

# Pre-Rulemaking Public Meeting to Discuss 2018 LCFS Preliminary Draft Regulatory Amendment Text



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INDUSTRIAL STRATEGIES DIVISION  
TRANSPORTATION FUELS BRANCH  
SEPTEMBER 22, 2017  
SACRAMENTO, CA

## Meeting Participation

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Posted materials can be found on the LCFS Meetings webpage

- [https://www.arb.ca.gov/fuels/lcfs/lcfs\\_meetings/lcfs\\_meetings.htm](https://www.arb.ca.gov/fuels/lcfs/lcfs_meetings/lcfs_meetings.htm)

Watch and listen via the Webcast:

- <https://video.calepa.ca.gov/>

Ask questions or provide feedback during the working meeting

- Email [coastalrm@calepa.ca.gov](mailto:coastalrm@calepa.ca.gov).
- Participate via conference call
  - Toll Free: 800-369-2064
  - Toll/Outside the United States: 1-415-228-4861
  - Participant Code: 8329648

Feedback should be sent to:

- [LCFSworkshop@arb.ca.gov](mailto:LCFSworkshop@arb.ca.gov) by **October 6, 2017**

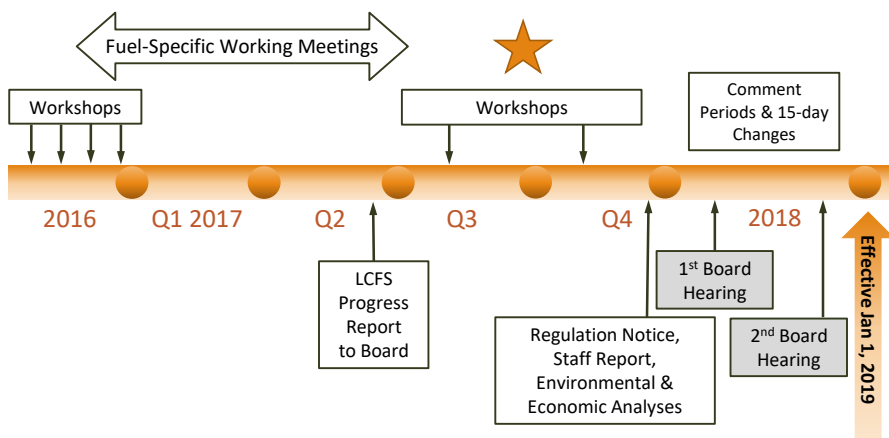


## Agenda Outline

- Rulemaking Timeline
- Review Preliminary Draft Regulatory Text (posted September 15, 2017)
  - §95481. Definitions and Acronyms
  - §95482. Fuels and Regulated Parties
  - §95483 – 95483.2. Fuel Reporting Entities, Opt-in Entities and LCFS Data Management System
  - §95484. Average CI Requirements
  - § 95485. Demonstrating Compliance
  - § 95486. Generating and Calculating Credits and Deficits
  - § 95487. Credit Transactions
  - § 95488 – 95488.9. Fuel Pathways
  - § 95490. Provisions for Fuels Produced Using Carbon Capture and Sequestration.
  - § 95491 – 95491.1. Fuel Transactions and Compliance Reporting, Recordkeeping and Auditing.
  - § 95500 – 95504. Third-Party Verification
- Next Steps
- Open Discussion

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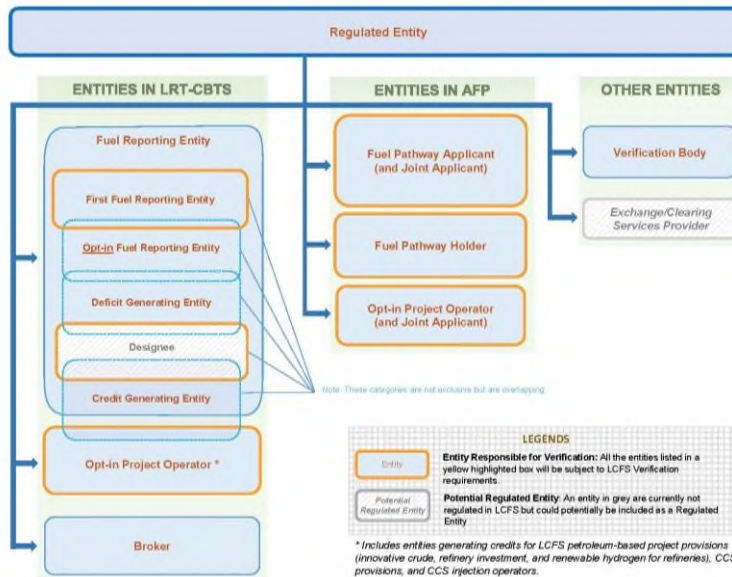
## Rulemaking Timeline



