Handout 2

Fuel Pathways and Physical Transport Mode Demonstration

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

Subarticle 7. Low Carbon Fuel Standard

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§ 95488. Obtaining and Using Fuel Pathways. [from 95486. Determination of Carbon Intensity Values, page 53]

NOTE - Color Key:
[???]: Fill in when known
(a): Section renumbering may be needed

(a) *Applicability*. The requirements set forth in this section shall apply to all fuel providers that apply for LCFS fuel pathway certifications on or after the effective date of this regulation order. Fuel pathways that were certified prior to that effective date under the provisions of the previous LCFS regulation order, and pathways registered prior to that effective date under the terms of the voluntary LCFS Biofuel Producers Registration Program, shall not be affected by the requirements in this section unless the applicant chooses to reapply under these provisions. Those prior certifications or registrations remain subject to all terms under which they were approved. Fuel pathway applications that have been deemed complete but not certified on the effective date of this regulation order will continue to be processed under the terms of the previous regulation order.

(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 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 Section [**??**]. Tier 1 includes, but is not limited to, the following conventionally produced fuels:

(A) Starch- and sugar-based ethanol;

(B) Biodiesel;

(C) Renewable Diesel; and

(D) Natural Gas.

(2) Tier 2 innovative fuels. 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;

(C) Hydrogen;

(D) Drop-in fuels (renewable hydrocarbons); and

(E) 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, the following:

a. Biogas or biomethane;

b. Waste or residual biomass, as defined in Section [***??***]; and

c. Renewable electricity from a dedicated (non-grid) form of generation, such as wind turbines and photovoltaic arrays.

2. Carbon capture and sequestration; and

3. Production process innovations that significantly improve production efficiency.

(F) Electricity from the public grid used as a transportation fuel.

(3) *Fuels with Indeterminate Carbon Intensities*.

(A) A regulated party who has purchased a gasoline- or diesel-substitute fuel, but is unable to determine the carbon intensity of that fuel may petition the Executive Officer to use a default carbon

intensity value. The Executive Officer may grant a regulated party permission to use a default value only if the regulated party demonstrates that the use of Methods 1 and 2 are not available for the volume of fuel and that the fuel cannot be sold outside of California. The term "unable to be determined" is defined, for purposes of this provision, as follows:

1. The production facility cannot be identified, or

2. The production facility is known, but no carbon intensity value for the production facility is posted pursuant to section [***Former***] 95486(f)(2)(B), and the production facility has not received a pathway carbon intensity through the Method 2A or 2B process.

(B) Pursuant to Paragraph (A) above, the Executive Officer may grant regulated parties permission to use the following carbon intensities for gasoline- and diesel-substitute fuels respectively:

1. For gasoline substitute fuels, the CARBOB carbon intensity value from Table 6 in section [***???***]

2. For diesel substitute fuels, the ULSD carbon intensity value from Table 7 in section [***???***]

(c) *Program Structure*

Fuel pathway applicants must determine whether the pathways for which they are applying fall into Tier 1 or into Tier 2, and convey that determination to the Executive Officer by completing the electronic New Pathway Request Form, available through the LCFS Reporting Tool web portal (http://www.arb.ca.gov/fuels/lcfs/reportingtool/reportingtool.htm). The Executive Officer will evaluate that declaration and either approve or reverse it. Once the Executive Officer has notified the applicant of the results of the tier placement evaluation, application processing will proceed as follows.

(1) Tier 1 applicants must calculate their pathway carbon intensities using the calculator specified in Section (***??***) and submit the results, along with the supporting documentation specified in subdivision (***??***), to the Executive Officer for processing and verification. 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). Newly certified Tier 1 pathways will automatically generate a fuel pathway record in the LCFS Reporting Tool. If the Executive Officer cannot verify the applicant's

pathway carbon intensity, he or she will notify the applicant in writing and provide the opportunity to revise and resubmit the application.

(2) Tier 2 applicants may seek a pathway under either the Method 1 or Method 2 process.

(A) *Method 1:* Applicants may apply for a pathway listed in the Lookup Tables (Tables ***?*** and ***?***) if the Lookup Table contains a reference pathway that closely corresponds with the applicant's pathway, as set forth in Section ***??***.

(B) *Method 2:* If the Lookup Tables (Tables ***?*** and ***?***) do not contain a reference pathway that closely corresponds to the applicant's pathway, 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 Section ***??***, the applicant may use either Method 2A or Method 2B to establish a producer-specific pathway. The following sections set forth the conditions under which the Method 2A and Method 2B application processes shall be used:

1. Method 2A: Applicants shall use Method 2A if a Lookup Table reference pathway meeting the requirements set forth in Section ***??*** exists, and 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 ***??***. A Method 2A pathway CI shall be calculated using as a baseline the inputs that were used to calculate the reference pathway's CI, and one or more clearly-identified changes to those inputs.

2. Method 2B: Applicants shall use Method 2B if no reference pathway exists in the Lookup Tables (Tables ***?*** and ***?***). Method 2B pathways are not subject to the substantiality requirements set forth in Section ***??***.

