reporting in the quarter in which it is certified.

(5) *Annual update of Lookup Table pathway for CA grid electricity supplied to electric vehicles*. In order to reflect the rapidly evolving portfolio of electricity generating resources in California, the grid electricity Lookup Table pathway will be updated on an annual basis. The annual update will use data from the California Energy Commission Quarterly Fuel and Energy Report (QFER). The Executive Officer will follow the procedure outlined in 95488.4(b)(4) for certifying a new Lookup Table pathway.

(c) The 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, California Air Resources Board. XXXX, 2017. Detailed CA-GREET Pathway for California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB) from Average Crude Refined in California. Version X. Pathway FPCXXXX.

Industrial Strategies Division, California Air Resources Board. XXXX, 2017. Detailed CA-GREET Pathway for Ultra Low Sulfur Diesel (ULSD) from Average Crude Refined in California. Version X. Pathway FPCXXXX.

Industrial Strategies Division, California Air Resources Board. XXXX, 2017. Detailed CA-GREET Pathway for Compressed-Natural Gas produced in California from Pipeline Average North American Fossil Natural Gas. Version X. Pathway CNGXXXX.

Industrial Strategies Division, California Air Resources Board. XXXX, 2017. Detailed CA-GREET Pathway for Fossil-based Propane. Version X. Pathway FPCXXX

Industrial Strategies Division, California Air Resources Board. XXXX, 2017. Detailed CA-GREET Pathway for California Average Grid Electricity Supplied to Electric Vehicles. Version X. Pathway FPCXXX

Industrial Strategies Division, California Air Resources Board. XXXX, 2017. Detailed CA-GREET Pathway for Electricity Generated from 100 Percent Solar or Wind Supplied to Electric Vehicles in California. Version X. Pathway FPCXXX.

Industrial Strategies Division, California Air Resources Board. XXXX, 2017. Detailed CA-GREET Pathway for Compressed Hydrogen Produced in California from Central Reforming of North American Fossil-based Natural Gas. Version X. Pathway FPCXXX

Industrial Strategies Division, California Air Resources Board. XXXX, 2017. Detailed CA-GREET Pathway for Liquefied Hydrogen Produced in California from Central Reforming of North American Fossil-based Natural Gas. Version X. Pathway FPCXXX

Industrial Strategies Division, California Air Resources Board. XXXX, 2017. Detailed CA-GREET Pathway for Compressed Hydrogen Produced in California from Central Reforming of Biomethane from North American Landfills. Version X. Pathway FPCXXX

Industrial Strategies Division, Air Resources Board. XXXX, 2017. Detailed CA-GREET Pathway for Liquefied Hydrogen Produced in California from Central Reforming of Biomethane from North American Landfills. Version X. Pathway FPCXXX

Industrial Strategies Division, Air Resources Board. XXXX, 2017. Detailed CA-GREET Pathway for Compressed Hydrogen Produced in California from Electrolysis using California Average Grid Electricity. Version X. Pathway FPCXXX

Industrial Strategies Division, Air Resources Board. XXXX, 2017. Detailed CA-GREET Pathway for Compressed Hydrogen Produced in California from Electrolysis using Solar- or Wind-generated Electricity. Version X. Pathway FPCXXX

## Table 7. Lookup Table for Gasoline and Diesel and Fuels that Substitute for Gasoline and Diesel.

| Fuel | Fuel Pathway Identifier | Fuel Pathway Description | Carbon Intensity Values ($gCO_2e/MJ$) |
|---|---|---|---|
| CARBOB[1] | CBOB | CARBOB - based on the average crude oil supplied to California refineries and average California refinery efficiencies | 100.82 |
| Diesel[1] | ULSD | ULSD - based on the average crude oil supplied to California refineries and average California refinery efficiencies | 101.97 |
| Compressed Natural Gas | CNGF | Compressed Natural Gas – Pipeline Average North American Fossil Natural Gas | 86.57 |
| Propane | PRPF | Fossil LPG from crude oil refining and natural gas processing used as a transport fuel | 81.08 |
| Electricity | ELCG | California average grid electricity supplied to electric vehicles | 93.05 (subject to annual updates) |
| | ELCR | Electricity that is generated from 100 percent solar or wind supplied to electric vehicles in California | 0 |
| Hydrogen | HYGF | Compressed H2 produced in California from central reforming of North American fossil-based NG | 105.65 |
| | HYGX | Liquefied H2 produced in California from central reforming of North American fossil-based NG | 151.01 |
| | HYGRB1 | Compressed H2 produced in California from central reforming of North American biomethane from landfills. | 38.79 |
| | HYGRB2 | Liquefied H2 produced in California from central reforming of North American biomethane from landfills | 61.62 |
| | HYGFE | Compressed H2 produced in California from electrolysis using California average grid electricity | XX.XX |
| | HYGRE | Compressed H2 produced in California from electrolysis using solar- or wind-generated electricity | XX.XX |

(d) *Final Step in Processing a Lookup Table Fuel Pathway Application.*

(1) *Completeness Check for Renewable Electricity and Hydrogen Pathways.* For the Lookup Table pathways listed in 95488.1(b)(2), the Executive

Officer will evaluate submitted information for completeness. The Executive Officer shall contact the applicant regarding any lack of required information or clarification of submitted information. If the fuel pathway applicant does not provide a satisfactory response to address the request within 15 business days, the Executive Officer will move to reject the pathway application. Applicants whose applications are rejected may submit a new application that addresses deficiencies highlighted during the earlier review.

(2) To use any Lookup Table Pathway in the LRT-CBTS, the fuel pathway applicant will be notified to submit the Fuel Pathway Applicant Attestation Letter if one is not on file.

(3) The Executive Officer retains the authority to choose to allow or reject the use of a Lookup Table pathway by a fuel reporting entity.

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).

Section 95488.5 details updates to application requirements and the certification process for the Tier 1 classification. The most significant changes to these requirements are 1) the replacement of the Tier 1 Calculator with fuel-specific Simplified CI Calculators, and 2) the removal of requirements to upload certain documentation that would be reviewed by third party verifiers instead of LCFS staff.

## § 95488.5. Tier 1 Fuel Pathway Application Requirements and Certification Process.

(a) *Documentation Required for Tier 1 Pathways*. A fuel pathway applicant may apply for a Tier 1 pathway using the provisions set forth in this section. After satisfying all requirements for pathway and facility registration in 95488.2, the applicant must submit the following information to the Executive Officer for consideration of a Tier 1 pathway CI.

(1) *Simplified CI Calculator.* A fuel pathway-specific Simplified CI Calculator populated with all applicable site-specific operational data inputs. The period covered shall be the most recent two-year (24 month) period of steady-state operation. Fields that require site-specific inputs are marked in the Simplified CI Calculator. Site-specific inputs may include, but are not limited to feedstock transport modes and distances, the monthly quantity of all feedstocks consumed in the fuel production facility, the electricity generation mix of the subregion(s) where feedstock and fuel

production occur, the types and monthly quantities of all energy used in the production of the fuel, the monthly quantities of fuel produced, and finished fuel transport modes and distances.

(A) The Simplified CI Calculators include appropriate LUC or other indirect carbon intensity values from Table 6 when applicable.

(B) Detailed instructions for completing site-specific and user-defined inputs for Simplified CI Calculators are included in each fuel-specific Tier 1 CI Calculation and Operating Conditions Manual accompanying each Calculator.

(C) *User-defined process energy option.* Applicants whose fuel production facilities or feedstock source regions are located in an area for which there is no corresponding eGRID subregion included in the CI Calculator may select the user-defined option, and shall consult with the Executive Officer for approval of the data prior to submitting an application.

(D) *Supplemental Information.* Supporting evidence for specified inputs to the CI calculator can be uploaded to the AFP as a supplemental information document, as needed. Supplemental information is required under the following circumstances:

1. If an alternative form of process energy supplied directly to the production facility are used, such as biomethane, evidence must be provided to identify the source.

2. If the fuel pathway applicant selects user-defined emission factors for regions not currently included in the Simplified CI Calculator, to reflect the grid electricity resource mix, crude and natural gas for that region. Supporting evidence and data sources for these emission factors must be provided.

3. 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, supporting evidence of the energy consumed for those processes must also be submitted.

4. If the fuel production facility is co-located with one or more unrelated facilities, and energy consumption data (or other data required in calculating CI) are not separately available for the fuel production facility, the applicant shall install automated metering equipment with electronic data archival to enable an Executive Officer accredited verification body to

confirm energy consumption data for the 24 months of commercial operation being verified. The metering should be capable of recording daily total energy consumption data. The same requirements apply if the same facility includes multiple operations including fuel production.

5. Other information to facilitate staff review may also be included as part of the supplemental information.

(b) *Certification Process for Tier 1 Pathway Applications.*

(1) *Completeness Review.* The Executive Officer will evaluate the inputs to the Simplified CI Calculator and check for completeness. This will include review of any supplemental information if included with the application.

(A) *Application Complete.* If the Executive Officer deems the Simplified CI Calculator and supplemental information complete, the fuel pathway applicant shall be notified as such. The applicant shall then seek the services of an Executive Officer accredited verification body to complete a pathway validation as specified in Section 95501.

(B) *Application Incomplete.* If the Executive Officer deems the Simplified CI Calculator and supplemental information incomplete, the Executive Officer will reject the pathway application without prejudice and inform the fuel pathway applicant of the rationale for rejection. Applicants whose applications are rejected may submit a new application which addresses deficiencies highlighted during the earlier review.

(2) *Validation.* See section 95500 for a full description of the Validation process.

(3) *Certification.* The Executive Officer alone retains the authority to certify or reject a pathway application.

(A) The Executive Officer will complete a pathway summary of the inputs, the facility average fuel production yield, CI results, and any limitations or conditions not specifically named in this subarticle.

(B) Upon certification, the fuel pathway applicant(s) becomes the fuel pathway holder(s) for the certified fuel pathway and is subject to the requirements of 95488.9 in order for that pathway to remain eligible for reporting and credit generation purposes.

(C) If the Executive Officer at any time determines that a certified fuel pathway does not meet the requirements of this subarticle or the operational conditions specified in the pathway summary issued by the Executive Officer, the Executive Officer may revoke or modify the certification as is necessary.

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).

Section 95488.6 describes updates to the requirements for Tier 2 applications. These requirements have not changed significantly, but have been simplified when possible to remove requirements to upload certain documentation that would be reviewed by third party verifiers instead of LCFS staff.

## § 95488.6. Tier 2 Fuel Pathway Application Requirements and Certification Process.

(a) *Documentation Required for Tier 2 Pathways*. A fuel pathway applicant may apply for a Tier 2 pathway using the provisions set forth in this section. After satisfying all requirements for pathway and facility registration in 95488.2, the applicant must submit the following information to the Executive Officer for consideration of a Tier 2 pathway CI:

(1) *CA-GREET Model.* A copy of the CA-GREET3.0 spreadsheet prepared for the life cycle analysis of the proposed fuel pathway. Tier 2 pathway carbon intensities must be calculated using the CA-GREET3.0 model with the most current 24 months of operational data unless the Executive Officer has approved the use of a method or model that is at least equivalent to the calculation methodology used by CA GREET3.0. The CA-GREET3.0 model shall include appropriate LUC values or other indirect carbon intensity value from Table 6 when applicable.

(2) *Life Cycle Analysis Report*. A life cycle analysis report that 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:

1. 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.

2. 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).

3. A description of all material inputs to the production process not covered in 2, above. These include, but are not limited to enzymes, nutrients, chemicals, catalysts, and microorganisms.

4. 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 for each transport mode ~~in each case~~.

5. A description of all facilities and process units involved in the production of fuel under the proposed pathway.

6. 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 fuel pathway applicant exercises control.

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7. 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-GREET3.0 analysis must be identified. Internally generated power such as cogeneration and combined heat and power must also be described. All fuel pathway 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-GREET3.0 contains these eGRID subregional energy mixes. Applicants whose fuel production facilities or feedstock source regions are located in an area for which there is no corresponding eGRID subregion included in the CI Calculator must enter user-defined energy resources and submit the source of the data utilized to the Executive Officer for approval.

8. 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. If a co-product (e.g., electricity) is exported across the fence line, details of the quantity of energy transferred on a daily basis shall be monitored using data systems with electronic archival.

(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, fuel 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:

1. A table showing all CA-GREET3.0 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)(2) below, this table shall enable the Executive Officer to enter the reported inputs into a copy of CA-GREET3.0 and to replicate the carbon intensity results reported in the application.

2. A detailed discussion of all modifications other than those covered by subsection (B)(1) above, made to the CA-GREET3.0 spreadsheet. This discussion shall allow the Executive Officer to duplicate all such modifications and, in combination with the inputs identified in subsection (B)(1) above, replicate the carbon intensity results reported in the application.

3. Documentation of all CA-GREET3.0 values used in the carbon intensity calculation process.

4. A detailed description of all supporting calculations that were performed outside of the CA-GREET3.0 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. For facilities which are co-located with other production facilities or utilize multiple processing operations in addition to fuel production, demonstration of energy use should conform to section 95488.5(a)(1)(D)4.

(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.

(E) 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.

(F) A copy of the federal Renewable Fuel Standard (RFS) Third Party Engineering Review Report required pursuant to 40 CFR part 80.1450, if available. If the RFS engineering report is not available, the Life Cycle Analysis Report shall explain why it is not available.

(G) A copy of the federal Renewable Fuel Standard (RFS) Fuel Producer Co-products Report as required pursuant to 40 CFR 80.1451(b)(1)(ii)(M)-(N), if available.

(b) *Documents for Public Review.* Section 95488.7(c) contains requirements regarding treatment of confidential business information. For Tier 2 pathways, a separate, redacted version of any documents containing CBI must be submitted 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 fuel pathway applicant claims that information it submits is confidential, it must also provide contact information required by California Code of Regulations, title 17, section 91011.

(c) Certification process for Tier 2 pathway applications.

(1) *Completeness Review.* The Executive Officer shall evaluate the LCA Report, CA-GREET3.0 model, and all submitted documentation for completeness in order to conduct a comprehensive evaluation of the pathway application and confirm that the methods presented are permissible from a well-to-tank life cycle perspective. The Executive Officer may contact the fuel pathway applicant for an explanation of any questionable inputs, methods or lack of information in the application. The applicant must respond to address the request within 15 business days.

(A) *Application Complete.* If the Executive Officer deems the Tier 2 application and LCA report complete and permissible from a Life Cycle Analysis perspective, the applicant will be notified as such.

The fuel pathway applicant must then seek the services of an Executive Officer accredited verification body for validation as specified in section 95501.

(B) *Application Incomplete.* If the Executive Officer deems the Tier 2 application incomplete, and the applicant does not provide a satisfactory response to address the deficiencies within 15 business days, the Executive Officer will move to reject the pathway application without prejudice and inform the applicant of the rationale for rejection. Fuel pathway applicants whose applications are rejected may submit a new application that addresses deficiencies highlighted during the earlier review.

(2) *Validation.* See section 95500 for a full description of the validation process and outcomes.

(3) *Engineering review*. The Executive Officer has the authority to request any supporting documentation to investigate specific inputs in the fuel pathway applicant's submitted CA-GREET3.0 model.

(A) The Executive Officer will evaluate all applications against the following criteria:

1. The Executive Officer will attempt to replicate the applicant's carbon intensity calculations. Replication will proceed as follows:

a. Starting with a copy of CA-GREET3.0 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.
b. The Executive Officer will then apply all CA-GREET3.0 modifications reported by the applicant.
c. If the Executive Officer is able to duplicate the applicant's results, the Executive Officer will proceed to subsection (A)2. below. If the Executive Officer is not able to duplicate the applicant's CA-GREET3.0 results, the application shall be denied.

2. The Executive Officer will evaluate the validity of all inputs and methods 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.

(B) *Site-specific Inputs.* A Tier 2 pathway is expected to be unique with no predetermined life cycle analysis profile; therefore such

pathways do not include a defined set of predetermined site-specific inputs. As part of the review process, the Executive Officer shall identify all site-specific inputs for a Tier 2 pathway and make this available for review by the fuel pathway applicant. The applicant has 15 business days to review and accept the Executive Officer's proposed site-specific inputs. If there is disagreement, the applicant may suggest modified site-specific inputs within this period. The Executive Officer shall review all of the applicant suggested inputs and shall present to the applicant a final list of site-specific inputs. The applicant then has 7 business days to accept the updated site-specific inputs. If the applicant disagrees with the final list of site-specific inputs, the pathway may be withdrawn or will be rejected by the Executive Officer. The Executive Officer shall have the right to determine a final list of all site-specific inputs for Tier 2 pathways and the decision if binding.

(4) *Public Comment Period.* The application package, containing documents prepared by the applicant for public review, will be posted to the LCFS fuel pathway comments web site for public comment once the Executive Officer completes a final check of the pathway application to ensure it has met all requirements for certification.

(A) 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 fuel pathway 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 fuel pathway 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.

(B) The Executive Officer will evaluate the fuel pathway applicant's responses to the comments received, and determine whether they have adequately addressed the potential factual or methodological errors identified in those comments. If the applicant's responses are deemed to have adequately addressed the comments received, those responses will be posted to the LCFS fuel pathway comments web site, and the pathway (as revised, if revisions were necessary) will be certified and posted to the LCFS fuel pathway certification web page. If the applicant's responses are deemed to have inadequately addressed the potential factual or methodological errors identified in the comments received, or if the applicant fails to submit responses to those comments, the application will be denied.

(C) If no public comments are received, the application will be certified and moved to the LCFS fuel pathway certification web page.

(5) *Certification.* The Executive Officer alone retains the authority to certify or reject a pathway application.

(A) The Executive Officer will complete a pathway summary of the inputs, the facility average fuel production yield, CI results, and any limitations or conditions not specifically named in this subarticle. The pathway summary will be posted to the LCFS Fuel Pathway web page.

(B) Upon certification, the fuel pathway applicant(s) becomes the fuel pathway holder(s) for the certified fuel pathway and is subject to the requirements of 95488.9 in order for that pathway to remain eligible for reporting and credit generation purposes.

(C) If the Executive Officer at any time determines that a certified fuel pathway does not meet the requirements of this subarticle or the operational conditions specified in the pathway summary issued by the Executive Officer, the Executive Officer may revoke or modify the certification as is necessary.

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).

Section 95488.7 covers requirements applying to all applications and certified CI values, under any of the three pathway classifications. Significant changes in this section include the addition of chain of custody requirements for "specified source" feedstocks, and changes to provisions under subsection (h), *Relationship of Pathway Carbon Intensities to Units of Fuel Sold in California,* including pathways with multiple feedstocks or co-products and new provisions for accounting for renewable electricity.

## § 95488.7. Fuel Pathway Application Requirements Applying to All Classifications.

(a) *Requirements for Attestation Letter*. Each fuel pathway application must include a Fuel Pathway Applicant Attestation Letter. The 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. The Attestation Letter must conform to the format listed in 95488.7(a)(2). The Attestation Letter is submitted after validation but before the Executive Officer conducts the final review of the pathway.

The Fuel Pathway Applicant Attestation Letter must make the following specific attestations:

(1) 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.

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

(A) Feedstocks used to produce the fuel;
(B) Fuel and feedstock production technology;
(C) Regions in which feedstocks and finished fuel are produced;
(D) Modes used to transport feedstocks and finished fuel and the transport distances involved;
(E) Types and amounts of thermal and electrical energy consumed in both feedstock and finished fuel production;
(F) Full life cycle carbon intensity, which must be no higher than the carbon intensity specified in the Tier 1 or Tier 2 application; and
(G) Fuel production operations.

(3) The signed LCFS Fuel Pathway Applicant Attestation Letter must:

(A) Be submitted as a scanned electronic copy;
(B) Be on company letterhead;
(C) Be signed by an officer of the fuel pathway applicant with the legal authority to attest to the veracity of the information in the application and to sign on behalf of the applicant;
(D) Be from the fuel pathway applicant and not from an entity representing the applicant (such as a consultant or legal counsel); and
(E) 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~~Fuel Pathway Applicant) 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

(b) *Scientific Defensibility*. For a proposed Tier 2 pathway to be approved by the Executive Officer, the fuel pathway 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 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). The Executive Officer's decision to accept or reject the applicant's scientifically defensible demonstration is binding and not subject to appeal.

(c) *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 fuel pathway 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.

(d) *Public Disclosure of Application Materials and Use of Application Materials in the LCFS Data Management System.*

(1) All information not identified as trade secrets are 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

(2) 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 LDMS for use by fuel reporting entities using the applicant's certified fuel pathway.

(e) *Submittal File Formats.* 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. The signed LCFS Fuel Pathway Applicant Attestation Letter required under section 95488.7(a) must be submitted as a scanned electronic copy.

(f) *Additional Submission and File Format Requirements.* A fuel pathway application for a fuel's carbon intensity value must meet all the following requirements:

(1) All relevant data, calculations, and other documentation required to substantiate a fuel pathway application must be uploaded to the AFP.
(2) The fuel pathway applicant must not convert spreadsheets, including CA-GREET3.0 spreadsheets into other file formats, or otherwise take steps to prevent the Executive Officer from examining the contents of all cells in those spreadsheets;
(3) The fuel pathway applicant must demonstrate, upon request from the Executive Officer, that the fuel that will be produced under the proposed pathway would comply with all applicable ASTM or other generally recognized national consensus standards;
(4) The fuel pathway applicant must demonstrate, upon request from the Executive Officer, that the fuel that will be produced under the proposed pathway is not exempt from the LCFS under section 95482(c).

(g) *Specified Source Feedstocks*

(1) *Pathways Utilizing a Specified Source Feedstock.* In order to be eligible for a reduced CI that reflects the lower emissions or credit associated with the use of a waste, residue, by-product or similar material as feedstock in a fuel pathway, fuel pathway applicants must meet the following requirements.

(A) *Specified source feedstocks include:*

1. Used cooking oil, animal fats, fish oil, yellow grease, technical corn oil, and other fats/oils/greases that are the non-primary products of commercial or industrial processes for food, fuel or other consumer products, which are used as feedstocks in pathways for biodiesel, renewable diesel, alternative jet fuel, and co-processed refinery products.
2. Pipeline-injected biomethane from landfill or digester projects which displaces fossil natural gas in the pipeline and is claimed as feedstock in pathways for bio-CNG, bio-LNG, bio-L-CNG, and hydrogen via steam methane reformation.
3. Any feedstock whose supplier applies for separate ARB recognition using site-specific CI data, and
4. Other feedstocks designated as specified-source at the time of pathway review and prior to certification.

(B) *Chain-of-custody Evidence.* Fuel pathway applicants using specified source feedstocks must maintain records demonstrating chain of custody along the supply chain to the point of origin. Chain-of-custody evidence is used to demonstrate proper characterization, accurate quantity, and pretreatment energy use less than the standard value. Chain-of-custody evidence must be provided to the verifier and to ARB upon request. Joint Applicants may assume responsibility for different portions of the chain-of-custody evidence but each such entity must meet the following requirements to be eligible for a pathway that utilizes a specified source feedstock:

1. Maintain records of the type and quantity of feedstock obtained from each supplier, including Feedstock transaction records, Feedstock Transfer Documents pursuant to section 95488(a)(7)(C), weighbridge tickets, bills of lading or other documentation for all incoming and outgoing feedstocks;
2. Records used for material balance calculations.

3. Ensure ARB staff and verifier access to audit feedstock suppliers to demonstrate proper accounting of attributes and conformance with certified CI data.

(C) *Feedstock Transfer Documents.* A feedstock transfer document must prominently state the information specified below.

1. Transferor Company name, address and contact information;
2. Recipient Company name, address and contact information;
3. Type and amount of feedstock, including units;
4. Transaction date.

(h) *Relationship of Pathway Carbon Intensities to Units of Fuel Sold in California.*

(1) 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 pathway unless a CI calculated from production data covering a full two years 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 fuel reporting entities using those CIs to report the fuel 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 24 months of operations, that is equal to or less than the CIs reported in the LRT-CBTS system and on product transfer documents. Fuel reporting entities 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.

(2) 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:

(A) 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. A hydrogen production facility may, for example, distinguish natural gas and renewable natural gas used as feedstock for steam methane reformation.

(B) 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.

(3) 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 production facility's average fuel yield values on a mass or energy-basis. Each feedstock-specific subdivision of the total fuel quantity produced shall be labeled with the certified CI associated with that feedstock.

(4) 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:

(A) 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.

(B) 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 quantity 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.

(5) Unless either or both of the two conditions specified in subsection 95488(c)(3) through (4), 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.

(6) Except when either or both of the two conditions specified in subsection (2), 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.

(i) *Renewable or Low-CI Process Energy.* Unless expressly provided elsewhere in this subarticle, indirect accounting mechanisms for renewable or low-CI process energy, such as the use of renewable energy certificates, cannot be used to reduce CI. In order to qualify as a low-CI process energy source, energy from that source must be directly consumed in the production process.

(1) Renewable electricity must be supplied behind the meter from a dedicated form of generation, such as wind turbines and photovoltaic arrays. Such renewable electricity must be able demonstrate:

(A) Any renewable electricity certificates or other renewable attributes associated with the energy are not produced, or are retired and not counted under any other program.

(B) The generation source is directly connected through a dedicated line to the production facility unless:

1. An electricity storage system is used to demonstrate electricity storage coincident with the renewable electricity generation at a facility located within the same EDU territory, and

2. The electricity storage facility was built on or after December 31, 2010, and

3. The electricity stored at the storage facility is greater than or equal to the electricity claimed to be used at the production facility, and

4. The electricity that is generated and stored generates no renewable electricity certificates or other renewable attributes associated with the energy claimed for CI reduction.

(3) Notwithstanding the above, indirect accounting of renewable process energy may be used for fuel pathways involving hydrogen fuel and electricity used for electric vehicle charging.

NOTE: Staff has received considerable feedback regarding potential renewable electricity provisions and the relationship between renewable natural gas accounting and renewable electricity accounting. We are in the process of working with stakeholders to develop a proposal to provide additional flexibility in accounting for renewable electricity in electric vehicle and hydrogen fuel cell vehicle applications.

(j) *Measurement Accuracy.*

NOTE: Staff is contemplating language similar to the Mandatory Reporting Regulation section 95103(k) for measurement accuracy requirements, available at: https://www.arb.ca.gov/regact/2014/ghg2014/mrrfrooal.pdf.

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).

Section 95488.8 contains provisions that are used only in specific situations. Substantiality requirements and Temporary fuel pathway CI values have been updated. Provisional pathway provisions include requirements and schedules for validation and verification. In addition, a category known as "design-based" pathways has been added for facilities not yet in commercial production to obtain a CI that *cannot* be used to generate credits.

## § 95488.8. Special Circumstances for Fuel Pathway Applications.

(a) *Substantiality Requirements.* The substantiality requirement applies when fuel pathway applicants seek, in the initial application, to apply for two or more pathways for the same feedstock-fuel combination based on differences in feedstock source regions, co-products, low-CI process energy inputs, or transportation parameters. Separate pathways shall be considered only when the CI of one or more of the proposed pathways meet the substantiality requirement relative to the CI of the reference pathway. The "reference" pathway in this instance is the composite CI that results when the fuel is modeled using a single pathway that represents the average production of all quantities of the fuel produced in the operational data period. The Executive Officer shall have the final authority to consider requests related to substantiality and the Executive

Officer's decision shall be binding and not subject to appeal. The applicant must demonstrate, to the Executive Officer's satisfaction, that the proposed pathway meets the following requirements:

(1) The source-to-tank carbon intensity of the fuel under the proposed pathway meets one of the following two criteria. "Source-to-tank," also referred to as "well-to-tank," means all the steps involved in feedstock production and transport, including any credit for emissions avoided by the use of the feedstock, and finished fuel production and transport, and co-products produced. A source-to-tank CI does not include the carbon intensity associated with the use of the fuel in a vehicle and does not include the LUC modifier.

(A) For proposed pathway applications with source-to-tank carbon intensities greater than 20 $gCO_2e$/MJ (absolute value), that source-to-tank carbon intensity must be at least 5 percent lower than the source-to-tank carbon intensity of the reference pathway; or

(B) For proposed pathway applications with source-to-tank carbon intensities of 20 $gCO_2e$/MJ (absolute value) 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) *Temporary FPCs.*

(1) Fuel reporting entities may petition the Executive Officer to use a Temporary Fuel Pathway Code and carbon intensity value for reporting purposes. The Executive Officer's decision to approve is binding and not subject to appeal if an entity is denied the use of a Temporary FPC.

(2) Pursuant to subsection (A) above, the Executive Officer may grant fuel reporting entities permission to use one of the Temporary FPCs with carbon intensities shown in Table 8 for gasoline- and diesel-substitute fuels respectively.

(3) Based on timely reports using Temporary FPCs, the fuel reporting entity may generate credits or deficits.

(4) A Temporary FPC approved for use by the Executive Officer will be permitted for LRT-CBTS reporting purposes for up to two quarters at a time. Extension beyond two quarters shall be considered by the Executive Officer if delays to submitted fuel pathway application review, validation and certification occur. Reporting will be granted only for the quarter during which a temporary FPC is approved for use and the subsequent full quarter.

(5) A request to use a Temporary FPC must be submitted online using the Temporary FPC Request Form in the AFP.

## Table 8. Temporary FPCs

| Fuel | Feedstock | Process Energy | FPC | CI ($gCO_2e/MJ$) |
|---|---|---|---|---|
| Ethanol | Corn | Grid electricity, natural gas, and/or renewables | ~~ETH100T~~ | ~~75.97~~ 85 |
| | Sorghum | Grid electricity, natural gas, and/or renewables | ~~ETH101T~~ | ~~83.49~~ 90 |
| | Any Sugar ~~Cane and molasses~~ Feedstock | Bagasse and straw only; no grid electricity | ~~ETH102T~~ | ~~56.66~~ 60 |
| | ~~Any starch or sugar feedstock~~ | ~~Any another~~ | ~~ETH103T~~ | ~~98.47~~ |
| | ~~Corn Stover~~ Any Cellulosic Biomass | ~~As specified in CA-GREET 2.0~~ Grid electricity, natural gas, and/or renewables | ~~ETH104T~~ | ~~41.05~~ 50 |
| ~~Biodiesel~~ Biomass-based Diesel | ~~Any feedstock derived from animal fats~~ Fats/Oils/Grease Residues | Grid electricity, natural gas, and/or renewables | ~~BIOD200T~~ | ~~37.54~~ 65 |
| | Any feedstock derived from plant oils, excluding palm oil | Grid electricity, natural gas, and/or renewables | ~~BIOD201T~~ | ~~56.95~~ 80 |
| | Any other feedstock | ~~Any other~~ Grid electricity, natural gas, and/or renewables | ~~BIOD202T~~ | ~~102.01~~ 103 |
| ~~Renewable Diesel (UOP process)~~ | ~~Any feedstock derived from animal fats~~ | ~~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~~ 100 |
| Fossil L-CNG | Petroleum Natural Gas | N/A | ~~LCNG402T~~ | ~~97.33~~ 100 |
| Biomethane CNG | Landfill or digester gas | Grid electricity, natural gas, and/or parasitic load | ~~CNG500T~~ | ~~46.42~~ 60 |

| 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~~ 75 |
| Biomethane L-CNG | Landfill or digester gas | Grid electricity, natural gas, and/or parasitic load | ~~LCNG502T~~ | ~~67.18~~ 80 |
| ~~Electricity~~ | ~~Natural gas, dams, wind, etc.~~ | ~~CA mix average~~ | ~~EL600T~~ | ~~110.42~~ |
| Hydrogen | Centralized reforming of fossil LNG | | ~~HYDN701T~~ | ~~176.58~~ 185 |
| | ~~Centralized reforming of fossil NG~~ | | ~~HYDN702T~~ | ~~113.38~~ |
| | ~~On-site reforming of fossil NG~~ | | ~~HYDN703T~~ | ~~112.48~~ |
| | ~~On-site reforming of NG with renewable feedstocks~~ | | ~~HYDN704T~~ | ~~98.05~~ |
| Any gasoline substitute feedstock-fuel combination not included above | Any | Any | ~~SG800T~~ | ~~98.47~~ 100.82 |
| Any diesel substitute feedstock-fuel combination not included above | Any | Any | ~~SD801T~~ | ~~102.01~~ 101.97 |

(c) *Provisional Pathways.* As set forth in sections 95488.5(a) and 95488.6(a), LCFS fuel pathways are generally developed based on 24 months of operation data. In order to facilitate fuel supply to California from facilities that have not been in commercial production for at least 24 months, the Executive Officer shall consider applications from facilities that have been in operation for less than 24 months, provided they have been in operation for at least three months.

(1) *Application process*. Application requirements are the same as those for the applicable pathway classification type, specified in sections 95488.4, 95488.5 and 95488.6 including validation of the data submitted in support of the provisional pathway application.

(2) *Verification schedule.* The certified pathway is subject to periodic verification as described in section 95501 as applicable for the fuel pathway classification type.

(A) Provisional pathway applications submitted before June 30 of a calendar year would be subject to its corresponding periodic verification.

(B) Provisional pathway applications submitted after June 30 of a calendar year would not be subject to its corresponding verification for the following calendar year but would be required to complete its corresponding verification in the subsequent calendar year.

(3) *Removal of provisional status.* A positive or qualified positive verification statement after the completion of at least 24 months (additional months may be included to correspond to the next verification cycle) of commercial operation shall entail the removal of provisional status of the pathway application, and the pathway shall then be subject to periodic verifications (as required per Section 95500(b)(2).

(2) *Adjusting CI.* For provisional pathways, at any time during the 24 months following provisional validation and certification, the Executive Officer may revise as appropriate the plant's actual operational CI based on positive or qualified positive periodic verification statements and the corresponding CI determined from such verifications. During the intervening period between initial validation and completion of the 24 month requirement, based on timely reports, a fuel reporting entity may generate credits in the LCFS program for reporting fuel using a provisional fuel pathway. Until the Executive Officer has adjusted the CI or informed the fuel pathway applicant that the provisional CI has successfully completed a positive verification covering at least 24 months of commercial operation, the Executive Officer may adjust the number of credits or reverse any credit in the fuel reporting entity's account using the provisional pathway for reporting fuel, without a hearing, notwithstanding the requirements of section 95495.

(3) If, after a plant has been in full commercial production for more than 24 months, 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 and will make any necessary credit adjustment in the fuel reporting entity's account using the provisional fuel pathway for reporting. For pathway applications subject to periodic verification, which could occur beyond the 24 month requirement, retroactivity shall include the entire period from original validation to completion of the periodic verification. The credit adjustment is retroactive from the initial provisional certification of the pathway.

(4) If the plant's operational CI appears to be lower than the certified CI, the Executive Officer will take no action. The fuel pathway applicant may, however, petition the Executive Officer for a CI reduction to reflect operational data. The Executive Officer shall conduct a review and, if the pathway is deemed eligible, the Executive Officer will certify the pathway with the lower CI. The applicant shall not be eligible for any retroactive credit generation, but the revised CI will be valid for future reporting periods.

(d) *Substitute FPCs.* If a fuel reporting entity in unable to determine the FPC for reporting a fuel transaction type listed in subsection (1) below, a Substitute FPC provided on CARB's website shall be used for reporting. Substitute FPCs have CI value based on weighted average CIs of that fuel in the prior year.

(1) The Substitute FPCs are only available in the LRT-CBTS for reporting the following transaction types:

(A) Sold without obligation
(B) Purchased without obligation
(C) Export
(D) Loss of inventory
(E) Not used for transportation

(2) When using a Substitute FPC the fuel reporting entity shall use default values applicable for reporting in the LRT-CBTS, including default Company ID and Facility ID. These default values are provided on the CARB website.

(e) *Design-based pathways.* LCFS fuel pathways are generally developed for fuels that have been in full commercial production for at least 24 months. In order to encourage the development of innovative fuel technologies, however, applicants may submit applications in the AFP for design-based pathways for fully engineered and designed facilities with no operational data from commercial production. Design-based pathways are not eligible for credit generation.

(1) Applications for design-based pathways must include a detailed life cycle analysis of the anticipated pathway performed using the CA-GREET3.0 model, and an LCA report as described in 95488.6(a)(2) detailing facility plans and specifications expected during commercial operation.

(2) The Executive Officer will conduct a detailed evaluation of the submitted information and evaluate whether the applicant provided a sufficient level of detail to warrant confidence in energy consumption and other key performance metrics. If approved, the design-based pathway summary will be posted for public comment as detailed in section 95488.6(d)(3)(A)

for Tier 2 pathways. Certification is contingent upon meeting the certification requirements detailed in section 95488.6(d)(3), exclusive of the validation step.

(3) *Ineligibility for credit generation.* Design-based pathways are not eligible to report fuel volumes to the LRT or generate credits. After a certified design-based pathway has been in commercial production for at least 3 months, in order to be eligible to generate credits, the applicant shall complete a provisional pathway application per section 95488.8(c).

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).

Section 95488.9 covers the responsibilities of fuel pathway holders after certification. Fuel pathway holders must upload their CI Calculator annually with the most recent 2 years of data for the required annual verification, with the option to update CI for future reporting if the actual CI is determined to be lower than the certified CI. Recordkeeping requirements are described in detail.

## § 95488.9. Maintaining Fuel Pathways.

(a) *CI Data Reporting Requirement and Deadline.* Each fuel pathway holder must submit an annual fuel pathway report to the AFP no later than March 31 of each calendar year.

(1) The annual fuel pathway report must include the certified version of the Simplified CI Calculator or the CA-GREET 3.0 model, if required in the initial certification, updated to include the most recent two calendar years of operational data.

(2) Lookup Table pathways for the renewable fuels listed in 95488.1(b)(2), in lieu of the CI calculator, must submit invoices or metering records substantiating the quantity of renewable inputs procured from a qualifying source.

(3) Any fuel pathway holder, including joint applicants, who is not subject to site visits by a third party verifier, whose pathway involves the use of renewable or low-CI process energy, must submit invoices for that energy to the AFP.

(4) Any temporally-variable information requested by the Executive Officer to be included in the initial application as supplementary information, or

required documentation listed in the Pathway Summary operating conditions, must continue to submit this data or documentation annually as part of the annual fuel pathway report.

(5) If the operational CI as calculated from production data covering 24 months of operations is found to be lower than the certified CI, and a positive verification statement is issued for this period, the following options are available:

(A) The fuel pathway holder may elect to keep the originally certified CI.

(B) The fuel pathway holder may request to replace the certified CI with the operational CI based on the previous 24 months of verified steady-state operational data. Fuel pathway holders requesting to replace the certified CI must submit the following:

1. An attestation that the new CI can be maintained through the next reporting period, and acknowledging that exceeding the newly certified CI in subsequent verifications will bring the fuel pathway holder out of compliance.

(6) If the operational CI is found to be greater than the certified CI, the fuel pathway holder is out of compliance with this subarticle and subject to investigation by ARB staff and possible enforcement action.

(b) *Monitoring Plan for Entities Responsible for Verification under the LCFS*. Each entity responsible for validation or verification under the Low Carbon Fuel Standard must complete and retain a written Monitoring Plan for review by a verifier or CARB.

NOTE: Staff is in the process of developing specific content requirements for monitoring plans.

(c) *Verification Requirement and Deadline.* Each fuel pathway holder identified as an entity responsible for verification in section 95500 must obtain third-party verification services from a verification body that meets the requirements specified in section 95502 or certification body that meets the requirements specified in section 95504. A positive or qualified positive verification statement covering the previous reporting period must be submitted to the Executive Officer by the verification or certification body by August 31 in order to maintain a valid fuel pathway code for use in reporting fuel transactions.

(d) *Recordkeeping Requirements.* Fuel pathway holders must maintain all records relied upon in determining the fuel pathway CI and specified below for a period of

ten years. The retained documents, including CI input source data and supplemental documentation, must be sufficient to allow for verification of each CI calculation. The minimum documents for retention include:

(1) The amount 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 fuel pathway applicant's finished fuel shall be maintained.

(4) Copies of the federal Renewable Fuel Standard (RFS) Third Party Engineering Review Report, if required pursuant to 40 CFR 80.1450.

(5) The amount 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 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.

(6) A copy of the federal Renewable Fuel Standard (RFS) separated food waste plan required pursuant to 40 CFR 80.1450(b)(1)(vii)(B), if applicable. Evidence demonstrating chain of custody back to the point of origin is required for feedstocks that are defined as "specified source feedstock" described in 95488.7(g).

(7) Any additional records that the Executive Officer requires to be kept pursuant to section 95488.6(d), and records that demonstrate compliance with all special limitations and operating conditions specified pursuant to section 95488.6(d).

(e) *ARB Request for Records.* Copies of any records or other materials maintained under the requirements of section 95488.4(c) must be made available to the Executive Officer upon request, within 20 calendar days of receipt of such request by the fuel pathway holder.

(f) *Transition to CA-GREET3.0.* For fuel transaction reporting in the 2020 data year and all subsequent years, The Executive Officer will deactivate, within the LRT-

CBTS, all applicant-specific fuel pathways certified pursuant to a prior version of this subarticle using the CA-GREET2.0 model. Pathway holders seeking to generate credits from the fuels covered by these pathways after that date must follow the full pathway application process outlined in this subarticle to receive a certified pathway.

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).

**§ 95488. Obtaining and Using Fuel Pathways.**

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

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

(A) Cellulosic alcohols;

(B) Biomethane from sources other than landfill gas;

(C) Hydrogen;

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

(E) Drop-in fuels (renewable hydrocarbons) except for renewable diesel produced from conventional feedstocks (including but not

limited to plant oils, tallow and related animal wastes, and used cooking oil); and

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

1. Use of one or more low-CI process energy sources. In order to qualify as an innovative, low-CI process energy source, energy from that source must be directly consumed in the production process. No indirect accounting mechanisms, such as the use of renewable energy certificates, can be used to reduce an energy source's CI. Innovative, low-CI energy sources include, but are not limited to renewable electricity from a dedicated (non-grid) form of generation, such as wind turbines and photovoltaic arrays.

2. Use of unconventional feedstocks such as algae oil;

3. Carbon capture and sequestration; and

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

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

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

(B) Direct carbon intensity;

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

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

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

(1) Applicants seeking to obtain a CI under either the Tier 1 or Tier 2 provisions of this regulation order shall begin the application process by completing the online account approval process and completing the electronic New Pathway Request Form, available through the LRT-CBTS

~~web portal (http://www.arb.ca.gov/lcfsrt). The New Pathway Request Form contains the following fields. All that apply are required.~~

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

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

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

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

~~(D) 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 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 energy consumed in both feedstock and finished fuel production;
6. Full life cycle carbon intensity, which must be no higher than the carbon intensity specified in the Tier 1 or Tier 2 application; and
7. Fuel production operations, which shall conform at all times with the fuel pathway described in the Tier 1 or Tier 2 application.

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

2. Invoices and receipts for all forms of energy consumed in the fuel production process, all fuel sales, all feedstock purchases, and all co-products sold. Invoices shall be submitted in electronic form. Each set of invoices shall be accompanied by a spreadsheet summarizing the invoices. Every invoice submitted shall appear as a record in the summary. Each record shall, at a minimum, specify in a separate column the period covered by the purchase, the quantity of energy purchased during that period, the invoice amount, and any special information that applies to that record (the special information column need not be populated for every record). For each form of energy consumed, the two-year total and average consumption shall be reported in the spreadsheet. These two-year totals and averages shall be used to calculate the per-million-Btu and per-megajoule energy consumption inputs used to calculate the life cycle CI of the fuel pathway.

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

    b. *Production Processes Covered.* The invoices submitted under this provision shall cover the energy consumed in all unit operations devoted to feedstock handling and pre-processing; fuel production; co-product handling and processing; waste handling, processing, and treatment; the handling, processing and use of chemicals, enzymes, and organisms; the

generation of process energy, including the generation, handling and processing of combustion fuels; and all plant monitoring and control systems. If the fuel produced or any by-products or co-products receive additional processing after they leave site, such as additional distiller's grains drying or fuel distillation, invoices covering the energy consumed for those processes must also be submitted. If the fuel production facility is co-located with one or more unrelated facilities, and energy consumption invoices are not separately available for the fuel production process, the applicant shall obtain a third-party energy audit sufficient to establish the long-term, typical energy consumption patterns of the fuel production facility.

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

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

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

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

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

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

(B) A regulated party for CARBOB, gasoline, or diesel fuel must use the Tier 2 Lookup Tables, 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. *Energy Invoices*. The applicant shall submit Invoices, as set forth in section 95488(c)(3)(A)2., covering a period of no less

than two years for all forms of energy consumed in the fuel production process.