(d) *Obtaining and Using Fuel Pathways: Specific Requirements and Procedures.*

(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 electronic New Pathway Request Form, available through the LCFS Alternative Fuel Producer web portal (http://www.arb.ca.gov/fuels/lcfs/reportingtool/reportingtool.htm). The New Pathway Request Form contains the following fields. All that apply are required.

(A) 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 LCFS Reporting Tool 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 LCFS Reporting Tool 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. Phone number

4. Mobile phone number

5. Facsimile number

6. Email address

7. Web site URL

(K) Pathway Tier (Tier 1 or 2). The applicant must declare whether the proposed fuel pathway falls under the Tier1 or Tier2 provisions of this regulation (Section ***??***). 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 either the Method 1 (Section ***??***), Method 2A (Section ***??***), or Method 2B (Section ***??***) provisions of this regulation. Methods 1, 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. For purposes of this regulation, a reference pathway is defined as the pathway from the Lookup Tables (Tables ***??*** and ***??***, Section ***??***) to which the proposed Method 2A pathway most closely corresponds, as specified in Section ***??***. Method 2A

pathways must improve upon the reference pathway CI by an amount specified in the substantiality requirements section of this regulation (Section ***??***). The following reference pathway information from Tables ***??*** and ***??*** must be supplied:

1. Fuel pathway Identification code;

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

3. Direct carbon intensity;

4. Land use change or other indirect carbon intensity; and

5. Total pathway carbon intensity;

(N) For Method 1 applications, the Lookup Table pathway for which the applicant is applying must be identified using the following information

1. Fuel pathway Identification code;

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

3. Direct carbon intensity;

4. Land use change or other indirect carbon intensity; 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. Land use or other indirect CI

4. Total CI

5. Brief pathway description

6. Annual volume of fuel produced under proposed pathway

7. If plant is not currently at full capacity, when is full capacity expected?

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) *Submission of an Electronically Signed LCFS Producer Legal Responsibility Form.* Once a New Pathway Request Form has been submitted, a record for the proposed fuel pathway will be created in the LCFS Reporting Tool. 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 LCFS Alternative Fuel Producer's web portal, the LCFS Fuel Producer Legal Responsibility form. All fields on the form must be completed and the form electronically signed by a primary contact person with signatory authority for the legal entity that operates the fuel production facility. The legal responsibility form requires the pathway applicant to attest that the fuel that will be reported under the newly certified pathway will conform with the fuel described in the Tier 1 or Tier 2 application in 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. 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; and

6. Full life cycle carbon intensity, which must be no higher than the carbon intensity specified in the Tier 1 or Tier 2 application.

(3) *Tier 1 pathways*. Once an applicant has, as set forth in Section 95488(c)(1), above, 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 of this regulation, the applicant will submit the following information:

(A) A CA-GREET 2.0 model with the Tier 1 calculator interface completed. CA-GREET 2.0 can be downloaded from the LCFS web portal (http://www.arb.ca.gov/fuels/lcfs/lcfs.htm). The Tier 1 calculator interface requires the applicant to enter information on feedstock transport, fuel production energy use, electrical generation energy mixes, and finished fuel transport.

(B) Invoices covering a period of no less than two years for all forms of energy consumed in the fuel production process. The period covered shall be the most recent two-year period of relatively typical operation. Receipts shall be submitted in electronic form. Each set of invoices (natural gas, electricity, coal, etc.) shall be accompanied by an Excel spreadsheet summarizing the invoices. Every invoice submitted shall appear as a record in the summary. Each record shall, at a minimum, specify in a separate column the period covered by the purchase, the quantity of energy purchased during that period, the invoice amount, and any special information that applies to that record (the special information column need not be populated for every record).

(C) An independent, third-party engineering report describing the fuel production facility. Independent, third-party engineering reports submitted to and required by the U. S. Environmental Protection Agency under the RFS2 program, required pursuant to 40 CFR 80.1450, will satisfy this requirement.

(4) *Tier 2 pathways*. An applicant may apply for a Tier 2 pathway using either Method 1 or Method 2, as set forth in this section

(A) A regulated party for CARBOB, gasoline, or diesel fuel must use Method 1, as set forth in the following sections, to determine the carbon intensity of each fuel or blendstock for which it is responsible ("regulated party's fuel").

(B) *Method 1 Pathways*. An applicant may apply for a Tier 2 fuel pathway using Method 1 if the Carbon Intensity Lookup Tables contain fuel pathways that closely correspond to the regulated party's fuel pathways. A regulated party's pathway corresponds closely with a Lookup Table pathway when it is consistent with Lookup Table pathway in all the following areas:

1. Feedstocks used to produce the fuel.

2. Fuel and feedstock production technology.

3. Regions in which feedstocks and finished fuel are produced.

4. The modes used to transport feedstocks and finished fuel and the transport distances involved.

5. The types and amounts of thermal and electrical energy consumed in both feedstock and finished fuel production. This applies both to the energy consumed in the production process, but also to the upstream energy consumed (e.g., fuels used to generate electricity; energy consumed to produce natural gas, etc.).

6. The CI of the regulated party's product must be lower than or equal to the Lookup Table pathway CI. If the Executive Officer determines that the regulated party's product has an actual CI that is likely to be higher than the Lookup Table pathway CI, the regulated party shall prepare a Method 2B application for a pathway-specific CI.