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

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

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

1. If the Executive Officer has reason to believe that the regulated party's choice is not the value that most closely corresponds to its fuel pathway CI, the Executive Officer shall choose a carbon intensity value from the Tier 2 Lookup Table 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), which is incorporated herein by reference,

b. The Tier 2 California-modified GREET model, version 2.0 (CA-GREET2.0 T2, September 29, 2015), which incorporated herein by reference, or

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

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

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. Low Carbon Fuel Standard (LCFS) Pathway for the Production of Biomethane from the Mesophilic Anaerobic Digestion of Wastewater Sludge at a Publicly-Owned Treatment Works (POTW). Version 2.0. Pathways CNG020 and CNG021.

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

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

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

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

Industrial Strategies Division, Air Resources Board. December 15, 2014. Detailed CA-GREET Pathway for Compressed Gaseous Hydrogen from North

~~American Natural Gas. Version 3. Pathways HYGN001, HYGN002, HYGN003, HYGN004, and HYGN005.~~

## 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 | CARBOB - based on the average crude oil supplied to California refineries and average California refinery efficiencies | 99.78 | 0 | 99.78 |
| Diesel[1] | ULSD001 | ULSD - based on the average crude oil supplied to California refineries and average California refinery efficiencies | 102.01 | 0 | 102.01 |
| | CNG005 | Biomethane produced from the high-solids (greater than 15 percent total solids) anaerobic digestion of food and green wastes; compressed in CA | -22.93 | 0 | -22.93 |
| | CNG020 | Biomethane produced from the mesophillic anaerobic digestion of wastewater sludge at a California publicly owned treatment works; on-site, high speed vehicle fueling or injection of fuel into a pipeline for off-site fueling; export to the grid of surplus cogenerated electricity. | 7.75 | 0 | 7.75 |
| | CNG021 | Biomethane produced from the mesophillic anaerobic digestion of wastewater sludge at a California publicly owned treatment works; on-site, high speed vehicle fueling or injection of fuel into a pipeline for off-site fueling. | 30.92 | 0 | 30.92 |
| Electricity | ELC002 | California grid electricity | 105.16 | 0 | 105.16 |
| | HYGN001 | Compressed $H_2$ from central reforming of NG (includes liquefaction and re-gasification steps) | 151.01 | 0 | 151.01 |
| | HYGN002 | Liquid $H_2$ from central reforming of NG | 143.51 | 0 | 143.51 |
| | HYGN003 | Compressed $H_2$ from central reforming of NG (no liquefaction and re-gasification steps) | 105.65 | 0 | 105.65 |
| | HYGN004 | Compressed $H_2$ from on-site reforming of NG | 105.13 | 0 | 105.13 |
| | HYGN005 | Compressed $H_2$ from on-site reforming with renewable feedstocks | 88.33 | 0 | 88.33 |

[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.

~~(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 x $10^9$ megajoules) of that fuel.

3. *Designation of Confidential Business Information.* The definition of "confidential business information," for the purposes of this section, is the same as the definition of "trade secret" found in Government Code, section 6254.7. All documents (including spreadsheets and other items not in a standard document format) that the applicant has designated as containing confidential business information (CBI) must prominently display the phrase "Contains Confidential Business Information" above the main document title and in a running header. Additionally, a separate, redacted version of such documents must also be submitted. The redacted versions must be approved by the applicant for posting to a public LCFS web site. Within redacted documents, specific redactions must be replaced with the phrase "The Applicant has Redacted Confidential Business Information." This phrase must be displayed clearly and prominently wherever CBI has been redacted. If the applicant claims that information it submits is confidential, it must also provide contact information required by California Code of Regulations, title 17, section 91011.

4. *Public Disclosure of Application Materials and Use of Application Materials in the LRT-CBTS System.*

a. All information not identified as trade secrets are subject to public disclosure pursuant to California Code of Regulations, title 17, sections 91000 through91022 and the California Public Records Act (Government Code §§ 6250 et seq.); and

b. If the application is certified by the Executive Officer, the carbon intensity values, certain associated parameters, and other fuel-pathway-related information obtained or derived from the application will be incorporated into the LRT-CBTS system for use by regulated parties using the applicant's certified fuel pathway.

5. *Submittal File Formats.* All applications and supporting documents shall be in electronic form unless the Executive Officer has approved or requested in writing another submission format. Documents such as receipts, which are available in paper form only, shall be scanned into an electronic file for submittal. The LCFS Fuel Producer Attestation Letter required under section 95488(c)(2) shall be submitted as an original copy on paper and as a scanned electronic copy.

6. *Additional Submission and File Format Requirements.* An applicant proposing Method 2A or 2B for a fuel's carbon intensity value must meet all the following requirements:

a. All relevant data, calculations, and other documentation in subsection (A) above must be uploaded through the LRT-CBTS web portal (http://www.arb.ca.gov/lcfsrt);

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.

(l) *Specific Method 2A and 2B Fuel Pathway Application Requirements*. Unless otherwise noted, all applicants for a certified Method 2A or 2B fuel pathway shall submit the items specified in this section.

1. *A Life Cycle Analysis Report*. A life cycle analysis report describes the full fuel life cycle, and describes in detail the calculation of the fuel pathway CI. The report shall contain sufficient detail to allow staff to replicate the CI calculated by the applicant. All inputs to, and outputs from, the fuel production process that contribute to the life cycle CI must be described in the life cycle analysis report. These inputs and outputs must then be fully accounted for in the calculation of the fuel pathway CI. The life cycle analysis report shall include the following information:

a. A detailed description of the full fuel production process. The description shall include:

i. A description of the full well-to-wheels fuel life cycle, including the locations where each primary step in the fuel life cycle occurs. This description shall identify where the system boundary was established for the purposes of performing the life cycle analysis on the proposed pathway. The discussion of the system boundary shall be accompanied by a schematic depicting the system boundary. That schematic shall show all feedstock and fuel production units that are included in the system boundary, as well as all material and energy flows across the system boundary. Any feedstock or fuel production units that have been excluded from the system must be shown on the schematic, and must be explicitly discussed in the narrative description of the full fuel life cycle.

ii. A description of all fuel production feedstocks used, including all pre-processing to which feedstocks are subject. For fuels utilizing agricultural crops for feedstocks, the

description shall include the agricultural practices used to produce those crops. This discussion shall cover energy and chemical use, typical crop yields, feedstock harvesting, transport modes and distances, storage, and pre-processing (such as drying or oil extraction).

iii. A description of all material inputs to the production process not covered in ii., above. These include, but are not limited to enzymes, nutrients, chemicals, and microorganisms.

iv. A description of the transportation modes used throughout the fuel life cycle. This discussion must identify origins and destinations, cargo carrying capacities, fuel shares, and the distances traveled in each case.

v. A description of all facilities and process units involved in the production of fuel under the proposed pathway.

vi. A list of all combustion-powered equipment, along with their respective capacities, sizes, or rated power, and type and amount of fuel combusted, throughout all phases of the fuel life cycle over which the applicant exercises control.

vii. A quantitative discussion of the thermal and electrical energy consumption that occurs throughout all phases of the fuel life cycle over which the applicant exercises control. All fuels used (natural gas, biogas, coal, biomass, etc.) must be identified and use rates quantified. The regional electrical energy generation fuel mix used in the CA-GREET2.0-T2 analysis must be identified. Internally generated power such as cogeneration and combined heat and power must also be described. All applicants using grid electricity must choose electrical generation energy mixes from among the 26 subregions in the ninth edition of the U.S. EPA's Emissions and Generation Resource Integrated Database (eGRID).

~~CA-GREET2.0-T2 contains these eGRID subregional energy mixes.~~

viii. ~~A description of all co-products, byproducts, and waste products associated with production of the fuel. That description shall extend to all processing, such as drying of distiller's grains, applied to these materials after they leave the fuel production process, including processing that occurs after ownership of the materials passes to other parties. Moreover, if a co-product credit is claimed for a co- or by-product, that credit must reflect all post-fuel-production processing steps covered by this section.~~

b. ~~A detailed description of the calculation of the pathway CI. This description must provide clear, detailed, and quantitative information on process inputs and outputs, energy consumption, greenhouse gas emissions generation, and the final pathway carbon intensity, as calculated using the approved version of CA-GREET. Important intermediate values in each of the primary life cycle stages shall be shown. Those stages include but are not limited to feedstock production and transport; fuel production, transport, and dispensing; co-product production, transport and use; waste generation, treatment and disposal; and fuel use in a vehicle. This description shall include, at a minimum:~~

i. ~~A table showing all CA-GREET2.0-T2 input values entered by the applicant. The worksheet, row, and column locations of the cells into which these inputs were entered shall be identified. In combination with the inputs identified in subsection b.ii. below, this table shall enable the Executive Officer to enter the reported inputs into a copy of CA-GREET2.0-T2 and to replicate the carbon intensity results reported in the application.~~

ii. ~~A detailed discussion of all modifications other than those covered by subsection b.i. above, made to the CA-GREET2.0-T2 spreadsheet. This discussion shall allow the Executive~~

Officer to duplicate all such modifications and, in combination with the inputs identified in subsection b.i. above, replicate the carbon intensity results reported in the application.

iii. Documentation of all CA-GREET2.0-T2 values used in the carbon intensity calculation process.

iv. A detailed description of all supporting calculations that were performed outside of the CA-GREET2.0-T2 spreadsheet.

c. Descriptions of all co-located facilities, which in any way utilize outputs from, or provide inputs to the fuel production facility. Such co-located facilities include but are not limited to cogeneration facilities, facilities that otherwise provide heat or electrical energy to the fuel production process, facilities that process or utilize co-products such as distillers grains with solubles, and facilities which provide or pre-process feedstocks or thermal energy fuels. If energy is supplied to the fuel production facility by a co-located cogeneration plant and that plant also supplies energy to other facilities, those other facilities must be identified and described.

d. A list of references covering all information sources used in the preparation of the life cycle analysis. All reference citations in the life cycle analysis report shall include standard in-text parenthetical citations stating the author's last name and date of publication. Each in-text citation shall correspond to complete publication information provided in the list of references. Complete publication information shall at a minimum, identify the author(s), title of the referenced document (and of the article within that document, if applicable), publisher, publication date, and pages cited. For internet citations, the reference shall include the universal resource locator (URL) address of the citation, as well as the date the web site was last accessed.

2. Except as specified in section 95488(d)(2), the applicant shall submit receipts and invoices, as set forth in section

95488(c)(3)(A)2., covering a period of no less than two years for:

a. All forms of energy consumed in the fuel production process.
b. All fuel sales.
c. All feedstock purchases.
d. All co-product sales.

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

4. The geographical coordinates of fuel production facility. Geographical coordinates can be reported either as the longitude and latitude or as the Universal Transverse Mercator coordinates.

5. A copy of the CA-GREET2.0-T2 spreadsheet prepared for the life cycle analysis of the proposed fuel pathway. All Method 2A and 2B pathway carbon intensities must be calculated using CA-GREET2.0-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 Executive Officer will evaluate that application to determine whether it has met all requirements necessary for certification.

(D) At any point, and from time to time, during the formal evaluation process, the Executive Officer may request in writing additional information or clarification from the applicant.

~~(E) If the Executive Officer is unable to reach a certification determination, as provided in this subsection, the application will be denied without prejudice. Applications denied without prejudice may be revised and resubmitted for a new certification evaluation.~~

~~(F) The Executive Officer will evaluate all applications against the following criteria:~~

~~1. The Executive Officer will first attempt to replicate the applicant's carbon intensity calculations. Replication will proceed as follows:~~

~~i. Starting with a copy of CA-GREET2.0-T2 that had not previously been used for calculations associated with the proposed pathway, the Executive Officer will enter all the inputs reported by the applicant.~~

~~ii. The Executive Officer will then apply all CA-GREET2.0-T2 modifications reported by the applicant.~~

~~iii. If the Executive Officer is able to duplicate the applicant's CA-GREET2.0-T2 results, the Executive Officer will proceed to subsection (F)2. below. If the Executive Officer is not able to duplicate the applicant's CA-GREET2.0-T2 results, the application shall be denied.~~

~~2. Using the energy purchase and fuel production data obtained from the receipts and invoices submitted by the applicant, the Executive Officer will verify the energy consumption inputs to the CA-GREET2.0-T2 carbon intensity calculations that were submitted by the applicant. If the Executive Officer is unable to verify the applicant's CA-GREET2.0-T2 energy consumption inputs by calculating them from energy receipt data and fuel production volumes, the application shall be denied.~~

~~3. The Executive Officer will evaluate the validity of all inputs not directly related to energy consumption used to calculate the applicant's CI. If any of those inputs are found to be invalid, the application shall be denied.~~

~~(G) Once the Executive Officer has deemed that a Tier 1 application 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, those responses will be posted to the LCFS fuel pathway comments web site, and the pathway (as revised, if revisions were necessary) will be certified and posted to the LCFS fuel pathway certification web page. If the applicant's responses are deemed to have inadequately addressed the potential factual or methodological errors identified in the comments received, or if the applicant fails to~~

submit responses to those comments, the application will be denied.

(J) If no public comments are received, the application will be certified and moved to the LCFS fuel pathway certification web page.

(K) Fuel pathways that are certified and posted to the LCFS Fuel Pathway Certification web page will be accompanied by a certification statement, prepared by the Executive Officer, setting forth all limitations and operational conditions to which the new pathway will be subject.

(L) If the Executive Officer at any time determines that a certified fuel pathway does not meet the operational conditions specified in the certification statement issued by the Executive Officer as specified in subsection (K), above, the Executive Officer shall revoke or modify the certification as is necessary to assure that no fuel that does not meet all applicable operational conditions, including the specified fuel life cycle carbon intensity, is produced for sale in California under that pathway. The Executive Officer shall not revoke or modify a prior certification order without first affording the applicant an opportunity for a hearing in accordance with CCR, title 17, sections 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.

(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 ($gCO_2e/MJ$) |
|---|---|---|---|---|
| | Corn | Grid electricity, natural gas, and/or renewables | ETH100T | 75.97 |
| | Sorghum | Grid electricity, natural gas, and/or renewables | ETH101T | 83.49 |

| Fuel | Feedstock | Process Energy | FPC | CI ($gCO_2e/MJ$) |
|---|---|---|---|---|
| | 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 |
| | Any feedstock derived from animal fats | 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 |
| | Any feedstock derived from animal fats | 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 |
| 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 |
| | Centralized reforming of fossil L-CNG | | HYDN700T | 191.25 |
| | Centralized reforming of fossil LNG | | HYDN701T | 176.58 |

| Fuel | Feedstock | Process Energy | FPC | CI ($gCO_2e/MJ$) |
|---|---|---|---|---|
| | 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 submit operating records covering all prior periods of full commercial operation, provided those records cover at least one full calendar quarter. The following subsections govern the development, evaluation, and post-certification monitoring of such provisional pathways.

Following the provisional certification of a fuel pathway application, the applicants shall submit copies of receipts for all energy purchases each calendar quarter until the Executive Officer is in possession of receipts covering two full calendar years of commercial production. At any time during those two years, the Executive Officer may revise as appropriate the plant's actual operational CI based on those receipts. Based on timely reports, the applicant may generate provisional credits. Until the Executive Officer has adjusted the CI or informed the producer that the provisional CI has been successfully corroborated by operational records covering a full two years of commercial operation, the Executive Officer may adjust the number of credits or reverse any provisional credit in the producer's account without a hearing, notwithstanding the requirements of section 95495.

(A) If, after a plant has been in full commercial production for more than two years, the plant's operational CI is higher than the provisionally-certified CI, the Executive Officer will replace the certified CI with the operational CI in the LRT-CBTS system and adjust the producer's credit balance accordingly.

(B) If the plant's operational CI appears to be lower than the certified CI, the Executive Officer will take no action. The applicant may, however, petition the Executive Officer for a provisional CI reduction to reflect operational data. In support of such a petition, the applicant must submit a revised application packet that fully documents the requested reduction.

(e) *Evidence of Fuel Transport Mode.* A regulated party may not generate credits pursuant to section 95486 unless it has demonstrated to the Executive Officer that a fuel transport mode exists, for each of the transportation fuels for which it is responsible under the LCFS regulation, and that each fuel transport mode has been approved by the Executive Officer pursuant to this section. Transactions associated with fuels for which a fuel transport mode has not yet been approved must be reported using a fuel transport mode code PHY10 in the LRT-CBTS. Electricity used as a transportation fuel is exempt from this requirement. For purposes of this provision, "demonstrated" and "demonstration" 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 submit the demonstration of a fuel transport mode to the Executive Officer within 90 days of providing a fuel in California unless an initial demonstration of fuel transport mode was previously submitted and approved under the provisions of the previous LCFS regulation order. The Executive

Officer shall not approve a fuel transport mode demonstration unless it meets the following requirements:

(1) *Initial Demonstration of Delivery Methods.* The regulated party must initially demonstrate the delivery methods comprising the fuel transport mode for each of the regulated party's fuels. The demonstration must include documentation in sufficient detail for the Executive Officer to verify the existence of the fuel transport mode's delivery methods.

The documentation must include a map(s) that shows the truck/rail lines or routes, pipelines, and other delivery segments that, together, comprise the fuel transport mode. If more than one company is involved in the delivery, each segment on the map must be linked to a specific company that is expected to transport the fuel through each segment of the fuel transport mode. The regulated party must provide the contact information for each such company, including the contact name, mailing address, phone number, and company name.

(2) *Initial Demonstration of Fuel Introduced Into the Fuel Transport Mode.* For each transportation fuel for which LCFS credit is being claimed, the regulated party must show that a specific volume of that fuel was introduced into the fuel transport mode identified in subsection (1), above. The showing may include a written purchase contract or transfer document for the volume of fuel that was introduced or otherwise delivered into the fuel transport mode.

Initial demonstrations covering biomethane conveyed to California by pipeline for the purpose of earning credits under the LCFS shall include statements from the biomethane suppliers and marketers attesting to the fact that that biomethane is not being used to earn credits under any other state or federal program, with the sole exception of the federal Renewable Fuel Standard program (RFS2).

(3) *Initial Demonstration of Fuel Removed From the Fuel Transport Mode.* For each specific transportation fuel identified in subsection (2), above, the regulated party must show that the same volume fuel was removed from the fuel transport mode in California by the regulated party and provided for transportation use in California. The showing may include a written sales contract or transfer document for the volume of blendstock or alternative fuel that was removed from or otherwise extracted out of the fuel transport mode in California.

(4) *Subsequent Demonstration of Fuel Transport Mode.* Once the Executive Officer has approved the initial demonstrations specified in subsections (1) through (3) above, the regulated party does not need to resubmit the demonstrations for Executive Officer approval in any subsequent year,

unless there is a material change to any of the information submitted under subsections (1) through (3) involving a change in the fuel's basic mode of transport. For example, if an approved transport mode using rail transport is changed to add to or replace the rail with truck or ship transport, that change would be deemed a material change. In the case of biomethane, "material change" also means that the fuel is being claimed for credit under another state or federal program, other than the federal RFS2.

If there is a material change to an approved fuel transport mode, the regulated party must notify the Executive Officer in writing within 30 business days after the material change has occurred, and the previously-approved fuel transport mode shall become invalid 30 business days after the material change has occurred. A regulated party that wishes to generate credits after an approved fuel transport mode has become invalid must submit for Executive Officer approval a new initial demonstration, pursuant to subsections (1) through (3) above. Biomethane that is being claimed for credit under another state or federal program, other than the RFS2, may not seek a new fuel transport mode demonstration under the LCFS.

(5) *Submittal and Review of and Final Action on Submitted Demonstrations.*

(A) Once the Executive Officer has approved the fuel transport mode demonstration, the regulated party may generate credits based on timely reporting, provided that the requirements of section 95488(c) and (d) have also been met.

(B) After 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 (f) describes the credit calculation method and general requirements for generating credits from refinery investment projects. It incorporates Carbon Capture and Sequestration as eligible project for credit generation. Application contents, submittal and approval processes and record keeping requirements are also described in detail. We wish to solicit additional input from stakeholders in this area, per the workshop on 9/14/17.

95489 (g) describes the suggested changes to credit calculation methods and general requirements for generating credits from renewable hydrogen use in refineries, including details on application contents, submittal and approval process, and recordkeeping requirements.

## § 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~~ |

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|---|---|---|
| | ~~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~~ |

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|---|---|---|

~~* 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).~~

(a~~b~~) *Base Deficit Calculation for CARBOB or Diesel Fuel.* A ~~regulated party~~fuel reporting entity 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);

$CI^{XD}_{BaselineAve}$ is the average carbon-intensity value of CARBOB or diesel, in $gCO_2e/MJ$, that is derived from petroleum feedstock and is either produced in or imported into California during the baseline calendar year, 2010. For purposes of this provision, $CI^{XD}_{BaselineAve}$ for CARBOB ($XD$ = "CARBOB") and diesel fuel ($XD$ = "diesel") are the Baseline Average carbon intensity values for CARBOB and diesel (ULSD) set forth in Table ~~6~~7. 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 ~~$CI_{2015CrudeAve}$~~$CI_{2018CrudeAve}$,,the baseline is:

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

$$CI_{BaselineCrudeAve} = \frac{[11.98 \times V_{2016} + 11.98 \times V_{2017} + XX.XX \times V_{2018}]}{[V_{2016} + V_{2017} + V_{2018}]}$$

For comparison to ~~$CI_{2016CrudeAve}$~~$CI_{2019CrudeAve}$, the baseline is:

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

$$CI_{BaselineCrudeAve} = \frac{[11.98 \times V_{2017} + XX.XX \times V_{2018} + XX.XX \times V_{2019}]}{[V_{2017} + V_{2018} + V_{2019}]}$$

For comparison to ~~$CI_{2017CrudeAve}$~~$CI_{2020CrudeAve}$and subsequent years, the baseline is

$$\sout{CI_{BaselineCrudeAve} = 11.98}$$

$$CI_{BaselineCrudeAve} = XX.XX$$

$CI_{20XXCrudeAve}$ 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~~2018 is:

$$\sout{CI_{2015CrudeAve} = \frac{[CI_{2013} \times V_{2013} + CI_{2014} \times V_{2014} + CI_{2015} \times V_{2015}]}{[V_{2013} + V_{2014} + V_{2015}]}}$$

$$CI_{2018CrudeAve} = \frac{[CI_{2016} \times V_{2016} + CI_{2017} \times V_{2017} + CI_{2018} \times V_{2018}]}{[V_{2016} + V_{2017} + V_{2018}]}$$

$V_{20XX}$ 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(bc). The Annual Crude Average carbon intensity value for 20136 is specified in Table 98.

$E^{XD}$ 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 43, either produced in California or imported into California during a specific calendar year and sold, supplied, or offered for sale in California.

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

(bc) *Addition of Incremental Deficits that Result from Increases in the Carbon Intensity of Crude Oil to a ~~Regulated party's~~ Fuel Reporting Entity'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~~ fuel reporting entity'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~~ fuel reporting entity will be based upon the amount of CARBOB and diesel fuel supplied by the ~~regulated party~~ fuel reporting entity 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~~ fuel reporting entities 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 9~~8~~. For crude names not listed, the default carbon intensity value from Table 9~~8~~ will be used until the crude name and carbon intensity value is added to Table 9~~8~~ as described in section 95489(b~~c~~)(3).

(B) Within 15 days of receiving the Annual Compliance reports and positive or qualified positive MCON verification reports per section 95500, 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 9~~8~~, and updates to all carbon intensity values listed in Table 9~~8~~ will be considered on a three-year cycle through proposed amendments of the Low Carbon Fuel Standard regulation.

**Table 9. 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 2018 and subsequent years | 12.31 |
| | California Baseline Crude Average applicable to crudes supplied in 2016 and 2017 | 11.98 |
| Annual Crude Average | Volume-weighted California average CI for crudes supplied during 2016 | 12.14 |
| Algeria | Saharan | 14.78 |
| Angola | Cabinda | 9.00 |
| | Clov | 7.31 |

| | | |
|---|---|---|
| | Dalia | 8.92 |
| | Gimboa | 8.86 |
| | Girassol | 10.01 |
| | Greater Plutonio | 8.72 |
| | Hungo | 8.20 |
| | Kissanje | 8.66 |
| | Mondo | 8.98 |
| | Nemba | 9.08 |
| | Pazflor | 8.02 |
| | Sangos | 7.06 |
| Argentina | Canadon Seco | 10.16 |
| | Escalante | 10.15 |
| | Hydra | 7.77 |
| | Medanito | 10.78 |
| Australia | Enfield | 7.64 |
| | Pyrenees | 8.28 |
| | Stybarrow | 7.84 |
| | Van Gogh | 8.51 |
| | Vincent | 6.84 |
| Azerbaijan | Azeri | 6.45 |
| Belize | Belize Light | 9.70 |
| Brazil | Albacora Leste | 5.99 |
| | Bijupira-Salema | 7.18 |
| | Frade | 5.63 |
| | Iracema | 5.54 |
| | Jubarte | 6.28 |
| | Lula | 6.24 |
| | Marlim | 6.76 |
| | Marlim Sul | 7.78 |
| | Ostra | 5.65 |
| | Papa Terra | 4.29 |
| | Peregrino | 4.17 |
| | Polvo | 5.61 |
| | Roncador | 6.77 |
| | Roncador Heavy | 6.46 |
| | Sapinhoa | 6.00 |
| | Tubarao Azul | 5.46 |
| | Tubarao Martelo | 5.37 |
| Cameroon | Lokele | 19.28 |
| Canada | Access Western Blend | 15.59 |
| | Albian Heavy Synthetic (all grades) | 22.83 |
| | BC Light | 8.11 |
| | Bonnie Glen | 8.11 |
| | Borealis Heavy Blend | 15.92 |
| | Boundary Lake | 8.11 |
| | Bow River | 9.54 |
| | Cardium | 8.11 |
| | Christina Dilbit Blend | 12.76 |
| | Christina Synbit | 20.30 |

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|---|---|---|
| | Cold Lake | 16.94 |
| | Conventional Heavy | 9.54 |
| | CNRL Light Sweet Synthetic | 9.54 |
| | Federated | 8.11 |
| | Fosterton | 9.54 |
| | Gibson Light Sweet | 8.11 |
| | Halkirk | 8.11 |
| | Hardisty Light | 8.11 |
| | Hardisty Synthetic | 35.96 |
| | Husky Synthetic | 32.25 |
| | Joarcam | 8.11 |
| | Kearl Lake | 13.32 |
| | Kerrobert Sweet | 8.11 |
| | Koch Alberta | 8.11 |
| | Light Sour Blend | 8.11 |
| | Light Sweet | 8.11 |
| | Lloyd Blend | 9.54 |
| | Lloyd Kerrobert | 9.54 |
| | Lloydminster | 9.54 |
| | Long Lake Heavy | 30.60 |
| | Long Lake Light Synthetic | 39.67 |
| | Mackay Heavy Blend | 22.49 |
| | Medium Gibson Sour | 8.11 |
| | Medium Sour Blend | 8.11 |
| | Midale | 8.11 |
| | Mixed Sour Blend | 8.11 |
| | Mixed Sweet | 8.11 |
| | Moose Jaw Tops | 8.11 |
| | Peace | 8.11 |
| | Peace Pipe Sour | 8.11 |
| | Peace River Heavy | 19.08 |
| | Peace River Sour | 8.11 |
| | Pembina | 8.11 |
| | Pembina Light Sour | 8.11 |
| | Premium Albian Synthetic | 29.26 |
| | Premium Conventional Heavy | 9.54 |
| | Premium Synthetic | 25.96 |
| | Rainbow | 8.11 |
| | Rangeland Sweet | 8.11 |
| | Redwater | 8.11 |
| | Seal Heavy | 9.54 |
| | Shell Synthetic (all grades) | 28.73 |
| | Smiley-Coleville | 9.54 |
| | Sour High Edmonton | 8.11 |
| | Sour Light Edmonton | 8.11 |
| | Statoil Cheecham Dilbit | 13.78 |
| | Statoil Cheecham Synbit | 19.64 |
| | Suncor Synthetic (all grades) | 25.52 |
| | Surmont Heavy Blend | 25.85 |

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|---|---|---|
| | Synbit Blend | 23.37 |
| | Syncrude Synthetic (all grades) | 29.56 |
| | Synthetic Sweet Blend | 27.12 |
| | Tundra Sweet | 8.11 |
| | Wabasca | 6.91 |
| | Western Canadian Blend | 9.54 |
| | Western Canadian Select | 19.62 |
| Chad | Doba | 11.22 |
| Colombia | Acordionero | 6.96 |
| | Cano Limon | 9.36 |
| | Castilla | 10.32 |
| | Cusiana | 10.01 |
| | Magdalena | 22.66 |
| | Puerto Bahia | |
| | Rubiales | 10.03 |
| | South Blend | 9.25 |
| | Vasconia | 9.60 |
| Congo | Azurite | 10.25 |
| | Djeno | 10.73 |
| Ecuador | Napo | 8.87 |
| | Oriente | 10.06 |
| Equatorial Guinea | Ceiba | 7.85 |
| | Zafiro | 20.63 |
| Ghana | Ten Blend | 8.08 |
| Iran | Dorood | 12.65 |
| | Forozan | 22.01 |
| | Iran Heavy | 13.25 |
| | Iran Light | 14.35 |
| | Lavan | 11.11 |
| | Nowruz-Soroosh | 10.53 |
| | Sirri | 10.15 |
| Iraq | Basra Light | 13.47 |
| | Basra Heavy | 10.25 |
| Kuwait | Kuwait | 10.92 |
| Libya | Amna | 11.41 |
| Malaysia | Tapis | 8.69 |
| Mauritania | Chinguetti | 7.98 |
| Mexico | Isthmus | 10.17 |
| | Isthmus Topped | 13.17 |
| | Maya | 6.76 |
| Neutral Zone | Eocene | 8.24 |
| | Khafji | 8.17 |
| | Ratawi | 9.72 |
| Nigeria | Agbami | |
| | Amenam | |
| | Antan | |
| | Bonga | |
| | Bonny | |
| | Brass | |

| | | |
|---|---|---|
| | EA | |
| | Erha | |
| | Escravos | |
| | Forcados | |
| | Okono | |
| | OKWB | |
| | Pennington | |
| | Qua Iboe | |
| | Yoho | |
| Oman | Oman | 12.74 |
| Peru | Loreto | 8.35 |
| | Mayna | 9.78 |
| | Pirana | |
| Russia | ESPO | 13.31 |
| | M100 | 19.09 |
| | Sokol | 8.77 |
| | Vityaz | 11.10 |
| Saudi Arabia | Arab Extra Light | 9.56 |
| | Arab Light | 9.40 |
| | Arab Medium | 8.89 |
| | Arab Heavy | 8.08 |
| Thailand | Bualuang | 3.61 |
| Trinidad | Calypso | 5.49 |
| | Galeota | 10.83 |
| UAE | Murban | 10.11 |
| | Upper Zakum | 8.02 |
| Venezuela | Bachaquero | 27.21 |
| | Boscan | 10.82 |
| | Hamaca | 37.09 |
| | Hamaca DCO | 7.55 |
| | Laguna | 27.21 |
| | Mesa 30 | 9.55 |
| | Petrozuata (all synthetic grades) | 19.33 |
| | Zuata (all synthetic grades) | 19.28 |
| US Alaska | Alaska North Slope | 15.92 |
| US Colorado | Niobrara | 6.81 |
| US Gulf of Mexico | Mars | 6.62 |
| US Louisiana | GCA | 8.72 |
| US New Mexico | Four Corners | 11.16 |
| | New Mexico Intermediate | 11.16 |
| | New Mexico Sour | 11.16 |
| | New Mexican Sweet | 11.16 |
| US North Dakota | Bakken | 9.73 |
| | North Dakota Sweet | 9.73 |
| | Williston Basin Sweet | 9.73 |
| US Oklahoma | Oklahoma Sour | 11.98 |
| | Oklahoma Sweet | 11.98 |
| US Texas | Eagle Ford Shale | 11.98 |
| | East Texas | 11.98 |

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|---|---|---|
| | North Texas Sweet | 11.98 |
| | South Texas Sweet | 11.98 |
| | West Texas Intermediate | 11.98 |
| | West Texas Sour | 11.98 |
| US Utah | Covenant | 4.44 |
| | Grand Cane | 6.92 |
| | Utah Black Wax | 5.85 |
| | Utah Sweet | 6.92 |
| US Wyoming | Wyoming Sweet | 10.98 |
| US California Fields | Aliso Canyon | 4.94 |
| | Ant Hill | 20.99 |
| | Antelope Hills | 2.85 |
| | Antelope Hills, North | 26.93 |
| | Arroyo Grande | 33.91 |
| | Asphalto | 8.01 |
| | Bandini | 3.09 |
| | Bardsdale | 3.47 |
| | Barham Ranch | 4.15 |
| | Beer Nose | 3.98 |
| | Belgian Anticline | 5.01 |
| | Bellevue | 5.95 |
| | Bellevue, West | 6.60 |
| | Belmont, Offshore | 5.12 |
| | Belridge, North | 4.55 |
| | Belridge, South | 18.93 |
| | Beverly Hills | 5.41 |
| | Big Mountain | 4.65 |
| | Blackwells Corner | 3.08 |
| | Brea-Olinda | 3.59 |
| | Buena Vista | 7.44 |
| | Burrel | 29.61 |
| | Cabrillo | 4.14 |
| | Canal | 4.40 |
| | Canfield Ranch | 4.53 |
| | Carneros Creek | 4.06 |
| | Cascade | 3.00 |
| | Casmalia | 10.29 |
| | Castaic Hills | 2.68 |
| | Cat Canyon | 8.54 |
| | Cheviot Hills | 3.49 |
| | Chico-Martinez | 52.07 |
| | Cienaga Canyon | 5.78 |
| | Coalinga | 28.35 |
| | Coles Levee, N | 4.09 |
| | Coles Levee, S | 5.87 |
| | Comanche Point | 5.06 |

| | | |
|---|---|---|
| | Coyote, East | 5.97 |
| | Cuyama, South | 14.75 |
| | Cymric | 18.98 |
| | Deer Creek | 11.60 |
| | Del Valle | 5.78 |
| | Devils Den | 7.51 |
| | Edison | 15.50 |
| | El Segundo | 4.39 |
| | Elk Hills | 8.02 |
| | Elwood, S., Offshore | 3.52 |
| | Fruitvale | 3.75 |
| | Greeley | 7.91 |
| | Hasley Canyon | 2.25 |
| | Helm | 3.99 |
| | Holser | 3.80 |
| | Honor Rancho | 3.43 |
| | Huntington Beach | 6.63 |
| | Hyperion | 1.91 |
| | Inglewood | 10.11 |
| | Jacalitos | 2.72 |
| | Jasmin | 16.74 |
| | Kern Front | 40.45 |
| | Kern River | 16.91 |
| | Kettleman Middle Dome | 3.93 |
| | Kettleman North Dome | 3.42 |
| | Landslide | 12.54 |
| | Las Cienegas | 4.96 |
| | Livermore | 2.66 |
| | Lompoc | 28.66 |
| | Long Beach | 5.48 |
| | Long Beach Airport | 4.94 |
| | Los Angeles Downtown | 5.89 |
| | Los Angeles, East | 14.84 |
| | Lost Hills | 14.39 |
| | Lost Hills, Northwest | 5.36 |
| | Lynch Canyon | 26.33 |
| | Mahala | 4.99 |
| | McCool Ranch | 9.67 |
| | McDonald Anticline | 4.33 |
| | McKittrick | 27.67 |
| | Midway-Sunset | 32.54 |
| | Montalvo, West | 2.65 |
| | Montebello | 17.10 |
| | Monument Junction | 4.95 |
| | Mount Poso | 5.05 |

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|---|---|---|
| | Mountain View | 3.97 |
| | Newhall-Potrero | 3.66 |
| | Newport, West | 4.56 |
| | Oak Canyon | 4.04 |
| | Oak Park | 3.01 |
| | Oakridge | 3.46 |
| | Oat Mountain | 3.17 |
| | Ojai | 4.94 |
| | Olive | 1.82 |
| | Orcutt | 11.64 |
| | Oxnard | 5.73 |
| | Paloma | 4.88 |
| | Placerita | 41.07 |
| | Playa Del Rey | 6.87 |
| | Pleito | 2.09 |
| | Poso Creek | 29.85 |
| | Pyramid Hills | 3.37 |
| | Railroad Gap | 7.08 |
| | Raisin City | 9.16 |
| | Ramona | 4.47 |
| | Richfield | 4.77 |
| | Rincon | 4.88 |
| | Rio Bravo | 6.98 |
| | Rio Viejo | 2.74 |
| | Riverdale | 3.80 |
| | Rose | 2.91 |
| | Rosecrans | 5.76 |
| | Rosecrans, South | 3.54 |
| | Rosedale | 2.35 |
| | Rosedale Ranch | 8.34 |
| | Round Mountain | 31.00 |
| | Russell Ranch | 8.63 |
| | Salt Lake | 3.18 |
| | Salt Lake, South | 6.34 |
| | San Ardo | 30.45 |
| | San Miguelito | 5.25 |
| | San Vicente | 3.22 |
| | Sansinena | 3.21 |
| | Santa Clara Avenue | 3.53 |
| | Santa Fe Springs | 12.61 |
| | Santa Maria Valley | 4.80 |
| | Santa Susana | 5.29 |
| | Sargent | 4.00 |
| | Saticoy | 3.68 |
| | Sawtelle | 2.56 |

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|---|---|---|
| | Seal Beach | 5.19 |
| | Semitropic | 4.30 |
| | Sespe | 3.98 |
| | Shafter, North | 3.32 |
| | Shiells Canyon | 5.07 |
| | South Mountain | 3.58 |
| | Stockdale | 2.18 |
| | Tapia | 6.96 |
| | Tapo Canyon, South | 3.08 |
| | Tejon | 13.86 |
| | Tejon Hills | 9.42 |
| | Tejon, North | 5.63 |
| | Temescal | 3.40 |
| | Ten Section | 7.51 |
| | Timber Canyon | 4.74 |
| | Torrance | 4.00 |
| | Torrey Canyon | 3.52 |
| | Union Avenue | 5.58 |
| | Ventura | 4.54 |
| | Wayside Canyon | 2.36 |
| | West Mountain | 3.53 |
| | Wheeler Ridge | 2.80 |
| | White Wolf | 1.92 |
| | Whittier | 3.71 |
| | Wilmington | 8.35 |
| | Yowlumne | 13.94 |
| | Zaca | 9.61 |
| US Federal OCS | Beta | 1.59 |
| | Carpinteria | 3.28 |
| | Dos Cuadras | 4.57 |
| | Hondo | 5.93 |
| | Hueneme | 4.67 |
| | Pescado | 7.07 |
| | Point Arguello | 14.09 |
| | Point Pedernales | 8.29 |
| | Sacate | 4.77 |
| | Santa Clara | 2.46 |
| | Sockey | 13.11 |
| Default | | 12.31 |

* Based on production and transport of the crude oil supplied to the indicated California refinery(ies) during the baseline calendar year, 2010

(cd) *Credits for Producing Crudes using Innovative Methods.* ~~A crude oil producer or refinery receiving the crude may generate credits~~ Credits may be generated 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~~ sequestration (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~~ing~~ credit under the LCFS regulation. Projects that utilize carbon capture and sequestration are subject to the provisions of section 95490. ~~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)~~ project operator must initiate review of the opt-in project using 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 applicant~~s~~ project operator 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~~ project operator to receive credits for an approved innovative method. The crude oil producer, through a written agreement, may elect to transfer the right to opt-in for credit generation to the third-party co-applicant. If neither the crude oil producer nor the third-party co-applicant using an approved innovative method ~~does not~~ registers as an opt-in ~~regulated party~~ project operator, 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):~~

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

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

Where avoided emissions are correlated with the steam quality as tabulated below:

| Steam quality | Avoided emissions ($gCO_2$e/bbl solar steam) |
|---|---|
| 95% and above | 32,069 |
| 85% to <95% | 30,191 |
| 75% to <85% | 28,312 |
| 65% to <75% | 26,433 |
| 55% to <65% | 24,554 |

~~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(c~~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;

$\Delta CI_{Innov}$ 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.

(G) Solar and wind electricity and solar steam or heat generation that generates LCFS credit may not also claim renewable energy certificates or other renewable attributes recognized or credited by any other jurisdiction or regulatory program.

(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 or third-party joint applicant must register under section 95483.1 as an opt-in ~~regulated party~~ project operator to receive LCFS credit for an innovative method, and that if the crude oil producer or third-party joint applicant does not register as an opt-in ~~regulated party~~ project operator, 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(c~~d~~)(2)(B)2.; and
4. A preliminary estimate of the potential innovative method credit, calculated as required in section 95489(c~~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(c~~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, third-party joint applicant, 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(c~~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(c~~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 and Reporting.* 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 report quarterly and maintain records for at least 10~~five~~ years showing:

(A) The ~~quarterly~~ volume (barrels) of crude oil produced using the approved innovative method and the crude name(s) under which it is marketed.

(B) 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.

(C) Documentation showing that the innovative crude was supplied to a California refinery(ies) and the volume (barrels) of innovative crude supplied to each California refinery.

(D) For solar or wind electricity projects, the following additional recordkeeping and reporting will be required:

1. Metered data on solar or wind electricity consumed for crude oil production at the oil field during the quarter (kWh);

2. Metered data on total electricity consumed for crude oil production at the oil field during the quarter (kWh); and

3. An attestation letter stating that all solar or wind electricity was supplied directly for crude oil production at the oil field and that the solar or wind electricity reported for generating LCFS credit did not produce renewable energy certificates or other renewable attributes recognized or credited by any other jurisdiction or regulatory program.

(E) For solar steam projects, the following additional recordkeeping and reporting will be required:

1. Metered data on solar steam consumed for crude oil production at the oil field during the quarter (barrels cold water equivalent);

2. Metered data on total steam consumed for crude oil production at the oil field during the quarter (barrels cold water equivalent);

3. Volume-weighted average steam quality for solar steam consumed for crude oil production at the oil field during the quarter; and

4. An attestation letter stating that all solar steam was supplied directly for crude oil production at the oil field and that the solar steam reported for generating LCFS credit did not produce renewable energy certificates or other renewable attributes recognized or credited by any other jurisdiction or regulatory program.

(~~B~~F) Any additional records that the Executive Officer requires to be kept in pursuant to section 95489(c~~d~~)(3)(D), and records that demonstrate compliance with all special limitations and operating conditions specified pursuant to section 95489(c~~d~~)(3)(D).

These records shall be submitted to the Executive Officer during the quarterly reporting period specified in section 95491(a)(1).~~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*. Credits for producing crude oil using innovative methods may be generated quarterly or annually, at the discretion of the credit generating party. Within 30 days of receiving ~~quarterly~~ reports from California refineries detailing crude names and volumes supplied to the refineries during the applicable~~previous~~ crediting period~~calendar quarter,~~ ~~and~~ any records requested of the applicant under section 95489(c~~d~~)(4), and a positive or qualified positive verification of reported data per section 95500, the Executive Officer will determine the number of credits to be issued to the crude oil producer, third-party co-applicant, or purchasing refinery for the innovative method.

(e) *Low-Complexity/Low-Energy-Use Refinery Credit.* A refinery may receive credit for being a low-complexity- and low-energy-use refinery.

(1) To be eligible for the credit 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~~10;

$Capacity_i$ 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~~10. 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~~ project operator 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~~amount of CARBOB and diesel produced from crude oil;

(B) The ~~volume~~amount of CARBOB and diesel produced from transmix;

(C) The ~~volume~~amount of CARBOB and diesel produced from Petroleum Intermediate feedstocks; and

(D) The ~~volume~~amount 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 after MRR verification of refinery facility emissions is complete.

(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 ~~34~~ 1, 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:~~

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

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

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

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

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

~~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 $CI^{LC-LE}_{20XXCrudeAve}$ will be calculated using data for crude oil supplied to the low-complexity/low-energy-use refinery during the most recent three calendar years;

$CI^{LC-LE}_{BaselineCrudeAve}$ 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~~generated pursuant to section 95489(f) may not be sold or transferred to any other party.

(G) Credits shall be pro-rated for years where the refinery, or affected or potentially affected refinery units were non-operational. This pro-rating shall consider the calendar days of operation vs non-operation.