(C) A regulated party's choice of carbon intensity value under Method 1 in either (4)(A) or (4)(B) above is subject in all cases to Executive Officer approval, as specified in this provision.

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 or blendstock, the Executive Officer shall choose a carbon intensity value, in the Carbon Intensity Lookup Tables for the fuel or blendstock, which the Executive Officer determines is the one that most closely corresponds to the pathway for that fuel or blendstock.

2. If the Executive Officer has reason to believe that the Carbon Intensity Lookup Table does not contain a fuel pathway that closely corresponds with the regulated party's fuel pathway, as specified in (4)(B), above, the regulated party will not be allowed to use Method 1

3. The Executive Officer shall provide the rationale for his/her determination to the regulated party in writing within 10 business days of the determination. The regulated party shall be responsible for reconciling any deficits, in accordance with section 95485, that were incurred as a result of its initial choice of carbon intensity values. In determining whether a carbon intensity value that is different

than the one chosen by the regulated party is more appropriate, the Executive Officer may consider any information submitted by the regulated party in support of its choice of carbon intensity value.

(D) Method 1 Lookup Tables

1. To generate carbon intensity values, the Executive Officer uses the California-modified GREET (CA-GREET) model version 2.0 (***Date***), which is incorporated herein by reference, and a land-use change (LUC) modifier (when applicable). The CA-GREET model is available for downloading on ARB's website at http://www.arb.ca.gov/fuels/lcfs/lcfs.htm. CA-GREET, or other model determined by the Executive Officer to be at least equivalent to the CA GREET, version 2.0., shall be used by the Executive Officer to generate carbon intensity values.

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

   The Carbon-Intensity Lookup Tables, shown below, specify the carbon intensity values for the enumerated fuel pathways that are described in the following supporting documents, all of which are incorporated herein by reference:

   a. Stationary Source Division, Air Resources Board (February 27, 2009, v.2.1), "Detailed California-Modified GREET Pathway for California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB) from Average Crude Refined in California," Pathway CBOB001;

   b. Supplement Version 2.0 (September 12, 2012) to Stationary Source Division, Air Resources Board (February 27, 2009, v.2.1), "Detailed

CaliforniaModified GREET Pathway for California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB) from Average Crude Refined in California;"

c. Stationary Source Division, Air Resources Board (February 27, 2009, v.2.1), "Detailed California-Modified GREET Pathway for California Reformulated Gasoline (CaRFG)";

d. Supplement Version 2.0 (September 12, 2012) to Stationary Source Division, Air Resources Board (February 27, 2009, v.2.1), "Detailed California Modified GREET Pathway for California Reformulated Gasoline (CaRFG);"

e. Stationary Source Division, Air Resources Board (February 28, 2009, v.2.1), "Detailed California-Modified GREET Pathway for Ultra Low Sulfur Diesel (ULSD) from Average Crude Refined in California," Pathway ULSD001;

f. Supplement Version 2.0 (September 12, 2012) to Stationary Source Division, Air Resources Board (February 28, 2009, v.2.1), "Detailed California-Modified GREET Pathway for Ultra Low Sulfur Diesel (ULSD) from Average Crude Refined in California;"

g. Stationary Source Division, Air Resources Board (February 27, 2009, v.2.1), "Detailed California-Modified GREET Pathway for Corn Ethanol," Pathways ETHC001, ETHC002, ETHC003, ETHC004, ETHC005, ETHC006, ETHC007, ETHC008, ETHC009, ETHC0010, ETHC0011, ETHC0012, ETHC013;

h. Stationary Source Division, Air Resources Board (February 28, 2009, v.2.1), "Detailed California-Modified GREET Pathway for Compressed Natural Gas (CNG) from North American Natural Gas," Pathways CNG001, CNG002;

i. Stationary Source Division, Air Resources Board (February 28, 2009, v.2.1), "Detailed California-Modified GREET Pathway for Compressed Natural Gas (CNG) from Landfill Gas," Pathway CNG003;

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

k. Stationary Source Division, Air Resources Board (February 27, 2009, v.2.1), "Detailed California-Modified GREET Pathway for Compressed Gaseous Hydrogen from North American Natural Gas," Pathways HYG001, HYG002, HYG003, HYG004, HYG005;

l. Stationary Source Division, Air Resources Board (September 23, 2009, v.2.0), "Detailed California-Modified GREET Pathways for Liquefied Natural Gas (LNG) from North American and Remote Natural Gas Sources," Pathways LNG001, LNG002, LNG003, LNG 004, LNG005;

m. Stationary Source Division, Air Resources Board (September 23, 2009, v.2.0), "Detailed California-Modified GREET Pathway for Liquefied Natural Gas (LNG) from Landfill Gas (LFG)," Pathways LNG006, LNG007;

n. Stationary Source Division, Air Resources Board (July 20, 2009, v.1.0), "Detailed California-Modified GREET Pathway for Compressed Natural Gas (CNG) from Dairy Digester Biogas," Pathway CNG004;

o. Stationary Source Division, Air Resources Board (September 23, 2009, v.2.0), "Detailed California-Modified GREET Pathway for Liquefied Natural Gas (LNG) from Dairy Digester Biogas," Pathways LNG008, LNG009;

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

q. Stationary Source Division, Air Resources Board (September 23, 2009, v.2.0), "Detailed California-Modified GREET Pathway for CoProcessed