~~(C)~~(H) Credits generated pursuant to section 95489(f) are subject to limitations set forth in section 95485(d).

(I) Projects that utilize carbon capture and sequestration are subject to the provisions of section 95490.

(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 $CO_2$e by using 0.431 metric tons $CO_2$e/MWh;

$thermal$ is imported thermal energy minus exported thermal energy per year converted to metric tons $CO_2$e by using 0.0663 tons $CO_2$e/MMBtu;

$hydrogen$ is purchased hydrogen multiplied by 10.8 metric tons/ metric 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~~4 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:

$\Delta CI_{RIC}^{XD}$ 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;

$\Delta CI_{RIC}^{XD}$ 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~~4 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, including any affected or potentially affected processing units and a whole refinery diagram if requested; 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 calendar 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 business 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 or wholly 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 or wholly 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~~

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

(A) For CARBOB or diesel fuel that is partially or wholly derived from renewable hydrogen produced from renewable natural gas (RNG) and which displaces fossil natural gas in a steam methane reforming unit, the calculation of credits shall be as follows:

$$Credits_{RIC}^{H} = (CI_{NG} - CI_{RNG}) \times E_{RNG} \times C \times \frac{Volume^{XD}}{Volume^{Total}}$$

where:

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

$CI_{NG}$ is the carbon intensity of North American CNG at refinery gate with a value of 78.37 $gCO_2e/MJ$. This carbon intensity score will be subject to updates;

$CI_{RNG}$ is the carbon intensity of the renewable natural gas, in $gCO_2e/MJ$, at refinery gate and must be determined using the CA-GREET3.0 model unless the Executive Officer has approved the use of a method that is at least equivalent to the calculation methodology used by CA GREET. The process for obtaining $CI_{RNG}$ will be similar to regular fuel pathway applications;

$E_{RNG}$ is the amount of RNG, in MJ, delivered to a refinery;

$Volume^{XD}$ is the volume of CARBOB and diesel in gallons per year sold, supplied, or offered for sale in California by the refinery involved in the *Renewable Hydrogen Refinery Credit Pilot Program*;

$Volume^{Total}$ is the total volume of CARBOB and diesel in gallons per year produced; and

$$C = 1.0 \times 10^{-6} \frac{MT}{gCO2e}$$

(B) For CARBOB or diesel fuel that is partially or wholly derived from renewable hydrogen produced from other production processes, such as electrolysis using renewable electricity and syngas from biomass gasification, the calculation of credits shall be as follows:

$$Credits_{RIC}^{H} = (CI_{Fossil}^{H} - CI_{Renewable}^{H}) \times D_{Renewable}^{H} \times M_{Renewable}^{H} \times C \times \frac{Volume^{XD}}{Volume^{Total}}$$

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 the carbon intensity of fossil hydrogen in $gCO_2e$/MJ delivered or produced at the refinery, as determined using the CA-GREET 2.0 Tier 2 model or similar models approved by the Executive Officer. The process for obtaining $CI_{Fossil}^{H}$ must comply with the requirements in section 95488;

$CI_{Renewable}^{H}$ is the carbon intensity of renewable hydrogen in $gCO_2e$/MJ delivered or produced at the refinery, as determined using the CA-GREET 2.0 Tier 2 model. The process for obtaining $CI_{Renewable}^{H}$ must comply with the requirements in section 95488;

$M_{Renewable}^{H}$ is the amount of renewable hydrogen in kg;

$D_{Renewable}^{H}$ is the energy density of hydrogen in MJ/kg from Table 4;

$Volume^{XD}$ is the volume of CARBOB and diesel in gallons per year sold, supplied, or offered for sale in California by the refinery involved in the *Renewable Hydrogen Refinery Credit Pilot Program*;

$Volume^{Total}$ is the total volume of CARBOB and diesel in gallons per year produced; and

$$C = 1.0 \times 10^{-6} \frac{MT}{gCO2e}$$

(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.]~~ Provisions for Fuels Produced Using Carbon Capture and Sequestration.

(a) *Geologic Sequestration.* Projects that receive LCFS credits for CCS and geologic sequestration are subject to the provisions of this section. A CCS project credit must result from the use of the "Air Resources Board Accounting and Permanence Protocol for Carbon Capture and Geologic Sequestration under the LCFS (2017)", which is referred to as the "CCS Protocol" hereafter.

(1) *Eligibility.* The following entities are eligible to receive CCS credits.

(A) Alternative fuel producers, refineries and oil and gas producers that capture $CO_2$ on-site and send it for $CO_2$ sequestration either on-site or off-site.

(B) An entity that employs direct air capture to remove $CO_2$ from the atmosphere followed by its subsequent geologic sequestration. If $CO_2$ derived from direct air capture is converted to fuels, it shall not be eligible for project-based CCS credits. However, applicants may apply for fuel pathway certification using the Method 2B pathway application as described in section 95488.

(2) *General Requirements.*

(A) Eligible entities described in subsection 95490 (a)(1)(A) shall deliver alternative fuels, refined petroleum fuels or crude oil/natural gas to California. Credits shall be prorated based on the volumes delivered to California.

(B) CCS credits generated by crude oil and gas producers shall be claimed under the Innovative Crude Provision (95489(d)).

(C) CCS credits generated by refiners shall be claimed under the Refinery Investment Credit Pilot Program (95489(f)).

(D) CCS credits generated by alternative fuel producers can be used to adjust the carbon intensities of the associated fuel pathways.

(F) Credit determination for any project that utilizes CCS shall be performed in accordance with the accounting protocol of the CCS protocol.

(E) Alternative fuel pathways that are certified under section 95488 and utilize CCS must comply with the CCS protocol.

(F) Innovative Crude projects that are credited under section 95489(d) and utilize CCS must comply with the CCS protocol.

(G) Refinery Investment projects that are credited under section 95489(f) and utilize CCS must comply with the CCS protocol.

(H) In order for a project to be considered to have complied with the CCS protocol, that project must be issued an executive order in accordance with the permanence provisions of the CCS protocol.

(I) Projects utilizing CCS must undergo verification under section 95500 in order to receive credits.

(3) *Application Contents and Submittal*. Unless otherwise noted, an application for CCS credits shall comply with the following requirements:

(A) An application must be filed jointly by an entity that capture $CO_2$ and an entity that sequesters unless the same entity is responsible for $CO_2$ capture and sequestration.

(B) An application must contain the following materials:

1. A complete description of the CCS project and how GHG 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 CCS credit;

3. 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;

4. 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;

5. Receipts/invoices for energy use and chemicals;

6. An estimate of the CCS credit, calculated in accordance with the Accounting Protocol including descriptions and copies of production and operational data or other technical; and documentation utilized in support of the calculation. The application must contain process-specific data showing that the reductions are part of the CCS project, and

7. Executive orders issued pursuant to the Permanence Protocol of the CCS protocol, certifying the sequestration site as capable of permanently storing $CO_2$ and authorizing operation and credit generation.

(C) An application shall include a list of references covering all information sources used in the calculation of the CCS 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.

(D) 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 CCS project greenhouse gas emissions reductions. 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.

(E) 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 the applicant claims that information it submits is confidential, it must also provide contact information required in California Code of Regulations, title 17, section 91011.

(G) An applicant that submits any information or documentation in support of a proposed CCS project 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.

(H) An application, supporting documents, and all other relevant data or calculation or other documentation, except for the transmittal letter

described in section 95490(a)(3)(D), 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 CCS project can generate credits under the LCFS regulation.

(A) 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:

1. The application is complete, or

2. The application is incomplete, in which case the Executive Officer will identify which requirements have not been met. The applicant may submit additional information to correct deficiencies identified by the Executive Officer.

(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 business 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 95490(a)(2), the Executive Officer will take final action to approve the CCS 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 95490(a)(2), the application will not be approved, and the applicant will be notified in writing, and the basis for the disapproval shall be identified.

(5) *Reporting Sequestered $CO_2$*. Each CCS project must submit to the Executive Officer the annual sequestered $CO_2$ every year.

(6) *Recordkeeping*. Each applicant that receives approval as a CCS credit generator must maintain records for the CCS project. For such a project, the applicant must maintain records for at least five years. Records that are relevant to the verification of the permanence of sequestered $CO_2$ are required to be kept for longer periods in the CCS protocol. At a minimum, the following records must be kept:

(A) The quarterly volume of alternative fuel, petroleum fuel, crude oil/natural gas produced and delivered to California.

(B) Energy use and chemical use data for the carbon capture facility and $CO_2$ injection facility.

(C) The Accounting Protocol and Permanence Protocol documents.

(D) Any additional records that the Executive Officer requires to be kept in pursuant to section 95490(a)(4)(C), and records that demonstrate compliance with all special limitations and operating conditions specified pursuant to section 95490(a)(4)(C).

(b) *Direct Air Capture Crediting Provision.* Projects that capture $CO_2$ directly from the air can receive credits for sequestering those emissions in a geologic reservoir.

(1) *General Requirements.*

(A) The application for a Direct Air Capture credit must be approved pursuant to this section before the project can receive credit.

(B) Direct Air Capture projects that utilize geological sequestration must comply with the CCS protocol to be credited.

(2) *Credit Calculation.*

(A) Credit will be generated after verification of facility emissions pursuant to section 95500.

(B) Credits under this provision must be calculated using the methodology outlined in the accounting protocol of the CCS protocol.

(3) *Application Contents and Submittal*. Unless otherwise noted, an application for CCS credits must comply with the following requirements:

(A) An application must be filed jointly by an entity that capture $CO_2$ and an entity that sequesters unless the same entity is responsible for $CO_2$ capture and sequestration.

(B) An application must contain the following materials:

1. A complete description of the CCS project and how GHG 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 CCS credit;

3. 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;

4. 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;

5. Receipts/invoices for energy use and chemicals;

6. An estimate of the CCS credit, calculated in accordance with the Accounting Protocol including descriptions and copies of production and operational data or other technical; and documentation utilized in support of the calculation. The application must contain process-specific data showing that the reductions are part of the CCS project, and

7. Executive orders issued pursuant to the Permanence Protocol of the CCS protocol, certifying the sequestration site as capable of permanently storing $CO_2$ and authorizing operation and credit generation.

(C) An application shall include a list of references covering all information sources used in the calculation of the CCS 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.

(D) 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 CCS project greenhouse gas emissions reductions. 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.

(E) 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 the applicant claims that information it submits is confidential, it must also provide contact information required in California Code of Regulations, title 17, section 91011.

(G) An applicant that submits any information or documentation in support of a proposed CCS project 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.

(H) An application, supporting documents, and all other relevant data or calculation or other documentation, except for the transmittal letter described above in section 95490(b)(3)(D), 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 CCS project can generate credits under the LCFS regulation.

(A) 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:

1. The application is complete, or
2. The application is incomplete, in which case the Executive Officer will identify which requirements have not been met. The applicant may submit additional information to correct deficiencies identified by the Executive Officer.

(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 business 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 95490(b)(1), the Executive Officer will take final action to approve the CCS 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 95490(b)(1), the application will not be approved, and the applicant will be notified in writing, and the basis for the disapproval shall be identified.

(5) *Recordkeeping.* For each approved Direct Air Capture project the facility must compile and retain records pursuant to sections 95491(b) and 95490 (a)(6) showing compliance with all limitation and recordkeeping requirements.

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).

This section is updated to clarify the requirements for quarterly and annual reporting in the LRT-CBTS for each type of transportation fuel.

## § 95491. Fuel Transactions and Compliance Reporting ~~and Recordkeeping.~~

A ~~reporting party~~ fuel reporting entity, as defined in section 95481 and designated in section 95483 and 95483.1, must submit to the Executive Officer quarterly ~~progress~~ fuel transactions reports and annual compliance reports, as specified in this section.

~~(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. 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.~~

~~(2)~~(a) *Online Reporting.* The annual compliance and quarterly ~~progress~~ fuel transactions 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~~ fuel reporting entity must first register in the LRT-CBTS pursuant to section 95483.~~2~~4.

The ~~reporting party~~ fuel reporting entity is solely responsible for ensuring that the Executive Officer receives its quarterly ~~progress~~ fuel transactions reports and annual compliance reports by the ~~dates~~ deadlines 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 reports 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.

(b) *Reporting Frequency and Deadlines*.

(1) *Quarterly Fuel Transactions Data:* The data for the quarterly fuel transactions report for each fuel type must be uploaded in the LRT-CBTS within the first 45 days after the end of the quarter. During the subsequent 45 days, fuel reporting entities shall use the reconciliation tools provided in the LRT-CBTS and in conjunction with business partners to complete any necessary report corrections, if applicable.

(2) *Quarterly Fuel Transactions Reports.* Unless expressly provided elsewhere in this subarticle, quarterly fuel transactions reports must be submitted in LRT-CBTS 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 of the prior calendar year covering October through December.

(2) *Annual Compliance Reports.* An annual compliance report for the prior calendar year must be submitted in LRT-CBTS by April 30th of each year.

(c)~~(3)~~ *General ~~and Specific~~ Reporting Requirements for Quarterly Fuel Transactions Reports*. For each of its transportation fuels, a ~~reporting party~~ fuel reporting entity must submit a quarterly fuel transactions report that contains the information specified below and summarized in Table 11~~ and meets the additional specific requirements set forth below~~:

(1)~~(A)~~ All applicable transaction types listed for each fuel type below and defined in section 95481 must be included in each quarterly fuel transactions report.

(2) Parameters that must be reported are as follows: Organization FEIN, Reporting Period (year and quarter), FPC, Fuel Amount, Transaction Type, Transaction Date, Business Partner (if applicable), ~~FTM,~~ Aggregated Transaction Indicator, ~~and~~ Fuel Application, ~~and~~ Production Company ID and Facility ID (if applicable).

~~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.~~

(d) *Specific Reporting Requirements for Quarterly Fuel Transactions Reports*. In addition to all requirements specified in section 95491(c), for each of its

transportation fuels, a ~~reporting party~~ fuel reporting entity must submit a quarterly fuel transactions report that contains the information specified below and summarized in Table 11:

(1) *Specific Quarterly Reporting Parameters for Liquid Alternative Fuels, Gasoline, Diesel and Diesel Fuel Blends.*

(A) A fuel transaction must be reported in LRT-CBTS for each transaction type. The applicable transactions, defined in section 95481, are as follows: Production in ~~CA~~ California, Production for Import, Import, Purchased with Obligation, Purchased with Obligation, Purchased without Obligation, Sold with Obligation, Sold without Obligation, Export, Loss in Inventory, Gain in Inventory, and Not Used for Transportation. The transaction type "Production for Import" is to be reported by out-of-state producers who choose to be the first fuel reporting entity ~~claim the initial LCFS obligation~~ for fuel imported into California. The transaction type "Import" is to be reported by non-producers who choose to be the first fuel reporting entity ~~claim the initial LCFS obligation~~ for out-of-state fuel imported into California. The following ~~parameters~~ information are to be reported:

1. Production Company ID and Facility ID for each blendstock. CARBOB and diesel fuel are exempt from this requirement.

2. The FPC ~~value~~ of each blendstock determined pursuant to section 95488.

3. The ~~volume~~ amount of each blendstock (in gal) per ~~compliance period~~ reporting period. For purposes of this provision only, except as provided in section 95491(d)(1)(A)4, the ~~reporting party~~ fuel reporting entity may report the total ~~volume~~ amount 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 $gCO_2e/MJ$).

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.

(B) *Temperature Correction*. All liquid fuel ~~volumes~~ amounts reported in the LRT-CBTS must be adjusted to standard temperature conditions of 60°F as follows:

1. For ethanol, the following formula must be used:

$$V_{s,e} = V_{a,e} \times (-0.0006301 \times T + 1.0378)$$

where:

$V_{s,e}$ is the standardized volume of ethanol at 60 °F, in gallons;

$V_{a,e}$ is the actual volume of ethanol, in gallons; and

$T$ is the actual temperature of the batch, in °F.

2. For biodiesel, one of the following two methodologies must be used:

a. $$V_{s,b} = V_{a,b} \times (-0.00045767 \times T + 1.02746025)$$

where:

$V_{s,b}$ is the standardized volume of biodiesel at 60 °F, in gallons;

$V_{a,b}$ is the actual volume of biodiesel, in gallons; and

$T$ is the actual temperature of the batch, in °F.

b. The standardized volume of biodiesel at 60 °F, in gallons, as calculated from the use of the American Petroleum Institute Refined Products Table 6B, as referenced in ASTM D1250.

3. For other liquid fuels, an appropriate formula commonly accepted by the industry shall be used to standardize the actual volume to 60 °F. Formulas used must be reported to and approved by ARB.

(C) *Exports.* If fuel reported in the LRT-CBTS is subsequently exported out of California, the export must be reported in the LRT-CBTS by the entity responsible for reporting export as described in subsections 95483(a)(5), (b)(2) and (c)(4).

1. *Reporting Fuel Blends.* When reporting export of fuel blends, the amount of each blendstock shall be reported in the LRT-CBTS. If the accurate blend percentage of each blendstock is not known then default blend percentage

values provided on CARB website shall be used for reporting the exports. Default blend percentage values are based on prior year average values.

2. *Substitute FPCs.* When a FPC is not available for reporting a fuel in the LRT-CBTS, fuel reporting entity shall use substitute FPCs corresponding to their fuel pursuant to section 95488.8(d).

(2)~~(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:

(A)~~1.~~ For CNG and L-CNG, the amount of fuel dispensed (in ~~scf~~ Therms) per ~~compliance~~ reporting 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~~ reporting period for all LDV and MDV, HDV-CIE and HDV-SIE.

For CNG and L-CNG, the amount of fuel dispensed at FSE must be reported in Therms at Higher Heating Value (HHV) 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:~~

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

(B)~~2.~~ ~~Except as provided elsewhere in this section~~ tThe amount of fuel dispensed ~~based on the use of separate fuel dispenser meters at each fuel dispenser must be reported;~~ at a fueling facility with a ~~FSE using~~ LCFS FSE ID and with transaction type “NGV Fueling”.

~~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;~~

(C)~~4.~~ The ~~carbon intensity value~~ FPC of the CNG, LNG, L-CNG, determined pursuant to section 95488.

(D)~~5.~~ For Bio-CNG, Bio-LNG, and Bio-L-CNG: Biomethane production Company ID and Facility ID.

(E) *Book-and-Claim Accounting for Pipeline Injected Biomethane.* Biomethane injected into the common carrier pipeline in North America (and thus comingled with fossil gas) can be reported as dispensed as bio-CNG, bio-LNG, or bio-L-CNG in California without regards to physical traceability. However, this "book-and-claim" accounting can only be done for two subsequent quarters. This means that, if a pipeline-injected biomethane amount (and all associated renewable attributes, including a beneficial CI) is injected in one calendar quarter, the ~~volume~~ amount claimed for LCFS reporting has to be matched to natural gas sold in California as RNG no later than the end of the following calendar quarter. After that period is over, any unmatched RNG amounts expire for the purpose of LCFS reporting.

(3)~~(D)~~ *Specific Quarterly Reporting Parameters for Electricity used as a Transportation Fuel*.

(A)~~1.~~ The total electricity dispensed (in kWh) to electric vehicles at residences. ~~, through the use of metering to measure the electricity directly dispensed to all vehicles at each residence using the LCFS FSE ID and transaction "EV Charging".~~ Notwithstanding section 95486(a)(2), for periods beginning January 1, 2015, residential charging may be measured by:

~~a.~~1. the use of metering to measure the electricity directly dispensed to all vehicles at each residence; or

~~b.~~2. 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.~~3. 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.~~95491(d)(3)(A)2. through 3. is exempted from the quarterly reporting deadlines set forth in section 95491~~(a)(1)(A)~~(b).

(B)~~2.~~ For each public access charging facility, the amount of electricity dispensed (in kWh) per FSE ~~using the LCFS FSE ID~~ and with ~~the~~ transaction type "EV Charging".

(C)~~3.~~ For each fleet charging facility, the amount of electricity dispensed (in kWh) per FSE ~~using the LCFS FSE ID~~ and with ~~the~~ transaction type "EV Charging".

(D)~~4.~~ For each workplace private access charging facility, the amount of electricity dispensed (in kWh) per FSE ~~using the LCFS FSE ID~~ and with ~~the~~ transaction type "EV Charging".

~~5. The carbon intensity value of the electricity determined pursuant to section 95488.~~

~~(E) For the electricity used for on-road light and medium duty applications not covered by section 95491(c) and (d)(3)(A) through (D), the Executive Officer will annually calculate the number of credits due to any Electrical Distribution Utility that has opted into the LCFS. Reporting information pursuant to 95491(d)(3)(K), is exempted from the quarterly reporting deadlines set forth in section 95491(b)(1).~~

(E)~~6.~~ For each fixed guideway system, the amount of electricity used for transit propulsion (in kWh) per FSE ~~using the LCFS FSE ID~~ and with ~~the~~ transaction type "Fixed Guideway Charging".

(F)~~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).~~

1. Annual electricity used (in kWh) calculated by Air Resources Board staff each year; or

2. Quarterly electricity used (in kWh), as measured per FSE ~~using the LCFS FSE ID~~ and with ~~the~~ transaction type "Forklift Fueling", in the case of an electric forklift fleet operator claiming credits.

3. Reporting information pursuant to 95491(d)(3)(F), paragraph 1. is exempted from the quarterly reporting deadlines set forth in section 95491(b).

~~(H) For each electric airport ground support equipment, the amount of electricity dispensed (in kWh).~~

(H) For each electric Transport Refrigeration Unit, the amount of electricity dispensed (in kWh).

(I) The FPC of the electricity determined pursuant to section 95488.

(J) For FPC based on the grid electricity mix, Production Facility ID is not required.

(4)~~(E)~~ *Specific Quarterly Reporting Parameters for Hydrogen ~~or a Hydrogen Blend~~ Used as a Transportation Fuel.*

(A)~~1.~~ For each private access fueling facility, the amount of fuel dispensed (in kg) per FSE with transaction type "HV Fueling" by vehicle weight category: LDV & MDV and HDV.

(B)~~2.~~ For each public access filling station, the amount of fuel dispensed (in kg) per FSE with transaction type "HV Fueling" by vehicle weight category: LDV & MDV and HDV.

(C)~~3.~~. For hydrogen fuel cell forklifts, the amount of fuel dispensed (in kg) per FSE with transaction type "Forklift Fueling".

(D)~~4.~~ The carbon intensity value of the hydrogen ~~or the blendstocks used to produce the hydrogen blend~~ determined pursuant to section 95488.

(E)~~5.~~ Production Company ID and Facility ID.

(5) *Specific Quarterly Reporting Parameters for Alternative Jet Fuel.*

(A) The carbon intensity value of each blendstock determined pursuant to section 95488.

(B) The volume of each blendstock (in gal) per compliance period. 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.).

(6) *Specific Quarterly Reporting Parameters for Propane.*

(A) The carbon intensity value for propane or renewable propane determined pursuant to section 95488.

(B) For renewable propane, the Production Company ID and Facility ID.

(e)~~(4)~~ *General and Specific Reporting Requirements for Annual Compliance Reports.* A ~~reporting party~~fuel reporting entity must submit an annual compliance report that meets, at minimum, the general and specific requirements for quarterly fuel transactions reports and the additional requirements set forth below:

(1)~~(A)~~ ~~A reporting party must report the following:~~ LRT-CBTS generates an annual summary for the review of fuel reporting entity and includes the following:

(A)~~1.~~ The total credits and deficits generated by the ~~regulated party~~ fuel reporting entities and project operators in the current compliance period, calculated in the LRT-CBTS as per equations in section 95486(b);

(B)~~2.~~ Any credits carried over from the previous compliance period;

(C)~~3.~~. Any deficits carried over from the previous compliance period;

(D)~~4.~~ The total credits acquired from another ~~party~~entity;

(E)~~5.~~ The total credits sold or otherwise transferred;

(F)~~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.~~

(G) In addition to the requirements listed in (A), a fuel reporting entity or credit generator must report the total credits pledged for sale into the CCM, when applicable.

(2)~~(B)~~ A producer of CARBOB, gasoline, or diesel fuel must report, for each of its refineries, the MCON or other crude oil name designation, amount (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.~~

(3)~~(C)~~ All pending credit transfers initiated during a compliance period ~~must~~ should be completed prior to submittal of the annual compliance report. However, if there is still a pending outgoing credit transfer, the credits will

be taken from the account of the Seller that initiated the transfer and the annual compliance report will reflect the adjusted credit balance. If there is a pending incoming credit transfer, the Buyer's annual report will not reflect the balance until the transfer is completed. Upon completion, the annual compliance report must be reopened and resubmitted with the adjusted credit balance.

(4) Fuel reporting entities for electricity must include supplemental information as specified in section 95483(e)(1) through (7) as applicable.

(f)~~(5)~~ *Significant Figures*. ~~The~~A regulated ~~party~~ entity must report the following quantities as specified below:

(1)~~(A)~~ carbon intensity, expressed to the same number of significant figures as shown in Tables 6, 7, and 8;

(2)~~(B)~~ credits or deficits, expressed to the nearest whole metric ton $CO_2$ equivalent;

(3)~~(C)~~ fuel ~~volume~~ amounts in units specified in sections 95491(a)(3) and (a)(4), expressed to the nearest whole unit applicable for that quantity; and

(4)~~(D)~~ any other quantity must be expressed to the nearest whole unit applicable for that quantity.

(g)~~(6)~~ ~~The regulated party~~ A fuel reporting entity must maintain a non-negative value for ~~each FPC~~ Total Obligated Amount and Total Amount, as defined in section 95481, for each FPC as summed across all quarterly data in the LRT-CBTS.

(h)~~(7)~~ *Correcting a Previously Submitted Report.* A ~~regulated party~~ fuel reporting entity 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~~ fuel reporting entity is required to provide justification for the report corrections and indicate the specific corrections to be made to the report. Pursuant to section 95486(a)(2), no credits may be claimed, and no deficits may be eliminated, retroactively for a quarter for which the quarterly reporting deadline has passed. 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 Blends* | *CNG & LNG* | *Electricity* | *Hydrogen ~~or Hydrogen Blends~~* | *Neat Ethanol or Biomass-Based Diesel Fuels or Other Alternative Fuels* |
|---|---|---|---|---|---|
| ~~Company or~~ Organization FEIN ~~Name~~ | x | x | x | x | x |
| Reporting Period (year & quarter) | 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 ID | x | x | x | x | x |
| Production Company ID and Facility ID | x** | x** | n/a | x | x** |
| Fueling Supply Equipment ID | | x | 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 or diesel replacement | n/a | x | x | x | x |
| Amount of each fuel used as a jet fuel replacement | n/a | n/a | n/a | n/a | x |
| ~~Amount of each fuel used as diesel fuel replacement~~ | ~~n/a~~ | ~~x~~ | ~~x~~ | ~~x~~ | ~~x~~ |
| ~~***Credits/deficits generated per quarter (MT)~~ | ~~x~~ | ~~x~~ | ~~x~~ | ~~x~~ | ~~x~~ |
| MCON or other crude oil name designation, volume (in gal), and country (or state) of origin for each crude supplied to the refinery | x | n/a | n/a | n/a | n/a |
| **For Annual Reporting (in addition to the items above)** | | | | | |
| ***Credits and Deficits generated per year (MT) | x | x | x | x | x |

| ***Parameters to Report*** | ***Gasoline & Diesel Fuel Blends*** | ***CNG & LNG*** | ***Electricity*** | ***Hydrogen ~~or Hydrogen Blends~~*** | ***Neat Ethanol or Biomass-Based Diesel Fuels or Other Alternative Fuels*** |
|---|---|---|---|---|---|
| ***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 pledged for sale into CCM ~~exported to another program~~ (MT), if any | ~~x~~ | ~~x~~ | ~~x~~ | ~~x~~ | ~~x~~ |
| ***Credits retired within LCFS (MT) to meet compliance obligation , if any | x | x | x | x | x |

** Same as Title Transfer Date; For Aggregated Transactions enter the last day of the reporting period*
*** Does not apply to CARBOB, Diesel Fuel, Fossil Propane or Fossil NG*
**** Value will be calculated, stored and displayed in the LRT-CBTS.*

## Table 12. Annual Compliance Calendar.

| | |
|---|---|
| January 31 | Electrical Distribution Utility that has opted into LCFS provide ARB data relevant to the calculation of credits for the prior year. (Please see section 95491(a)(3)(D).) |
| February 14 | Upload all Q4 fuel transactions data in LRT-CBTS and begin any needed reconciliation with counterparties |
| March 31 | Submit final Q4 fuel truncations report |
| March 31 | ARB calculate credits generated by Electrical Distribution Utility (EDU) for the prior year and place them into EDU's LRT-CBTS account |
| April 30 | Submit final Annual Report for preceding year; demonstrate compliance; voluntary pledge of credits into Credit Clearance Market (CCM) |
| May 15 | Upload all Q1 fuel transactions data 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 fuel truncations report |

| | |
|---|---|
| July 31 | CCM for prior year closes |
| August 14 | Upload all Q2 fuel transactions data in LRT-CBTS and begin any needed reconciliation with counterparties |
| August 31 | CCM purchasers submit amended Annual Report |
| September 30 | Submit final Q2 fuel truncations report |
| November 14 | Upload all Q3 fuel transactions data in LRT-CBTS and begin any needed reconciliation with counterparties |
| December 31 | Submit final Q3 fuel truncations report |

~~(b) *Recordkeeping and Auditing.*~~

**§ 95491.1. Fuel Transactions Recordkeeping and Auditing**

~~(1)~~(a) *Record Retention for Fuel Reporting ~~Parties~~Entities for Fuel Transactions in LRT-CBTS.*

~~(A)~~(1) Any record required to be maintained under this subarticle shall be retained for ~~five~~ ten years~~,~~. All data and calculations submitted by a fuel reporting entity for demonstrating compliance or claiming credit are subject to review by the Executive Officer or a third party approved by the Executive Officer and must be made available within 20 days upon request of the Executive Officer. Records ~~to~~ include, but are not limited to:

~~1.~~(A) Product transfer documents;
~~2.~~(B) Copies of all data reports submitted to the Executive Officer;
~~3.~~(C) Records related to each fuel transaction; ~~and~~
(D) Records used for each credit transaction;
(E) Records related to FSE registration, including but not limited to copies of monthly utility bills, NREL reports, Bills of Lading, and Division of Measurement Standards' certificates; and
~~4.~~(F) Records used for compliance or credit calculations.

~~(c)~~(b) *Documenting Fuel Transfers for LRT-CBTS Transactions.*

(1) A product transfer document provided by a reporting party pursuant to section 95483 must prominently state the information specified below.

(A) For transfers where an LCFS obligation is being passed to the transferee:

1. Transferor Company Name, Address and Contact Information;

2. Transferee Company Name, Address and Contact Information;

3. Transaction Date

   a. For Non-Aggregated Transactions: Date of Title Transfer
   b. For Aggregated Transactions: Quarter End Date

4. Fuel Pathway Code (FPC) and Carbon Intensity (CI);

5. ~~Volume/~~Amount and Units;

6. A statement identifying whether the LCFS Obligation is passed to the transferee; and

7. Fuel Production Company ID and Facility ID as registered with RFS2 program or LCFS program. This does not apply to CARBOB, Diesel Fuel or Fossil NG.

(B) For transfers where the LCFS obligation was retained by the transferor, the following is to be provided to the transferee and passed along to any subsequent owner or supplier:

1. All information identified in 94591.1~~(c)~~(b)(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 amounts (lrtadmin@arb.ca.gov)."

~~(d)~~(c) *Verification ~~of Pathway, CI, Report~~ Requirement and Deadline*. ~~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.~~ Each reporting party identified as an entity responsible for verification in section 95500(XXX) must obtain third-party verification services from a verification body that meets the requirements specified in section 95502 or certification body that meets the requirements specified in section 95504. A positive or qualified positive verification statement for the previous calendar year must be submitted to the Executive Officer by the

verification or certification body by August 1 in order to maintain a valid fuel pathway code for use in reporting fuel transactions for credit generation.

~~(e)~~(d) *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~~entity, a ~~reporting party~~fuel reporting entity, 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~~ fuel reporting entity or a person to whom the compliance obligation has been transferred directly or indirectly (including the reporting party) from the ~~regulated party~~ fuel reporting entity, 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~~ fuel reporting entity in the LRT-CBTS.

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

(1) Opting in pursuant to section 95483.1;

(2) Receipt of compensation of any kind, including sales proceeds and commissions, from any transfers of a LCFS credit made pursuant to section 95485(b); or

(3) Submittal of information to the Executive Officer pursuant to the crude oil innovative method provisions set forth in section 95489(d)(2).

(4) Submittal of information to the Executive Officer pursuant to the fuel pathway certification provisions set forth in section 95488(c).

(5) Registration in the LRT-CBTS as a broker pursuant to section 95483.2(d)(2).

NOTE: Authority cited: Sections 38510, 38530, 38560, 38560.5, 38571, 38580, 39600, 39601, 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~~ entity'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~~ entity 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 a~~n Approved~~ certified CI as needed to prevent additional accrual of credits or deficits under the Approved CI and to prevent transfer of potentially invalid credits or deficits. Suspension of an account may include locking an account within the LRT-CBTS to prevent credit transfers or report alteration.

(4) *Final Determination*. Within 50 days after making an initial determination under sections 95483.3(b)(1) and (2), above, the Executive Officer shall

make a final determination based on available information whether, in his or her judgment, any of the bases listed in subsection (b)(1) exists, and notify affected parties and any linked program. If the final determination invalidates credits or deficit calculations, the corresponding credits and deficits will be added to or subtracted from the appropriate LRT-CBTS accounts. Where such action creates a deficit in a past compliance period, the deficit holder has 60 days from the date of the final determination to purchase sufficient credits to eliminate the entire deficit. A return to compliance does not preclude further enforcement actions.

(5) *Responsibility for Invalidated Credits or Miscalculated Deficits.* Any party that generated, previously held, or holds invalidated credits or whose account reflects an invalid deficit calculation is responsible for returning its account to compliance without regard to fault.

(6) The Executive Officer may choose to retire credits from the Buffer Account to address invalidated credits or uncovered deficits.

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.~~[Reserved]

~~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. [Reserved].

## § 95499. [Reserved].

Section 95500 identifies the entities that would be responsible to engage a verification body accredited by the Executive Officer or engage a certification body (cooperating with a certification system selected by the Executive Officer) for validation and verification services. Associated requirements are organized by each report type: fuel pathway applications, annual fuel pathway reports, quarterly fuel transactions reports, quarterly crude oil reports, and project reports.

Section 95500 includes verification deadlines, outcomes when an adverse verification statement is received, and timing of program implementation being considered. It also includes requirements for the entity to rotate its verification body and individual verifiers, to fix correctable errors, and to document report modifications.

Please note that staff is still evaluating whether to use the certification system/certification body model.

## § 95500. Requirements for Validation of Fuel Pathway Applications, Verification of Annual Fuel Pathway Reports, Quarterly Fuel Transactions Reports, Quarterly Crude Oil Reports, and Project Reports.

Entities responsible for validation or verification may elect to engage a verification body accredited by the Executive Officer pursuant to section 95502 or may elect to participate in a certification system recognized by the Executive Officer pursuant to section 95504 and engage an associated certification body that meets minimum requirements in section 95504(c) to include verification services specified in section 95501. A responsible entity or its authorized designee who has been notified by a verification

body or a certification system of a suspended or revoked Executive Order must engage with a different verification body or participate in a different certification system for the next validation and verification services required.

(a) *Validation of Fuel Pathway Applications (CIs).*

(1) The following entities must obtain the services of an Executive Officer accredited verification body or an Executive Officer selected certification system for purposes of verifying each Fuel Pathway Application submitted under this subarticle:

(A) Fuel pathway applicants supplying site-specific CI data for the Fuel Pathway Application, as specified in sections 95488.5 through 95488.8.

(B) Feedstock suppliers who apply for separate Executive Officer recognition and elect to be responsible for separate validation and verification as specified in section 95488.7(g).

(2) *Potential Outcomes of Validation of Fuel Pathway Applications*:

(A) A positive or qualified positive validation statement would result in the application progressing to final evaluation for certification by the Executive Officer.

(B) An adverse validation statement would result in denial of the Fuel Pathway Application, with the opportunity to reapply. In cases where a single applicant or a joint applicant does not complete validation, the application will be denied. In cases where an applicant cannot complete validation within six months of submitting an application, the application will be denied.

(b) *Verification of Annual Fuel Pathway Report (CIs).*

(1) The following entities must obtain the services of an Executive Officer accredited verification body or an Executive Officer selected certification system for purposes of verifying each fuel pathway report submitted under this subarticle:

(A) Holders of certified fuel pathways who supplied site-specific CI data for pathway certification and are required to update site-specific CI data on an annual basis, as specified in this subarticle, are responsible for annual verification of their Fuel Pathway Report.

(B) Feedstock suppliers who apply for separate Executive Officer recognition and elect to be responsible for separate validation and

verification as specified in section 95488.7(g), are responsible for annual verification of their site specific data.

(2) *Verification Schedule.* Entities responsible for verification of Fuel Pathway Reports (CI) must follow the verification schedule specified here.

(A) *Annual Verification*. The entity responsible for verification of fuel pathway report must ensure a verification statement is submitted to the Executive Officer on an annual basis by August 31, unless specified otherwise in section 95500(b)(2)(B).

(B) *Triennial Verification.* Alternative liquid fuel producers producing fuel, whether reported as fuel production or import, that generate less than or equal to 6,000 credits from their fuel production in a calendar year may qualify for triennial verifications. Fuel producers qualifying for triennial verifications must ensure a verification statement is submitted to the Executive Officer by August 31 of the year subject to verification.

(3) An adverse verification statement for verification of Annual Fuel Pathway Reports would result in Executive Officer investigation.

(c) *Verification of Quarterly Fuel Transactions Reports.*

(1) Entities submitting Quarterly Fuel Transactions Reports following transactions must obtain the services of an Executive Officer accredited verification body or an Executive Officer selected certification system for purposes of verifying each Quarterly Fuel Transactions Report submitted under this subarticle:

(A) Produced, imported, and exported for all liquid fuels;

(B) Natural gas and propane vehicle fueling; and

(C) Hydrogen vehicle fueling for hydrogen via steam methane reformation from pipeline-injected biomethane.

(2) *Verification Schedule.* Entities responsible for verification of Quarterly Fuel Transactions Reports must follow the verification schedule specified here.

(A) *Annual Verification*. The entity responsible for verification of Quarterly Fuel Transactions reports must ensure a verification statement is submitted to the Executive Officer annually by August 31st, unless specified otherwise in section 95500(c)(2)(B).

(B) *Triennial Verification.* Alternative liquid fuel producers qualifying for triennial verification of Fuel Pathway Report, as specified in section 95500(b)(2)(B), may qualify for triennial verifications of Quarterly Fuel Transactions Reports. The entity responsible for verification of Quarterly Fuel Transactions Reports must ensure a verification statement is submitted to the Executive Officer by August 31 of the year subject to verification.

(C) Exporters of fuel quantities resulting in less than or equal to 6,000 credits and less than or equal to 6,000 deficits in a calendar year are exempt from verification of the Quarterly Fuel Transactions Reports for that calendar year.

(3) An adverse verification statement for verification of Quarterly Fuel Transactions Reports would result in Executive Officer investigation.

(d) *Verification of Quarterly Crude Oil Reports.*

(1) Entities supplying data related to crude oil volumes must obtain the services of an Executive Officer accredited verification body or an Executive Officer selected certification system for purposes of verifying the Quarterly Crude Oil Report submitted in the prior calendar year under this subarticle.

(2) *Verification Schedule.* Entities responsible for verification of the Quarterly Crude Oil Reports must ensure a verification statement for the prior calendar year of data is submitted to the Executive Officer annually by April 30.

(3) *Potential Outcomes of Verification of Quarterly Crude Oil Reports:*

(A) A positive or qualified positive verification statement would result in credit issuance.

(B) An adverse verification statement would result in Executive Officer investigation and may result in credit adjustment for innovative crude projects that are credited quarterly or delay in crediting for innovative crude projects that are credited annually.

(e) *Verification of Project Reports.*

(1) The following entities must obtain the services of an Executive Officer accredited verification body or an Executive Officer selected certification system for purposes of verifying each Project Report submitted under this subarticle:

(A) Project operators and joint applicants for refinery investment project reports;

(B) Project operators and joint applicants for innovative crude project reports; and

(C) Project operators and joint applicants for renewable hydrogen reports.

(2) *Verification Schedule.* Entities responsible for verification of Project Reports must follow one of the two verification schedules specified here.

(A) *Quarterly Verification.* The entity responsible for verification of Project Reports must ensure a verification statement is submitted to the Executive Officer by the Quarterly Fuel Transactions Report deadline, as specified in this subarticle, unless opting for the annual reporting deadline specified in section 95500(d)(2)(B).

(B) *Annual Verification.* The entity responsible for verification of Project Reports must ensure a verification statement is submitted to the Executive Officer annually by August 31 of the prior calendar year.

(3) *Potential Outcomes of Verification of Project Reports:*

(A) A positive or qualified positive verification statement would result in credit issuance.

(B) An adverse verification statement would result in no credit issuance and Executive Officer investigation.

(f) *Timing of Verification Program Implementation.*

(1) *Validation of Fuel Pathway Applications (CIs).* New fuel pathway applications received in 2019 and thereafter must be validated after submittal to the Executive Officer.

(2) *Verification of Annual Fuel Pathway Report (CIs).* Entities responsible for verification of Annual Fuel Pathway Reports must follow the verification timing specified here.

(A) Beginning in 2020 for the 2019 Fuel Pathway Report for GREET 3.0 fuel pathways certified before July 1, 2019.

(B) Beginning in 2021 for GREET 3.0 fuel pathways certified on or after July 1, 2019 for the 2020 Fuel Pathway Report covering data from the date of pathway certification to December 31, 2020. The same

verification timing would apply for pathways certified on or after July 1 of each year.

(C) Beginning in 2023 for 2019 to 2022 Fuel Pathway Reports, covering data from 2019 to 2022, for entities qualifying for triennial verifications.

(3) *Verification of Quarterly Fuel Transactions Reports.* Entities responsible for verification of Quarterly Fuel Transactions Reports must follow the verification timing specified here for program implementation.

(A) Beginning in 2020 for 2019 Quarterly Fuel Transactions Reports.

(B) Beginning in 2023 for Quarterly Fuel Transactions Reports from 2019 to December 31, 2022 for entities qualifying for triennial verifications.

(4) *Verification of Quarterly Crude Oil Reports.* Entities responsible for verification of Quarterly Crude Oil Reports must follow the verification schedule in section 95500(d)(2), beginning in 2020 for 2019 data.

(5) *Verification of Project Reports.* Entities responsible for verification of Project Reports must follow the verification schedule in section 95500(e)(2), beginning in 2019 for 2019 data submitted.

(g) *Verification Body Rotation Requirements.* Entities responsible for validation or verification must not use the same verification body or verifier(s) to perform validation and verification services under this subarticle for a period of more than six consecutive years, beginning January 1, 2019.

The six-year period begins on the date the responsible entity or its agent first contracts for any validations or verifications under this subarticle and ends on the date the final verification statement is submitted. Even if these services are provided before the verification body or verifier have received an Executive Officer accreditation, the six-year period still begins when these services are contracted for, and if accreditation is later received. The six-year limit does not reset upon a change in responsible entity ownership or operational control.

If a responsible entity is required or elects to contract with another verification body or verifier(s), the reporting entity may contract verification services from the previous verification body or verifier(s) only after not using the previous verification body or verifier(s) for at least three years, except in the case of a set-aside of a validation or verification statement as specified in section 95501.

(h) *Report Modifications.* The responsible entity must maintain documentation to support any revisions to the initial application or report. All applications and

reports must be maintained by the responsible entity pursuant to the recordkeeping requirements of this article.

(1) *Correctable Errors.* As a result of data checks by the verification team and prior to completion of a validation or verification statement, the responsible entity must fix all correctable errors that affect the reported data and submit a revised application or report to the Executive Officer. Failure to do so will result in an adverse verification statement. Failure to fix misreported data that do not affect issuance of credits or deficits represents a nonconformance with this article but does not, absent other errors, result in an adverse validation or verification statement.

(2) *Reporter's Log of Corrective Action.* The reporter's log of corrective actions must identify all corrections made to submitted data, the regulatory section related to nonconformances, if applicable, and indicate how the issues were corrected to reduce risk of similar errors in the future. The log must be included or referenced in the entity's monitoring plan pursuant to section 95488.9(b).