Renewable Diesel from Tallow (U.S. Sourced)," Pathways RNWD002, RNWD003;

r. Stationary Source Division, Air Resources Board (September 23, 2009, v.2.3), "Detailed California-Modified GREET Pathways for Brazilian Sugarcane Ethanol: Average Brazilian Ethanol, With Mechanized Harvesting and Electricity Co-product Credit, With Electricity Co-product Credit," Pathways ETHS001, ETHS002, ETHS003;

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

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

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

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

Table [???]. Carbon Intensity Lookup Table for Gasoline and Fuels that Substitute for Gasoline

Fuel	Pathway Identifier	Pathway Description	Carbon Intensity Values (gCO_2e/MJ)		
			Direct Emissions	Land Use or Other Indirect Effect	Total
CARBOB	CBOB001	CARBOB - based on the average crude oil supplied to California refineries and average California refinery efficiencies	99.18	0	99.18
Compressed Natural Gas	CNG003	Landfill gas (biomethane) cleaned up to pipeline quality NG; compressed in CA	11.26	0	11.26
	CNG004	Dairy Digester Biogas to CNG	13.45	0	13.45
	CNG005	Biomethane produced from the high-solids (greater than 15 percent total solids) anaerobic digestion of food and green wastes; compressed in CA	-15.29	0	-15.29
	CNG006	North American landfill gas to pipeline-quality biomethane; delivered via pipeline; compressed in CA	33.02	0	33.02
Liquefied Natural Gas	LNG006	Landfill Gas (biomethane) to LNG liquefied in CA using liquefaction with 80% efficiency	26.31	0	26.31
	LNG007	Landfill Gas (biomethane) to LNG liquefied in CA using liquefaction with 90% efficiency	15.56	0	15.56
	LNG008	Dairy Digester Biogas to LNG liquefied in CA using liquefaction with 80% efficiency	28.53	0	28.53
	LNG009	Dairy Digester Biogas to LNG liquefied in CA using liquefaction with 90% efficiency	17.78	0	17.78
Electricity	ELC001	California average electricity mix	124.10	0	124.10
	ELC002	California marginal electricity mix of natural gas and renewable energy sources	104.71	0	104.71
Hydrogen	HYGN001	Compressed H2 from central reforming of NG (includes liquefaction and re-gasification steps)	142.20	0	142.20

Fuel	Pathway Identifier	Pathway Description	Carbon Intensity Values (gCO_2e/MJ)		
			Direct Emissions	Land Use or Other Indirect Effect	Total
	HYGN002	Liquid H2 from central reforming of NG	133.00	0	133.00
	HYGN003	Compressed H2 from central reforming of NG (no liquefaction and re-gasification steps)	98.80	0	98.80
	HYGN004	Compressed H2 from on-site reforming of NG	98.30	0	98.30
	HYGN005	Compressed H2 from on-site reforming with renewable feedstocks	76.10	0	76.10

Table [???]. Carbon Intensity Lookup Table for Diesel and Fuels that Substitute for Diesel

Fuel	Pathway Identifier	Pathway Description	Carbon Intensity Values (gCO_2e/MJ)		
			Direct Emissions	Land Use or Other Indirect Effect	Total
Diesel	ULSD001	ULSD - based on the average crude oil supplied to California refineries and average California refinery efficiencies	98.03	0	98.03
Compressed Natural Gas	CNG003	Landfill gas (biomethane) cleaned up to pipeline quality NG; compressed in CA	11.26	0	11.26
	CNG004	Dairy Digester Biogas to CNG	13.45	0	13.45
	CNG005	Biomethane produced from the high-solids (greater than 15 percent total solids) anaerobic digestion of food and green wastes; compressed in CA	-15.29	0	-15.29
	CNG006	North American landfill gas to pipeline-quality biomethane; delivered via pipeline; compressed in CA	33.02	0	33.02
Liquefied Natural Gas	LNG006	Landfill Gas (biomethane) to LNG liquefied in CA using liquefaction with 80% efficiency	26.31	0	26.31

Fuel	Pathway Identifier	Pathway Description	Carbon Intensity Values (gCO_2e/MJ)		
			Direct Emissions	Land Use or Other Indirect Effect	Total
	LNG007	Landfill Gas (biomethane) to LNG liquefied in CA using liquefaction with 90% efficiency	15.56	0	15.56
	LNG008	Dairy Digester Biogas to LNG liquefied in CA using liquefaction with 80% efficiency	28.53	0	28.53
	LNG009	Dairy Digester Biogas to LNG liquefied in CA using liquefaction with 90% efficiency	17.78	0	17.78
Electricity	ELC001	California average electricity mix	124.10	0	124.10
	ELC002	California marginal electricity mix of natural gas and renewable energy sources	104.71	0	104. 71
Hydrogen	HYGN001	Compressed H_2 from central reforming of NG (includes liquefaction and re-gasification steps)	142.20	0	142.20
	HYGN002	Liquid H_2 from central reforming of NG	133.00	0	133.00
	HYGN003	Compressed H_2 from central reforming of NG (no liquefaction and re-gasification steps)	98.80	0	98.80
	HYGN004	Compressed H_2 from on-site reforming of NG	98.30	0	98.30
	HYGN005	Compressed H_2 from on-site reforming with renewable feedstocks	76.10	0	76.10