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).

Section 95501 would establish requirements for validation and verification services by accredited verification bodies and selected certification systems. Please note that staff is still evaluating whether to use the certification system/certification body model.

Verification services include Verification Plan, Planning Meetings, Site Visit(s), Sampling Plan, Data Checks, Modifications of Applications or Reports, Findings, Log of Issues, Material Misstatement Assessment, Review of Missing Data Substitution, Verification Statement, Independent Review, Completion of Findings and Verification Report.

Section 95501 also includes a process to petition the Executive Officer when an adverse verification statement will be submitted. Criteria and a process for setting aside positive or qualified positive verification statements are described. Entities, verification bodies and certification bodies would be required to provide information to the Executive Officer within a specified timeframe. Reverification would be required if a verification statement is set aside.

## § 95501. Requirements for Validation and Verification Services.

Validation and verification services performed by verification bodies and by certification bodies, associated with selected certification systems, are subject to the following requirements. The general term "verification services" includes validation services for fuel pathway applications unless a distinction is made in context. Requirements for the "verification team" apply to verification bodies and certification bodies.

(a) *Notice of Validation or Verification Services.* The verification body or certification body must submit a notice of validation or verification services to the Executive Officer.

For verification bodies, the notice must be submitted to the Executive Officer after the Executive Officer has provided a determination that the potential for a conflict of interest is acceptable as specified in section 95503(e) and that validation or verification services may proceed. The verification body may begin services for the responsible entity after the notice is received by the Executive Officer, but must allow 14 days advance notice of the site visit unless an earlier date is approved by the Executive Officer in writing. In the event that the conflict of interest statement and the notice of validation or verification services are submitted together, services cannot begin until ten days after the Executive Officer has deemed acceptable the potential for conflict of interest as specified in 95503(e).

The certification body may begin validation or verification services for the responsible entity after the notice is received by the Executive Officer, but must allow 20 days advance notice of the site visit unless an earlier date is approved by the Executive Officer in writing.

Verification services may not begin until the responsible entity attests that the data submitted to the Executive Officer is true, complete, and accurate by certifying under penalty of perjury under the laws of the State of California. The notice must include the following information:

(1) A list of personnel who will be designated to provide verification services as a verification team, including the names of each designated employee, the lead verifier, and all subcontractors, and a description of the roles and responsibilities each team member will have. The independent reviewer must also be listed separately.

(2) Documentation that the verification team has the skills required to provide verification services for the responsible entity and type of application or report. The notice must include a demonstration that the verification team includes at least one member with specified competency that is not also the independent reviewer, when required below:

(A) Specified competency as evidenced by experience in alternative fuel production technology and process engineering when providing

validation services for fuel pathway applications or verification services for fuel pathway reports;

(B) Specified competency as evidenced by accreditation as an oil and gas systems specialist pursuant to MRR when providing verification services for Quarterly Fuels Transactions Reports submitted by producers and importers of gasoline or diesel, quarterly crude oil reports, and project reports as listed in section 95500.

(3) General information on the entity responsible for verification services, including:

(A) The name of the responsible entity and the facilities and other locations that will be subject to validation or verification services, responsible entity contact, address, telephone number and e-mail address;

(B) The LCFS Facility ID for the responsible entity;

(C) The date(s) of the on-site visit, if required in section 95501(b)(3), with physical address 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)(2) changes after the notice is submitted to the Executive Officer, the verification body or certification body must notify the Executive Officer as soon as the change is made and submit an updated notice of verification services.

The verification body must also submit an updated conflict of interest self-evaluation form with an updated notice of verification services as soon as the change is made. The conflict of interest must be reevaluated pursuant to section 95503(f) and the Executive Officer must approve any changes in writing.

(b) Validation or verification services shall include, but are not limited to, the following:

(1) *Validation or Verification Plan*. The verification team must develop a validation or verification plan based on the following:

(A) *Validation of Fuel Pathway Application or Verification of Fuel Pathways Reports (CI).* Information from the fuel pathway applicant or fuel pathway holder and entity generating site-specific

CI data. Such information must include the following and either be included in or referenced by the entity's monitoring plan:

1. Information to allow the verification team to develop an understanding of the entity's:

   a. Calculated carbon intensity value(s) and operations data;

   b. Facility configuration and production process diagram to include storage tanks; production units; and meter location, purpose, type, and identification number to associate with calibration records;

   c. Methodologies used to quantify and report site-specific CI data, fuel pathway allocation methodology to attribute CI characteristics to produced fuel and associated data as needed to develop the validation or verification plan;

   d. Data management systems and accounting procedures used to measure, process, record, and report site-specific CI data and associated data as needed to develop the validation or verification plan;

   e. Supply chain information about the upstream and downstream entities contributing to site-specific CI data, including a list of feedstock suppliers and contact names, with physical addresses;

   f. Calibration procedures and logs for measurement devices capturing site-specific CI data;

   g. Previous LCFS validation and verification reports, as applicable, and other audit reports including reports from production or management system certifications and internal audits.

2. Organizational chart and list of key personnel involved in developing the fuel pathway application or report and their qualifications, including training.

   a. Previously certified FPC(s), associated CI values, approved CI calculator, and supplemental documentation as specified in section 95488.4 through 95488.8, as applicable

(B) *Verification of Quarterly Fuel Transaction Reports.* Information from the responsible entity. Such information must include:

1. Information to allow the verification team to develop an understanding of the entity's quarterly fuel transactions, reporting procedures, and the facility or entity organizational structure, boundaries and operations;

a. Location of central data management

b. Data management systems and accounting practices and procedures used to collect, process, record, and report fuel transactions data, including fuel quantities and associated FPCs;

c. Calculation and methodologies used to quantify and report fuel quantities and associated FPCs;

d. Transportation records of the reported fuel, to include mode and distance of transportation from the fuel production site to California and confirmation that the fuel was used for transportation in California;

e. Previous LCFS verification reports, as applicable, and other audit reports including reports from product or management system certifications and internal audits;

f. Organizational chart and list of key personnel involved in developing the quarterly fuel transaction reports and their qualifications, including training.

(C) *Verification of Project Reports (Project-based Crediting).* Information from the responsible entity. Such information must include: **[Placeholder]**

a. Refinery Investment Projects
b. Renewable Hydrogen Projects at Refineries
c. Innovative Crude Projects

(D) *Verification of Quarterly Crude Oil Reports*. **[Placeholder]**

(2) Timing of validation or verification services. Such information must include:

(A) Dates of proposed meetings and interviews with responsible entity personnel;

(B) Dates of proposed site visits;

(C) Types of proposed document and data reviews;

(D) Expected date for completing validation or verification services.

(3) *Planning Meetings with the Entity Responsible for Verification.* The verification team must discuss with the responsible entity the scope of the verification services and request any information and documents needed for initial validation or verification services. The verification team shall create a draft sampling plan and verification plan prior to the site visit. The verification team must also review the documents submitted and plan and conduct a review of original documents and supporting data for the validation and verification services specified in section 95501(a).

(4) *Site visits.* At least one verifier in the verification team shall at a minimum make one site visit for validation or during each year verification is required to each entity or facility for which an application or report, as specified in section 95500, is submitted. The verification team member(s) shall visit the headquarters or other location of central data management, as applicable.

(A) *Validation of Fuel Pathway Application and Verification of Fuel Pathway Reports.* Fuel pathway applicants, fuel pathway holders, and entities generating site-specific CI data will require a site visit for validation and annual verification. During the site visit, the verification team member(s) must:

1. Check that all site-specific CI data and inputs as specified in this subarticle are identified appropriately.

2. Review and understand the data management systems used by the entity to acquire, process, and track CI data and inputs. The verification team member(s) must evaluate the uncertainty and effectiveness of these systems.

3. Carry out tasks that, in the professional judgment of the team, are needed in the validation or verification process, including the following:

a. Interviews with key personnel, such as technical engineers and facility experts, as well as staff

involved in compiling data and preparing the fuel pathway application and fuel pathway reports;

b. Assessing conformance with measurement accuracy, reasonableness of temporary methods and conformance with method documentation in monitoring plan, conformance with alternative methodology approvals by the Executive Officer, and conformance with data capture requirements specified in this subarticle.

c. Reviewing fuel transactions data to confirm feedstock and fuel purchases and sales, CI data and inputs, and confirming the complete and accurate submission of required CI data.

(B) *Verification of Quarterly Fuel Transactions Reports.* During the site visit, the verification team member(s) shall:

1. Review and understand the data management systems used by the responsible entity to acquire, process, track, and report fuel quantities and associated FPCs. The verification team member(s) shall evaluate the uncertainty and effectiveness of these systems.

2. Carry out tasks that, in the professional judgment of the team, are needed in the verification process, including the following:

a. Interviews with key personnel, such as staff involved in compiling and reporting fuel quantities and associated FPC data, and preparing quarterly fuels transactions reports;

b. Assessing conformance with measurement accuracy requirements specified in this subarticle for meters that do not meet criteria for financial transactions meters;

c. Reviewing financial transactions, invoices, contracts, PTDs, and other delivery documents to confirm reported fuel quantities and associated FPCs, and confirming the complete and accurate submission of required Quarterly Fuel Transactions Reports.

(5) *Sampling Plan.* As part of validating fuel pathway applications and verifying fuel pathway reports and quarterly fuels transactions reports the verification team shall develop a sampling plan that meets the following requirements:

(A) The verification team shall develop a sampling plan based on a strategic analysis developed from document reviews and interviews to assess the likely nature, scale and complexity of the verification services for a responsible entity and type of report. The analysis shall review the inputs for the development of the submitted application and reports specified in section 95500, the rigor and appropriateness of data management systems, and the coordination within the responsible entity's organization to manage the operation and maintenance of equipment and systems used to complete applications and reports.

(B) The verification team shall include in the sampling plan a ranking of data sources by relative contribution to the data type to be assessed for material misstatement and a ranking of data sources with the largest calculation uncertainty, based on type of report and application.

(C) The verification team must include in the sampling plan a qualitative narrative of uncertainty risk assessment, including risk of incomplete reporting as applicable in this subarticle:

1. For Fuel Pathway Applications and Reports

a. Data acquisition equipment;
b. Data sampling and frequency;
c. CI calculations, including site-specific CI inputs, and data to support each input;
d. Data processing and tracking;
e. FPC allocation methodology;
f. Management policies or practices in developing fuel pathway applications and annual fuel pathway reports as specified in section 95500.

2. For Quarterly Fuel Transactions Reports

a. Data processing and tracking for fuel transactions data and fuel transportation mode and distance;
b. Management policies or practices in developing quarterly and annual fuel transaction reports as specified in section 95500.

3. For Quarterly Crude Oil Reports

a. Data processing and tracking
b. Management policies and practices for developing reports

4. For Project Reports

a. Data acquisition equipment;
b. Data sampling and frequency;
c. Calculations;
d. Data processing and tracking;
e. Management policies or practices in developing project reports.

(D) After completing the analysis required by sections 95501(b)(4)(A)-(C) above, the verification team must include in the sampling plan a list which includes the following:

1. Data sources that will be targeted for document reviews, and data checks as specified in 95501(b)(6), and an explanation of why they were chosen;

2. Methods used to conduct data checks for each data source;

3. A summary of the information analyzed in the data checks and document reviews conducted for each data source.

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.

(E) For fuel pathway applications and fuel pathway reports that include specified source feedstocks, the verification team must include in its risk assessment and sampling plan the need for a desk review or site visit for verification of any entity in the feedstock chain of custody upstream of the fuel producer to trace feedstock through feedstock suppliers, including aggregators, storage or pretreatment facilities, and traders or brokers, to the point of origin as required in section 95488.7(g). If an anomaly is detected during data checks of a responsible entity's accounts, the verification team must update its risk assessment and sampling plan to assure specified source feedstock characterization and quantities to the point of origin.

(F) The verification team must revise the sampling plan to describe

tasks completed by the verification team as information becomes available and potential issues emerge with material misstatement or nonconformance with the requirements of this subarticle.

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

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

(6) *Data Checks*. To determine the reliability of the submitted data, the verification team must conduct data checks. Such data checks must focus on data with the largest contributions to greenhouse gas emissions including life cycle greenhouse gas emissions and reductions with the most uncertainty, and must include the following:

(A) The verification team must use data checks to ensure that the appropriate methodologies have been applied for the data in applications and reports required in this subarticle:

(B) The verification team must choose data checks to ensure the accuracy of the data in applications and reports required in this subarticle:

(C) The verification team must choose data checks based on the relative contribution to greenhouse gas emissions or reductions and the associated risks of contributing to material misstatement or nonconformance, as indicated in the sampling plan;

(D) The verification team must use professional judgement in the number of data checks required for the team to conclude with reasonable assurance whether the data type specified for the application or report is free of material misstatement. At a minimum, data checks must include the following:

1. Tracing data in the application or report to its origin;

2. Reviewing the procedure for data compilation and collection;

3. Recalculating intermediate and final data to check original calculations;

4. Reviewing calculation methodologies used by the responsible entity for conformance with this subarticle; and

5. Reviewing meter and analytical instrumentation measurement accuracy and calibration for consistency with the requirements of this subarticle.

(E) The verification team is responsible for ensuring via data checks that there is reasonable assurance that the application and report conforms to the requirements of this subarticle.

(F) The verification team must compare its own calculated results with the submitted 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 data were checked, the quantity of data evaluated for each data type, the percentage of reported source data covered by the data checks, and any separate discrepancies that were identified in the application or report.

(7) *Fuel Pathway Application and Report Modifications.* As a result of data checks by the verification team and prior to completion of a validation or verification statement, the responsible entity must fix all correctable errors that affect CI or fuel transactions data in the fuel pathway application, fuel pathway report, or quarterly fuels transactions reports, and submit a revised application or report to the Executive Officer. Failure to do so will result in an adverse verification statement. Failure to fix misreported data that do not affect CI and fuel transaction data represents a nonconformance with this subarticle but does not, absent other errors, result in an adverse validation or verification statement.

The verification team shall use professional judgment in the determination of correctable errors as defined in section 95481 including whether differences are not errors but result from truncation or rounding or averaging.

The verification team must document the source of any difference identified, including whether the difference results in a correctable error or whether the difference does not require further investigation because it is the result of truncation, rounding, or averaging.

(8) *Findings*. To verify that the application or report is free of material misstatements, the verification team shall make its own calculation of the

specified data types submitted substituting the checked data. The verification team must determine whether there is reasonable assurance that the application or report does not contain a material misstatement, defined for each application or report type in section 95481, using the units required by the applicable parts of this subarticle. To assess conformance with this subarticle, the verification team must review the methods and factors used to develop the application or report for adherence to the requirements of this subarticle and identify whether other requirements of this subarticle are met.

(9) *Log of Issues*. The verification team must keep a log of any issues identified in the course of validation or verification activities that may affect determinations of material misstatement and nonconformance, whether identified by the verifier, the responsible entity, or the Executive Officer regarding the original or subsequent application or report versions. The issues log must identify the regulatory section related to the nonconformance or potential nonconformance, if applicable, and indicate if the issues were corrected by the responsible entity prior to completing the validation or verification. Any other concerns that the verification team has with the preparation of the application or report must be documented in the issues log and communicated to the responsible entity during the course of validation or verification activities. The log of issues must indicate whether each issue has a potential bearing on material misstatement, nonconformance, or both and whether an adverse verification statement may result if not addressed.

(10) *Material Misstatement Assessments for Fuel Pathways and Quarterly Fuel Transactions.* Assessments of material misstatement are conducted separately on each calculated CI value and each quarterly fuel transaction quantity per FPC (units from the applicable sections of this subarticle).

(A) *CI Inputs.* In assessing whether a fuel pathway application or fuel pathway report contains a material misstatement, the verification team must determine whether any calculated CI value contains a material misstatement using the following equation:

$$Percent\ error\ (CI\ ) = \sum \frac{[Difference\ in\ CI\ from\ Discrepancies, Omissions, Misreporting]x\ 100\%}{Reported\ CI\ Value}$$

Where:

"Difference in CI" means the difference between the reported CI and the verifier's calculation of CI. The verifier's CI calculation is based on site-specific data inputs modified to include discrepancies, omissions, and misreporting found as the result of

site-specific CI data checks required in section 95501(b)(6).

"Discrepancies" means any differences between the reported site-specific CI inputs and the verifier's review of site-specific CI inputs subject to data checks in section 95501(b)(6).

"Omissions" means any site-specific CI inputs or associated source data the verifier concludes must be part of the fuel pathway application or fuel pathway report, but were not included by the responsible entity.

"Misreporting" means duplicate, incomplete or other CI input data the verifier concludes should, or should not, be part of the fuel pathway application or fuel pathway report.

"Reported CI value" means the CI submitted by the responsible entity in the fuel pathway application or fuel pathway report.

Each fuel pathway CI subject to data checks in section 95501(b)(6) must be assessed separately for material misstatement. One or more material misstatements results in a finding of material misstatement for the fuel pathway application or for the fuel pathway reports for the verification period.

(B) *Quarterly Fuel Transaction Quantities per FPC*. In assessing whether a quarterly fuel transaction report contains a material misstatement, the verification team must determine whether any quarterly fuel transaction quantity per FPC specified in section 95491 contains a material misstatement using the following equation:

$$Percent\ error\ (transactions) = \sum \frac{[Discrepancies + Omissions + Misreporting] x\ 100\%}{Reported\ Quarterly\ Fuel\ Transaction\ Quantity\ for\ FPC}$$

Where:

"Discrepancies" means any differences between the reported fuel quantity for the FPC reported in the Quarterly Fuel Transactions Report and the verifier's review of fuel quantities subject to data checks in section 95501(b)(6).

"Omissions" means any fuel quantity the verifier concludes must be part of the Quarterly Fuel Transactions Report, but were not included by the responsible entity.

"Misreporting" means duplicate, incomplete or other fuel quantity data the verifier concludes should, or should not, be part of the Quarterly Fuel Transactions Report.

"Reported quarterly fuel transaction quantity for FPC" means the total of all reported fuel transaction quantities for each FPC for each quarter in which the verifier is conducting a material misstatement assessment.

Each fuel quantity reported each quarter for each FPC subject to data checks in section 95501(b)(6) must be assessed separately for material misstatement. One or more material misstatements results in a finding of material misstatement for the verification period.

(C) When evaluating material misstatement, verifiers must deem correctly substituted missing data to be accurate, regardless of the amount of missing data.

(11) *Material Misstatement Assessment for Project Reports (Project-based Crediting).* Verifications and assessments of material misstatement are conducted separately on each project report. In assessing whether a project report contains a material misstatement, the verification team must determine whether any data specified in this subarticle contains a material misstatement using the following equation:

$$Percent\ error\ (project-based\ data) = \sum \frac{[Discrepancies + Omissions + Misreporting]x\ 100\%}{Reported\ GHG\ emissions\ reduction\ or\ removal}$$

Where:

"Discrepancies" means any differences between the reported GHG emissions reductions or removal enhancements in the Project Report and the verifier's review of the data subject to data checks in section 95501(b)(6).

"Omissions" means any GHG emissions, excluding any GHG reductions or removal enhancements, the verifier concludes must be part of the Project Report, but were not included by the responsible entity.

"Misreporting" means duplicate, incomplete or other GHG emissions, reductions, or removal enhancements data the verifier concludes should, or should not, be part of the Project Report.

"Reported GHG emissions reduction or removal" means the total of all GHG emissions reduction or removal reported in the project report for which the verifier is conducting a material misstatement assessment.

When evaluating material misstatement, verifiers must deem correctly substituted missing data to be accurate, regardless of the amount of missing data

(12) *Quarterly Crude Oil Reports*. Material misstatement assessment does not apply to data submitted in quarterly crude oil reports, but the data must be assessed for reasonable assurance of conformance with this subarticle.

(13) *Review of Missing Data Substitution*. If a source selected for a data check was affected by a loss of data used for the reported data in the application or report, pursuant to this article:

(A) The verification team must confirm that the reported data were calculated using the applicable missing data procedures, or that a reasonable temporary method, or Executive Officer approved alternate method was used.

(B) The verifier must note the date, time and source of any missing data substitutions discovered during the course of verification in the validation or verification report.

(c) Completion of validation or verification services must include:

(1) *Validation or Verification Statement*. Upon completion of the validation or verification services specified in section 95500, the verification body or certification body must complete a validation or verification statement, and provide its statement to the responsible entity and Executive Officer by the applicable verification deadline specified in section 95500. Before the validation or verification statement is completed, the verification body or certification body must have the validation or verification services and findings of the verification team independently reviewed within the verification or certification body by an independent reviewer who is a lead verifier not involved in services for that responsible entity during that year.

(2) *Independent Review*. The independent reviewer must 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 validation or verification statement.

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

(3) *Completion of Findings and Validation or Verification Report*. The verification body or certification body is required to provide each responsible entity with the following:

(A) A detailed validation or verification report which must at a minimum include:

1. A detailed description of the facility or entity including all data sources and boundaries;

2. A detailed description of the data management system and accounting procedures;

3. A detailed description of supply chain entities contributing CI parameters;

4. The validation or verification plan;

5. The detailed comparison of the data checks conducted during validation or verification services;

6. The log of issues identified in the course of validation or verification activities and their resolution;

7. Any qualifying comments on findings during validation or verification services;

8. Findings of omissions, discrepancies, and misreporting and the material misstatement calculation required in section 95501(b)(10).

(B) The validation or verification report must be submitted to the responsible entity at the same time as or before the final validation or verification statement are submitted to the Executive Officer. The detailed validation or verification report must be made available to the Executive Officer upon request.

(C) The verification team must have a final discussion with the responsible entity explaining its findings, and notify the responsible entity of any unresolved issues noted in the issues log before the validation or verification statement is finalized.

(D) The verification or certification body must provide the validation or verification statement to the responsible party and the Executive Officer, attesting whether the verification body or certification body has found the submitted application or report to be free of material misstatements, and whether the application or report is in conformance with the requirements of this subarticle. For every qualified positive validation or verification statement, the verification body or certification body must explain the nonconformances contained within the application or report, and must cite the section(s) in this subarticle that corresponds to the nonconformance and why the nonconformances do not result in a material misstatement. For every adverse validation or verification statement, the verification body or certification body must explain all nonconformances or material misstatements leading to the adverse validation or verification statement and must cite the sections in this subarticle that correspond to the nonconformance and material misstatements.