Table [??]. Carbon Intensity Lookup Table for Crude Oil Production and Transport

[***Insert the crude lookup table***]

(E) *Lookup-Table Carbon-Intensity Values for CARBOB and Diesel Fuel*. Deficit calculations to be used for a regulated party's CARBOB or diesel fuel are specified in section 95486(b)(2)(A)1. Requirements for adding incremental emission increases associated with an increase in the carbon intensity of crude oil to a regulated party's compliance obligation are specified in section 95486(b)(2)(A)2. The credit calculation for CARBOB or diesel derived from petroleum feedstock which is produced using

innovative methods such as carbon capture and sequestration (CCS) is specified in section 95489(c) [old 95486(b)(2)(A)4].

1. *Deficit Calculation for CARBOB or Diesel Fuel*. A regulated party for CARBOB or diesel fuel must calculate separately the base deficit and incremental deficit for each fuel or blendstock derived from petroleum feedstock as specified in this provision.

2. Base Deficit Calculation.

(F) *Method 2A and 2B Pathways Applications: General Requirements*

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 has been demonstrated to the Executive Officer as being at least as valid and robust as Method 1 for calculating the fuel's carbon intensity. Proof that a proposed method is scientifically defensible may rely on, but is not limited to, publication of the proposed Method 2A or 2B in a major, well-established and peer-reviewed scientific journal (e.g., Science, Nature, Journal of the Air and Waste Management Association, Proceedings of the National Academies of Science).

2. *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 full life cycle (well-to-wheels) carbon intensity of the fuel under the proposed Method 2A pathway is

i. For proposed Method 2A pathways with carbon intensities greater than 20 gCO_2e/MJ, 5.5 percent lower than the reference pathway well-to-wheels carbon intensity; or

ii. For proposed Method 2A pathways with carbon intensities of 20 gCO_2e/MJ or less, 1 gCO_2e/MJ less than the reference pathway well-to-wheels carbon intensity

b. The applicant can and expects to provide in California more than 10 million gasoline gallon equivalents per year (1,156 MJ) of the regulated fuel. This requirement applies to a transportation fuel only if the total amount of the fuel sold in California from all providers of that fuel exceeds 10 million gasoline gallon equivalents per year.

3. *Disclosure of Trade Secret Information and Use of Application Material in the LRT:* An applicant that submits any information or documentation in support of a proposed Method 2A or 2B application must include a written statement clearly showing that the regulated party understands and agrees to the following:

a. All information not identified in 95486(e)(3)(C) as trade secrets are subject to public disclosure pursuant to title 17, CCR, sections 91000-91022 and the California Public Records Act (Government Code § 6250 et seq.); and

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

4. *Designation of Confidential Business Information:* All documents (including spreadsheets and other items not in a standard document format) that contain confidential business information (CBI) must prominently display the phrase "Contains Confidential Business Information" above the main document title and in a running header. Additionally, a separate, redacted version of such documents must also be submitted. The redacted versions must be approved by the applicant for posting to a public LCFS web site. Within redacted documents, specific redactions must be replaced with the phrase "Confidential business information has been deleted." This phrase must

be displayed clearly and prominently wherever CBI has been redacted.

5. *Submittal File Formats:* All applications and supporting documents except for the transmittal letter described in (C)(12) below shall be in electronic form unless the Executive Officer has approved or requested in writing another submission format. Documents such as receipts, which are available in paper form only, shall be scanned into an electronic file for submittal. The transmittal letter described in (C)(12) below shall be submitted as an original copy on paper and signed in blue ink

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. The applicant shall submit to the Executive Officer all supporting data, calculations, and other documentation, including but not limited to, flow diagrams, flow rates, CA-GREET calculations, equipment description, maps, and other information that the Executive Officer determines is necessary to verify the proposed fuel pathway and how the carbon intensity value proposed for that pathway was derived;

   b. All relevant data, calculations, and other documentation in (A) above must be uploaded through the LCFS Reporting Tool web portal (URL);

   c. The applicant must specifically identify all information submitted pursuant to this provision that is a trade secret; "trade secret" has the same meaning as defined in Government Code section 6254.7; and

   d. The applicant must not convert spreadsheets, including CA-GREET spreadsheets into other file formats, or otherwise take steps to prevent the Executive Officer from examining the contents of all cells in those spreadsheets.

   e. 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.

f. The applicant must demonstrate that the fuel that will be produced under the proposed pathway is covered by an approved Multimedia Analysis, as required under [***former***] section 95487.

g. The applicant must demonstrate that the fuel that will be produced under the proposed pathway is not exempt from the LCFS under [***former***] section 95480.1(c)

(G) *Specific Method 2A and 2B Fuel Pathway Application Requirements*. Any person may apply to the Executive Officer for use of a transportation fuel pathway under the LCFS. Unless otherwise noted, all applicants for a certified Method 2A or 2B fuel pathway shall submit the items in the list below.

1. A lifecycle analysis report, which includes the following information:

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

i. A description of the full well-to-wheels fuel life cycle, including the geographic locations where each primary step in the fuel life cycle occurs. This description shall identify where the system boundary was established for the purposes of performing the life cycle analysis on the proposed pathway, and shall be accompanied by a schematic flow chart illustrating the generalized fuel life cycle. The system boundary shall be shown in the schematic.

ii. A description of all feedstocks used, including their points of origination, all feedstock transportation distances and modes, and all pre-processing to which feedstocks are subject. For fuels utilizing agricultural crops for feedstocks, the description shall include the agricultural practices used to produce those crops. This discussion shall cover energy and chemical use, typical crop yields, feedstock harvesting, transport modes and distances, storage, and pre-processing (such as drying or oil extraction). If feedstock transportation

modes and distances and/or agricultural practices are unknown, the application shall so state, and shall use CA-GREET 1.8b defaults for these parameters in the analysis.

iii. A description of all non-feedstock inputs used in the fuel production process. These include, but are not limited to enzymes, fertilizers, chemicals (including agricultural chemicals), and microorganisms.

iv. A description of the transportation modes used throughout the fuel life cycle. This discussion must identify origins and destinations (at least on a regional basis), cargo carrying capacities, fuel shares, and the distances traveled in each case.

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

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

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

viii. A description of all co-products, byproducts, and waste products associated with production of the proposed fuel.

b. A description of the formal life cycle analysis performed on the proposed pathway. This description must provide clear, detailed information on the energy consumed, the greenhouse gas emissions generated, and the final pathway carbon intensity, as calculated using the approved version of CA-GREET. Important

intermediate values in each of the primary life cycle analytical categories shall be shown. Those categories are upstream processes, feedstock and fuel production, feedstock and finished fuel transport, and the use of the fuel in a vehicle. It shall include, at a minimum:

i. A table showing all CA-GREET input values used in the analysis. The worksheet, row, and column locations of the cells into which these inputs were entered shall be identified. The locations of unchanged default values should not be identified. In combination with the inputs identified in item b.ii. below, this table shall enable the Executive Officer to enter the reported inputs into a copy of CA-GREET 1.8b and to replicate the carbon intensity results reported in the application.

ii. A detailed discussion of all modifications other than those covered by item b.i. above, made to the CA-GREET spreadsheet. This discussion shall allow the Executive Officer to duplicate all such modifications and, in combination with the inputs identified in item b.i. above, replicate the carbon intensity results reported in the application.

iii. Documentation of all non-default CA-GREET values used in the carbon intensity calculation process.

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

2. A list of references covering all information sources used in the preparation of the life cycle analysis. All reference citations in the lifecycle analysis report shall include 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, and 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 website was last visited.

3. Invoices covering a period of no less than two years for all forms of energy consumed in the fuel production process. The period covered shall be the most recent two-year period of relatively typical operation. Each set of invoices (natural gas, electricity, coal, etc.) shall be accompanied by an Excel spreadsheet summarizing the invoices. Every invoice submitted shall appear as a record in the summary. Each record shall, at a minimum, specify in a separate column the period covered by the purchase, the quantity of energy purchased during that period, the invoice amount, and any special information that applies to that record (the special information column need not be populated for every record).

4. If transportation distances other than the CA-GREET defaults are used in the life cycle analysis of the proposed fuel pathway, receipts covering a period of no less than two years for all affected hauling trips shall be provided. Each set of invoices shall be accompanied by an Excel spreadsheet summarizing the invoices. Every invoice submitted shall appear as a record in the summary. Each record shall, at a minimum, specify in a separate column the period covered by the purchase, the number of trips purchased, the distance covered by each trip, the invoice amount, and any special information that applies to that record (the special information column need not be populated for every record).

5. A copy of the CA-GREET spreadsheet prepared for the life cycle analysis of the proposed fuel pathway. All Method 2A and 2B pathway carbon intensities must be calculated using CA-GREET, version 1.8b unless the Executive Officer has approved the use of a method that is at least equivalent to the calculation methodology used by CA-GREET version 1.8b.

6. One or more process flow diagrams that, singly or collectively, depict the complete fuel production process. Each piece of equipment or stream appearing on the process flow diagram shall include data on its energy and materials balance, along with any other critical information such as operating temperature, pH, rated capacity, etc.

7. All applicable air pollution control permits issued by the local air pollution control jurisdiction. If air pollution control permits are not required, the life cycle analysis report shall fully explain why this requirement does not exist.

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

9. A copy of the federal Renewable Fuel Standard 2 (RFS2) Third Party Engineering Review Report required pursuant to 40 CFR 80.1450, if available. If the RFS2 engineering report is not available, the Life Cycle Analysis Report should explain why it is not available.

10. Copies of the federal Renewable Fuel Standard 2 (RFS2) Fuel Producer Co-products Report as required pursuant to 40 CFR 80.1451(b)(1)(ii)(M)-(N). The period covered by the Co-products Report submittal to the Executive Officer shall coincide with the period covered by the energy receipts submitted under Paragraph 3, above.

11. Audited statements or reports showing annual finished fuel sales. The period covered by the finished fuel sales reports submittal to the Executive Office shall coincide with the period covered by the energy receipts submitted under Paragraph 3, above.