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

1. The lead verifier must attest in the validation or verification statement, in writing, to the Executive Officer as follows:

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

2. The lead verifier independent reviewer who has conducted

the independent review of validation or verification services and findings must attest in the validation or verification statement, in writing, to the Executive Officer 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 [validation or verification] services and findings on behalf of the [verification or certification body] as required by this subarticle and that the findings are true, accurate, and complete."

(4) *Adverse validation or verification statement and petition process.* Prior to the verification body or certification body providing an adverse validation or verification statement for the application or report, to the Executive Officer, the verification body or certification body must notify the responsible entity and the responsible entity must be provided at least 14 days to modify the application or report(s) to correct any material misstatements or nonconformances found by the verification team. The verification body or certification body must provide notice to the Executive Officer of the potential for an adverse validation or verification statement at the same time it notifies the responsible entity, and include a current issues log. The modified application or report and validation or verification statement must be submitted to the Executive Officer before the verification deadline, even if the responsible entity makes a request to the Executive Officer as provided below in section 95501(c)(4)(A).

(A) If the responsible entity and the verification or certification body cannot reach agreement on modifications to the data that result in a positive validation or verification statement the responsible entity may petition the Executive Officer before the validation or verification deadline and before the validation or verification statement is submitted to make a final decision as to the verifiability of the submitted application or report. At the same time that the responsible entity petitions the Executive Officer, the responsible entity must submit all information it believes is necessary for the Executive Officer to make a final decision.

(B) The Executive Officer shall make a final decision no later than October 31 following the submission of a petition pursuant to section 95501(c)(4)(A). If at any point the Executive Officer requests information from the verification body or certification body, or the responsible entity, the information must be submitted to the Executive Officer within ten days. The Executive Officer will notify responsible entity and the verification body or certification body of its determination.

(d) Upon provision of a validation or verification statement to the Executive Officer, the reported data must be considered final. No changes may be made to the application or report as submitted to the Executive Officer, and all validation or verification requirements of this subarticle be considered complete except in the circumstance specified in section 95501(e).

(e) If the Executive Officer finds a high level of conflict of interest existed between a verification body and a reporting entity, an error is identified, or an application or report that received a positive or qualified positive verification statement fails an Executive Officer audit, the Executive Officer may set aside the positive or qualified positive verification statement issued by the verification body, and require the reporting entity to have the report re-verified by a different verification body or certification system within 90 days. In instances where an error to a report is identified and determined by the Executive Officer to not affect the application or report, 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 responsible entity must provide the data used to generate the application or report including all data available to a verifier in the conduct of validation or verification services, within 14 days.

(g) Upon request by the Executive Officer, the verification body or certification body must provide the Executive Officer the validation or verification report given to the responsible entity, as well as the sampling plan, contracts for validation or verification services, and any other supporting documents and calculations, within 14 days.

(h) Upon written notification by the Executive Officer, the verification body or certification body must make itself and its personnel available for an Executive Officer 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).

Section 95502 describes the accreditation process for verification bodies and lead verifiers who plan to provide LCFS verification services. The accreditation process is modeled after the Mandatory Greenhouse Gas Regulation (MRR) in that verification bodies and lead verifiers need to be accredited prior to conducting verification services. In addition to the MRR requirements, the LCFS is requiring verification bodies demonstrate their understanding of the regulation by submitting templates for risk assessment, sampling, and log of issues for entity types and report types.

**§95502. Accreditation Requirements for Verification Bodies and Lead Verifiers, and Competency Requirements for Verifiers.**

(a) Verification bodies and lead verifiers that will provide validation or verification services under the LCFS regulation must adhere to the accreditation requirements set forth in MRR sections 95132(b) and 95132(d) through (e), except 95132(b)(1)(C), 95132(b)(1)(E), 95132(b)(1)(G), 95132(b)(2), 95132(b)(3), and 95132(b)(5)

(b) The Executive Officer may issue accreditation to verification bodies and lead verifiers that meet the requirements specified in this section.

(1) *Verification Body Accreditation Application.* In addition to the requirements specified in MRR section 95132(b)(1), the applicant must submit the following additional information to the Executive Officer:

(A) Documentation that the proposed verification body maintains professional liability insurance, as defined in 31 CFR 50.5(q). Verifiers must use insurance providers that possess a financial strength rating in the top four categories from either Standard & Poor's or Moody's, (i.e., AAA, AA, A or BBB for Standard & Poor's and Aaa, Aa, A, or Baa for Moody's). Verification bodies must disclose the level of professional liability insurance they possess when entering into contracts to provide validation or verification services.

(B) Demonstration that it has procedures or policies to support staff technical training as it relates to validation or verification. This training must include CARB's verifier training curriculum and be provided by a verification body or verification body applicant to its employees and subcontractors that participate on verification teams. Participation of individual verifiers, including verifiers that are not acting as lead verifiers, must be documented.

(C) The verification body's templates for risk assessment, sampling, and log of issues for the entity types and report types the verification body intends to verify, as specified in section 95500. To maintain accreditation, templates must be updated and submitted annually to include regulatory amendments, published guidance, and corrective action implementation to address Executive Officer findings of nonconformance, if applicable.

(2) *Lead Verifier Accreditation Application.* To apply for accreditation as a lead verifier, the applicant must submit documentation to the Executive Officer that provides the evidence that the applicant meets the criteria in 95502(c) at the time of the verification training examination.

(c) *Verifier Competency Requirements.* To perform LCFS verifications, verifiers must be associated with an Executive Officer accredited verification body and meet the following requirements:

(1) Evidence demonstrating the minimum education background required to act as a verifier for CARB. Minimum education background means that the applicant has either:

(A) A bachelors level college degree or equivalent in engineering, science, technology, business, statistics, mathematics, environmental policy, economics, or financial auditing; or

(B) Evidence demonstrating the completion of significant and relevant work experience or other personal development activities that have provided the applicant with the communication, technical and analytical skills necessary to conduct verification.

(2) Evidence demonstrating sufficient workplace experience to act as a verifier, including evidence that the applicant verifier has a minimum of two years of full-time work experience in a professional role involved in emissions data management, emissions technology, emissions inventories, environmental auditing, life cycle analysis, transportation fuel production auditing, or other technical skills necessary to conduct verification.

(3) To act as a lead verifier, in addition to the qualifications in section 95502(c)(1)-(2),

(A) the verifier must have participated on attestation engagement services teams for the U.S. EPA RFS program, or

(B) the verifier must have participated on QAP services teams for the U.S. EPA RFS program, or

(C) the verifier must have acted as an Executive Officer accredited lead verifier under MRR or the Cap-and-Trade Regulation, or

(D) the verifier must have acted as an LCFS verifier for two years, or

(E) the verifier must have worked as a project manager or lead person for no less than four years.

(4) To act as a lead verifier for validation of Fuel Pathway Applications (CI) or verification of Fuel Pathway Reports (CI) as specified in section 95500(a) and 95500(b), in addition to the qualifications in section 95502(c)(1)-

(3),the verifier must have experience in alternative fuel production technology and process engineering.

(5) To act as a lead verifier for verification of Quarterly Fuel Transactions Reports submitted by producers and importers of gasoline or diesel, quarterly Crude Oil Reports, and Project Reports as specified in section 95500, in addition to the qualifications in section 95502(c)(1)-(3), the verifier must be accredited as an oil and gas systems specialist pursuant to MRR section 95131(a)(2).

(6) Nothing in this section shall be construed as preventing the Executive Officer from requesting additional information or documentation from a verifier or affiliated verification body to demonstrate that the verifier meets the competency requirements set forth here, or from seeking additional information from other persons or entities regarding the verifier's fitness for qualification.

(7) The Executive Officer must be notified of verifier staffing changes.

(d) *Executive Officer Accreditation.* Verification bodies and lead verifiers seeking for accreditation by the Executive Officer must adhere to the accreditation requirements set forth in MRR section 95132(c), which is hereby incorporated by reference.

Except as otherwise specifically provided:

(1) Wherever "section 95102(a)" is referenced, "section 95181" must be substituted.

(2) Whenever "January 1, 2012" is referenced, "January 1, 2019" must be substituted.

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).

Verifier impartiality is required for confidence in data quality assurance.

Section 95503 specifies conflict of interest provisions for verification bodies and verifiers contracted to perform LCFS validations and verifications. This section includes a list of activities where potential for conflict of interest is high and LCFS verifications would be prohibited. Certification bodies would also be prohibited from providing LCFS verification services when their activities are considered high for potential conflict of interest. This section also specifies criteria for low and medium potential conflict of interest and monitoring of conflict of interest situations.

## §95503. Conflict of Interest Requirements for Verification Bodies and Verifiers

(a) The conflict of interest provisions of this section shall apply to verification bodies and lead verifiers accredited by the Executive Officer, and other verification team members accredited by the Executive Officer to perform validation or verification services for responsible entities. Any individual person or company that is hired by responsible entity to contract with a verification body on behalf of the responsible entity is subject to the conflict of interest assessment in this subarticle. In such instances, the verification body must assess the potential conflict of interest between itself and the contracting entity as well as between itself and the responsible entity, and must also address the potential conflict of interest between the contracting entity and the responsible entity, including a written assessment provided and signed by the contracting entity.

"Member" for the purposes of this section means any employee or subcontractor of the verification body or related entities. "Related Entity" for the purposes of this section means any direct parent company, direct subsidiary, or sister company.

(b) If any of the following occurred after January 1, 2016, it must be disclosed to the Executive Officer with a description of actions the verification body has taken to avoid, neutralize, or mitigate any ongoing potential for conflict of interest.

The potential for a conflict of interest must be deemed high if any of the following occurred during the specified look-back period. The specified look-back period to assess whether the potential for a conflict of interest must be deemed high is three years in 2019 and 2020 and five years after 2020.

(1) The verification body and responsible entity share any management staff or board of directors membership, or any of the senior management staff of the responsible entity have been employed by the verification body, or vice versa; 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 entity any of the following services:

(A) Designing, developing, implementing, reviewing, or maintaining an information or data management system for data submitted pursuant to this subarticle or MRR unless the review was part of providing validation or verification services pursuant to U.S. EPA RFS or EU RED;

(B) Developing CI or fuel transaction data or other greenhouse gas-related engineering analysis that includes facility specific information;

(C) Designing or providing consultative engineering or technical services in the development and construction of a fuel production facility; or energy efficiency, renewable power, or other projects which explicitly identify greenhouse gas reductions as a benefit;

(D) 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 and reported to the Executive Officer.

(E) Preparing or producing LCFS fuel pathway application or LCFS reporting manuals, handbooks, or procedures specifically for the responsible entity;

(F) Directly managing any health, environment or safety functions for the responsible entity;

(G) Any service related to development of information systems, including providing accounting software or consulting on the development of environmental management systems, unless those systems will not be part of the validation or verification process;

(H) Verification services that are not conducted in accordance with, or substantially equivalent to, section 95503 requirements, unless the systems and data reviewed during those services, as well as the result of those services, will not be part of the validation or verification process.

(I) Reporting pursuant to this subarticle, or uploading data for the Executive Officer, on behalf of the responsible entity;

(J) Owning, buying, selling, trading, or retiring LCFS credits, RINs, or credits in any carbon market;

(K) Dealing in or being a promoter of credits on behalf of [or] the responsible entity.

(L) Appraisal services of carbon or GHG liabilities or assets;

(M) Brokering in, advising on, or assisting in any way in carbon or greenhouse gas-related markets;

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

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

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

(Q) Any internal audit service that has been outsourced by the responsible entity that relates to the responsible entity's internal accounting controls, financial systems or financial statements, unless the result of those services will not be part of the verification or validation process;

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

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

(T) Any legal services;

(U) Expert services to the responsible entity, a trade or membership group to which the responsible entity belongs, or a legal representative for the purpose of advocating the responsible entity's interests in litigation or in a regulatory or administrative proceeding or investigation.

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

The potential for conflict of interest shall be deemed to be high when any member of the responsible entity provides any type of monetary or non-

monetary incentive to a member of the verification body to influence validation or verification documentation or findings.

(4) The potential for a conflict of interest shall also be deemed to be high where any member of the verification body or verification team has provided verification services for the responsible entity except within the time periods in which the responsible entity is allowed to use the same verification body or team members as specified in section 95500(g).

(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 95503(b); and

(2) Any services provided by any member of the verification body or verification team to the responsible entity, within the l look-back period specified in section 95503(b), are valued at less than 20 percent of the fee for the proposed verification services. Any verification conducted in accordance with, or substantially equivalent to, section 95503 provided by the verification body or verification team outside the jurisdiction of the Executive Officer is excluded from this financial assessment but must be disclosed to the Executive Officer in accordance with section 95503(e).

(3) Non-CARB verification services are deemed to be low risk if those services are conducted in accordance with, or substantially equivalent to, section 95503, including, but not limited to, third-party certification of environmental management system under ISO 14001, energy management system under 50001 standards, or certification systems recognized by other governmental agencies, including the European Commission.

(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 95503(b) and 95503(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 members of the responsible.

(1) If a verification body identifies a medium potential for conflict of interest and intends to provide verification services for the responsible entity, the verification body shall submit, in addition to the submittal requirements specified in section 95503(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) The Executive Officer shall evaluate the conflict of interest mitigation plan and determine whether verification services may proceed pursuant to section 95503(e).

(e) Conflict of Interest Submittal Requirements for Accredited Verification Bodies. Verification bodies accredited by the Executive Officer to perform validation or verification services must adhere to the conflict of interest submittal, determinations, and monitoring requirements in MRR section 95133(e) through (g), except section 95133(f)(3).

Except as otherwise specifically provided:

(1) Wherever the term "reporting entity" is used, the term "entity responsible for validation or verification" shall be substituted.

(2) Whenever the term "emissions data report" is used, the term "reports specified in section 95500" shall be substituted.

(3) Whenever the term "verification services" is used, the term "verification or validation services" shall be substituted.

(4) Wherever "section 95133" is referenced, "section 95503" shall be substituted.

(5) When potential for a conflict of interest is deemed to be low, as specified in section 95503(c), the verification body must submit its self-assessment to the Executive Officer, except the Executive Officer authorization to perform verification services as specified in MRR sections 95133(e)(1) and 95133(f)(3) is not required prior to performing LCFS verification services.

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).

LCFS fuel pathway holders selling fuel in European and California markets requested that CARB seek to leverage auditing activities and administrative functions provided by certain international biofuel certification systems in which they participate. Stakeholders provided feedback that allowing selected certification systems to provide LCFS services would help ensure a smooth transition for program implementation in 2019, help ensure sufficient qualified verifiers, and integrate related auditing activities.

Section 95504 describes how certification systems can demonstrate their qualifications to add LCFS requirements to their certification systems. Where, CARB would oversee effectiveness of certification systems through screening applications, requiring annual updates to system requirements consistent with LCFs program updates, auditing the certification system's oversight program, and directly witnessing a subset of LCFS verifications performed by cooperating certification bodies. Selection would expire after 3 years and a new application would be required. A performance review would inform the Executive Officer's decision whether to select the certification system for another 3 years.

Please note, staff is still evaluating whether to use the certification system and certification body model.

## § 95504. Selection of Certification Systems and Requirements for Certification Bodies.

Entities responsible for verification may elect to hire an Executive Officer accredited verification body or hire a certification body that participates in a certification system recognized by the Executive Officer.

Entities responsible for verification that also participate in a certification system recognized by an Executive Order pursuant to this section may also include LCFS validation and verification services in the scope of work of its certification body. Certification systems that meet the selection criteria specified in section 95504(a) may apply to the Executive Officer according to the procedure in section 95504(b) to offer LCFS validation and verification services as part of the certification system. Certification systems must demonstrate that the participating certification bodies meet the minimum requirements in section 95504(c) to provide LCFS validation and verification services according to section 95501.

(a) *Selection Criteria for Certification Systems.*

(1) The certification system must demonstrate recognition by the European Commission as published in the Official Journal of the European Union to provide services under the European Union Renewable Energy Directive

(EU RED) to demonstrate competency in adding fuels regulations to its certification requirements.

(2) The certification system must demonstrate that requirements that are additional to the requirements of this subarticle are vetted via a multi-stakeholder process to mitigate potential stakeholder bias.

(3) The certification system must publish procedures, guidance, certificates and audit report summaries on its website to demonstrate transparency.

(4) The certification system must maintain an effective auditor training program to ensure auditor competency.

(5) The certification system must maintain an effective oversight program over the participating certification bodies to assure consistency and quality of verifications.

(6) The certification system must include an effective grievance mechanism to ensure that problems are resolved.

(7) The certification system must include sanction mechanisms for participating fuel production facility operators, importers, feedstock suppliers, and certification bodies to ensure conformance with its system requirements. In addition, the Executive Officer will independently investigate entities responsible for verification and enforce the requirements of this subarticle.

(8) The certification system must demonstrate capabilities to perform full supply chain certification from point of origin to fuel production facility to importer.

(9) The certification system must demonstrate that policies and mechanisms are in place to monitor and prevent conflicts of interest between members of the system, audited entities, and members of the certification bodies, consistent with ISO 17065:2012 Conformity assessment -- Requirements for bodies certifying products, processes and services.

(10) The certification system must include the following:

(A) A demonstration that it can achieve traceability via chain of custody records for feedstock and finished fuel as required by this regulation.

(B) A demonstration that they can achieve traceability using a full material balance of feedstock and finished fuel to assure proper characterization of feedstock or fuel attributes.

(C) A demonstration that its certification standard includes review of compliance with applicable regional, national and international laws.

(D) A demonstration that certification bodies including verification services pursuant to this subarticle are accredited to perform certification services by an independent third-party accreditation body who is a member of the International Accreditation Forum (IAF) or the International Social and Environmental Accreditation and Labelling (ISEAL) Alliance to perform certification services.

(b) *Certification System Application.* To apply for Executive Officer selection of certification systems to perform LCFS verifications, the applicant must submit the following information to the Executive Officer.

(1) General information on the certification system, including:

(A) The name of the certification system and the facilities and other locations that may be providing LCFS verification services, to include address, telephone number, and e-mail address;

(B) A description of other non-LCFS services the certification system performs or intends to perform; and

(C) A list of certification bodies that may be cooperating with certification systems to conduct LCFS verifications.

(2) A demonstration that the certification system has met the selection criteria specified in section 95504(a) and that the listed certification bodies have met the requirements in 95504(c).

(3) A list of the certification bodies participating with the certification system to conduct LCFS verifications as specified in section 95501. The list of certification bodies shall include a description of the fuel(s) they intend to verify.

(4) Identification of services provided by the certification system, the industries that the system serves, and the locations where those services are provided.

(5) A detailed organizational chart that illustrates the governance structure, including the certification system, its management structure, and any related entities.

(6) A list of any judicial proceedings, enforcement actions, or administrative actions filed against the system or certification body within the previous 5 years with an explanation as to the nature of the proceedings.

(7) Disclosure of funding structure, to include fees paid by Members, Certification Bodies, and System Users including entities requiring verification services as specified in section 95501.

(8) A demonstration that the activities of the certification system and certification bodies are not deemed to be high for potential conflict of interest as specified in section 95504(g).

(9) The certification system must provide its templates for risk assessment, sampling, and log of issues for the entity types and report types that the certification system intends to include, as specified in section 95500. Templates must be updated and submitted annually to the Executive Officer to include amendments to this subarticle, guidance published by the Executive Officer, and corrective action implementation to address the Executive Officer's findings of nonconformance, if applicable.

(c) *Requirements for Certification Bodies.* Certification bodies contracting with certification systems selected by the Executive Officer to provide LCFS validation or verification services under this regulation must meet the requirements specified in this section. Certification bodies conducting LCFS validation and verification services must comply with validation and verification services set forth in section 95501.

(1) The certification body must demonstrate fuels auditing experience.

(2) The certification body must demonstrate that conflict of interest policies and impartiality provisions are in conformance with the certification system's requirements, including eliminating high potential for conflict of interest in section 95503(b).

(3) The certification body must maintain professional liability insurance as specified in section 95502(b)(1).

(4) The certification body must demonstrate effective procedures to address nonconformances received during review by accreditation bodies or certification systems, including root cause analyses, corrective action planning, and management review of implementation effectiveness.

(5) The certification body must demonstrate that its procedures are consistent with the following international standards: ISO 14064-3:year Specification with guidance for the validation and verification of greenhouse gas assertions), 14065:year Greenhouse gases – Requirements for

greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition or 17065:year Conformity assessment – Requirements for bodies certifying products, processes and services and 14066:year Competence requirements for greenhouse gas validation teams and verification teams.

(d) Nothing in sections 95504(a)-(c) shall be construed as preventing the Executive Officer from requesting additional information or documentation from an applicant after Executive Officer selection of the certification system or certification body meeting minimum requirements, set forth here, or from seeking additional information from other persons or entities regarding the applicant's fitness for qualification.

(e) The Executive Order for certification system approval is valid for a period of three years, whereupon the applicant may apply again as a certification system if the applicant has not been subject to Executive Officer enforcement action under this article. All Executive Officer approved requirements applicable at the time of application must be met for the certification system approval to be renewed by the Executive Officer.

(f) *Modification, Suspension, or Revocation of an Executive Order Approving a Certification System.* The Executive Officer may review and, for good cause, including any violation of this subarticle or any similar action in an analogous GHG system, modify, suspend, or revoke an Executive Order allowing the certification system to offer LCFS validation and verification services.

(1) During suspension or revocation proceedings, the certification system may not continue to provide verification services.

(2) Within five working days of suspension or revocation of an Executive Order, a certification system must notify all entities contracting LCFS verification services, or for whom it has included LCFS verification services within the past 6 months of its suspension of the Executive Order.

(3) A selected certification system may request to voluntarily withdraw its selection by providing a written notice to the Executive Officer requesting such withdrawal.

(g) *Certification Bodies Subcontracting.* The following requirements must apply to any certification body that elects to subcontract a portion of LCFS verification services.

(1) The certification body must assume full responsibility for LCFS verification services performed by subcontractor verifiers.

(2) A verifier acting as a subcontractor to a certification body must not further subcontract or outsource LCFS verification services.

(h) *Conflict of Interest Assessment.* As specified in section 95504(b)(8), the certification system applying for selection by the Executive Officer to include LCFS validation and verification services must ensure its activities and the activities of cooperating certification bodies are not deemed to be high conflict of interest as specified in section 95503(b).

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).