12. A signed transmittal letter from the applicant attesting to the veracity of the information in the application packet and declaring that the information submitted accurately represents the long-term, steady state operation of the fuel production process described in the application packet. The transmittal letter shall:

    a. Be the original copy. Photocopies, scanned electronic copies, facsimiles, and other non-original documents will not be accepted.

b. Be on company letterhead.

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

d. Be from the applicant and not from an entity representing the applicant (such as a consultant or legal counsel).

(6) *Certification Process*

(A) Within 45 calendar days of receipt of an application designated by the applicant as ready for formal evaluation, the Executive Officer shall advise the applicant in writing either that the application is complete or incomplete. If it is deemed incomplete, the Executive Officer shall identify which requirements of section 95488 [***Former***] 95486(f)(3)(C) above have not been met. The applicant will be permitted to submit additional information to meet the requirements of 95488 [***Former***] section 95486(f)(3)(C). If the applicant is unable to achieve a complete application within 180 calendar days of the Executive Officer's receipt of the application, the application shall be denied on that basis, and the applicant will be informed in writing.

(B) Once the Executive Officer has deemed an application to have met all requirements for certification, it will be posted to the Method 2A/2B website for public comment. Comments will be accepted for 10 calendar days following the date on which the application was posted. Only comments related to potential factual or methodological errors may be considered. The Executive Officer will forward to the applicant all comments identifying potential factual or methodological errors. Within 30 days, the applicant shall either make revisions to its application and submit those revisions to the Executive Officer, or submit a detailed written response to the Executive Officer explaining why no revisions are necessary. The response submitted by the applicant must be approved by the Executive Officer before the application can be certified.

(C) If public comments are received pursuant to 95488(c)(4)(G) above, evaluation of all comments and responses will begin the first business day after the Executive Officer receives responding materials submitted by the applicant, as provided in section 95488(c)(4)(H). If no public comments are received pursuant to

95488(c)(4)(H), the application will be certified on the business day following close of the public comment period.

(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. Between the time that request is issued, and the time the requested information is submitted, no evaluation time, as described in (F), above, will be deemed to have elapsed.

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

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

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

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

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

i. Starting with a copy of CA-GREET that had not previously been used for calculations associated with the proposed pathway, the Executive Officer will enter all the inputs reported by the applicant under section 95488 [***Former***] 95486(f)(3)(C)2.b.i.

ii. The Executive Officer will then apply all CA-GREET modifications reported by the applicant under section 95488 [***Former***]95486(f)(3)(C)2.b.ii.

iii. If the Executive Officer is able to duplicate the applicant's CA-GREET results, the Executive Officer

will proceed to (I)2. below. If the Executive Officer is not able to duplicate the applicant's CA-GREET results, the application shall be denied.

2. Using the energy purchase data obtained from receipts submitted by the applicant and the fuel production accounting data submitted by the applicant, the Executive Officer will verify the energy consumption inputs to the CA GREET carbon intensity calculations that were submitted by the applicant pursuant to [***Former***]95486(C)(2)b.i. If the Executive Officer is unable to verify the applicant's CA-GREET energy consumption inputs by calculating them from energy receipt data and fuel production volumes, the application shall be denied.

(G) If the Executive Officer finds that an application meets the requirements of subsection [***Former***] 95486(f)(3)(I) and determines that the applicant has satisfactorily made the demonstrations identified in subsection 95486(c), then the Executive Officer will certify in writing the fuel pathway for use by the applicant and shall describe all limitations and operational conditions to which the new pathway will be subject. The Executive Officer shall act on a complete application within the time periods specified in paragraph (F), above.

(H) If the Executive Officer at any time determines that a certified fuel pathway does not meet the operational conditions specified in the written certified notification issued by the Executive Officer as specified in paragraph (J), above, the Executive Officer shall revoke or modify the certification as is necessary to assure that no fuel that does not meet all applicable operational conditions, including the specified fuel life cycle carbon intensity, is produced for sale in California under that pathway. The Executive Officer shall not revoke or modify a prior certification order without first affording the applicant an opportunity for a hearing in accordance with title 17, CCR, section 60040, et seq.

(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.

2. the quantity of all forms of energy consumed to produce the fuel covered in section 1. above. Thermal energy shall be reported in units of BTUs per gallon and electrical energy in units of kilowatt-hours per gallon of fuel produced. All receipts for the purchase of this fuel shall be maintained.

3. The quantities of all products co-produced with the fuel covered by certified LCFS pathway. Records shall be kept on only those co-products which are included in the calculation of the pathway carbon intensity. Copies of the federal Renewable Fuel Standard 2 Fuel Producer Co-products Report described in [***Former***] 95486(f)(3)(C)10 will meet this requirement. For co products for which copies of the federal Renewable Fuel Standard 2 Fuel Producer Co-products Report are not available, sales receipts and bills of lading for the sale of all such co-products must be retained. If the amount of co-product produced exceeds the amount sold by five percent or more, full documentation of the fate of the unsold fractions shall be maintained.

B. These records shall be submitted to the Executive Officer within 20 days of a written request received from the Executive Officer or his/her designee.

(e~~2~~) *Evidence of Physical ~~Pathway~~Transport Mode*. **[from 95484(c)(2), page 45]** A regulated party may not generate credits pursuant to section ~~95485~~ 95486 unless it has demonstrated or provided a demonstration to the Executive Officer that a physical ~~pathway~~ transport mode exists, for each of the transportation fuels and blendstocks for which it is responsible under the LCFS regulation, and that each physical ~~pathway~~ transport mode has been approved by the Executive Officer pursuant to this section ~~95484(c)(2)~~. Electricity used as a transportation fuel is exempt from this requirement. For purposes of this provision, "demonstrated" and "demonstration" includes any combination of either (i) a showing by the regulated party using its own documentation; or (ii) a showing by the regulated party that incorporates by reference documentation voluntarily submitted by another regulated party or a non-regulated party fuel producer, provided the documentation applies to and accurately represents the regulated party's transportation fuel or blendstock;

"Physical ~~pathway~~Transport Mode" means the applicable combination of actual fuel delivery methods, such as truck routes, rail lines, gas/liquid pipelines, electricity transmission lines, and any other fuel distribution methods, through

which the regulated party reasonably expects the fuel to be transported under contract from the entity that generated or produced the fuel, to any intermediate entities, and ending at the fuel blender, producer, importer, or provider in California.

The Executive Officer shall not approve a physical ~~pathway~~ transport mode demonstration unless the demonstration meets the following requirements:

(~~A~~1) *Initial Demonstration of Delivery Methods.* The regulated party must provide an initial demonstration of the delivery methods comprising the physical ~~pathway~~ transport mode for each of the regulated party's fuels. The initial demonstration must include documentation in sufficient detail for the Executive Officer to verify the existence of the physical ~~pathway's~~ transport mode's delivery methods.

The documentation must include a map(s) that shows the truck/rail lines or routes, pipelines, transmission lines, and other delivery methods (segments) that, together, comprise the physical ~~pathway~~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 physical ~~pathway~~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.

(~~B~~2) *Initial Demonstration of Fuel Introduced Into the Physical ~~Pathway~~Transport Mode.*
For each blendstock or alternative fuel for which LCFS credit is being claimed, the regulated party must provide evidence showing that a specific volume of that blendstock or fuel was introduced by its provider into the physical ~~pathway~~ transport mode identified in section ???? [formerly 95484(c)(2)(A)]. The evidence may include, but is not limited to, a written purchase contract or transfer document for the volume of blendstock or alternative fuel that was introduced or otherwise delivered into the physical ~~pathway~~transport mode.

For biogas injected into an interstate pipeline for transportation to California, the applicant must submit statements from the biogas suppliers and marketers that attest to the fact that the volume of biogas being supplied to California as a transportation fuel is not being claimed for other California or federal programs that would result in double counting of emission reductions.

(~~C~~3) *Initial Demonstration of Fuel Removed From the Physical ~~Pathway~~Transport Mode.* For each specific volume of blendstock or alternative fuel identified in section 95484(c)(2)(B), the regulated party

must provide evidence showing that the same volume of blendstock or fuel was removed from the physical ~~pathway~~ transport mode in California by the regulated party and provided for transportation use in California. The evidence may include, but is not limited to, a written sales contract or transfer document for the volume of blendstock or alternative fuel that was removed from or otherwise extracted out of the physical ~~pathway~~ transport mode in California.

(~~D~~4) *Subsequent Demonstration of Physical ~~Pathway~~Transport Mode.* Once the Executive Officer has approved the initial demonstrations specified in section 95484(c)(2)(A) through (C), the regulated party does not need to resubmit the demonstrations for Executive Officer approval in any subsequent year, unless there is a material change to any of the information submitted under section 95484(c)(2)(A) through (C).

"Material change" means any change to the initially submitted information involving a change in the basic mode of transport for the fuel. For example, if an approved ~~pathway~~ 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.

If there is a material change to an approved physical ~~pathway~~transport mode, the regulated party must notify the Executive Officer in writing within 30 business days after the material change has occurred, and the approved physical ~~pathway~~ 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 physical ~~pathway~~ transport mode has become invalid must submit for Executive Officer approval a new initial demonstration~~s~~, pursuant to section 95484(c)(2)(A) through (C), which includes the material change(s) to the physical ~~pathway~~transport mode.

~~(f) *Approval and Posting by Executive Officer.*~~

(~~E~~5) *Submittal and Review of and Final Action on Submitted Demonstrations* **[from 95484(c)(2)(E), page 47]**

~~1.~~(A) The regulated party may not receive credit for any fuel or blendstock until the Executive Officer has approved the regulated party's submitted physical ~~pathway~~ transport mode demonstration pursuant to section 95484(c)(2)(A) through (C). Upon receiving Executive Officer approval of a physical ~~pathway~~transport mode, the regulated party may claim LCFS credits based on that pathway that are calculated retroactive to the date when the regulated party's use of the ~~pathway~~ transport mode began but no earlier than ~~January 1, 2011~~the two quarters immediately preceding the

regulated party's request for retroactive credits based on this provision.

~~2.~~(B) Within 15 business days of receipt of a physical ~~pathway~~ transport mode demonstration, the Executive Officer shall determine if the physical ~~pathway~~ 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 section 95484(c)(2)(A) through (C). Once the Executive Officer deems the demonstrations to be complete, the Executive Officer shall, within 15 business days, take final action to either approve or disapprove a physical ~~pathway~~ transport mode demonstration and notify the regulated party of the final action.

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

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