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# 95481: Definitions and Acronyms

## Classification of Entities Subject To LCFS Regulation



## 95482: Fuels Subject to Regulation

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## 95482: Fuels Subject to Regulation

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### 95482(a): Applicability of the Low Carbon Fuel Standard

- Remove fuel blends containing hydrogen
- Add alternative jet fuel and propane

### 95482(b): Credit Generation Opt-In Provision for Specific Alternative Fuels

- Remove hydrogen, hydrogen blend, fossil CNG derived from North American sources
- Add alternative jet fuel and renewable propane



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## 95482: Fuels Subject to Regulation

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### 95482(c): Exemption for Specific Fuels

- Add exemption for conventional jet fuel or aviation gasoline
- Add exemption for conventional CARBOB and diesel used in military tactical vehicles and tactical support equipment

### 95482(d): Exemption for Specific Applications

- Remove exemption for all fuels used in military tactical vehicles and tactical support equipment
- Remove exemption for all fuels used in aircraft



## 95483: Fuel Reporting Entities

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## 95483(e): New EV Categories

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Staff is considering adding new EV category for generating credits

- Electric Transport Refrigeration Units (e-TRU) to increase participation of non-road applications.
- Staff is working with stakeholders to consider other potential EV categories such as electric motorcycles, electric cargo delivery bikes, and neighborhood-scale EVs



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## 95483(f): Fuel Reporting Entities for Hydrogen

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- Opportunity to report and claim credits starts with the business or legal entity that operates the fueling equipment ("hydrogen station operator"), or his/her designee
- The right to report and generate credits may be transferred upstream to the hydrogen producer upon written agreement between the station operator and the producer



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## 95483(g): Fuel Reporting Entities for Alternative Jet Fuel or an Alternative Jet Fuel Blend

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- Alternative jet fuel component: Producer or importer of fuel that is uploaded to aircraft in California has the opportunity to report and claim credits
- Transfer of Alternative Jet Fuel: Transferor remains the credit generating party unless the two parties agree by written contract that the person acquiring ownership will receive the ability to be the credit generating party
- Conventional jet fuel component: Not regulated



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## 95483(h): Fuel Reporting Entity for Propane used as a Transportation Fuel

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- Renewable propane component: Opportunity to report and claim credits starts with the producer or importer
- Transfer of Renewable Propane: Transferor retains the opportunity to generate credits unless the two parties agree by written contract that the person acquiring ownership receives that opportunity
- Fossil propane component: 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



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## 95483(i): Credit or Deficit Generator Status Transfer Period

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- Staff is considering limiting the transfer of credit or deficit generator status from one entity to another to two quarters
- Supports better accounting of credits and deficits attached to the fuel amounts by minimizing cross-year transactions of reported fuel amounts
- Ensure the accuracy of credits and deficits in the program
- Credits generated from the fuel can always be transferred independently in the LRT-CBTS



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## 95483.2: LCFS Data Management System

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Creating clear regulatory requirements for all online systems responsible for LCFS data management and program implementation. Existing systems include:

- **Alternative Fuels Portal (AFP)**
  - Fuel pathway applications
  - Fuel production facility registrations
- **LCFS Reporting Tool and Credit Banking and Transfer System (LRT-CBTS)**
  - Fuels reporting
  - Credit generation, banking, retirement, and transfers
  - Deficit generation and compliance assistance

Staff is considering adding a new portal to facilitate the implementation of LCFS verification program

- **LCFS Verification Portal (LVP):**
  - Provide verifiers access to relevant data in LRT and AFP
  - Submit verification statements



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## 95483.4(c)(3): Fueling Supply Equipment Registrations

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Starting Q1 2017, Fueling Supply Equipment (FSE) registration is required for reporting of:

- Natural Gas, Electricity and Hydrogen
- Will be required for propane

FSE registration requirements:

- Federal Employer Identification Number (FEIN)
- Equipment Name/Address
- Latitude/Longitude
- For Natural Gas: Utility Meter #, Utility Name
- For Electricity: Manufacture Serial #, Manufacture Name
- For Hydrogen: NREL report, Dispenser ID



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## 95484: Average Carbon Intensity Requirements

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## Initial Thinking for Percent CI Reduction for Gasoline, Diesel, and Jet Fuel

Year	Percent Reduction	Year	Percent Reduction
2010	Reporting Year		
2011	0.25%	2021	10.0%
2012	0.5%	2022	10.0%
2013	1.0%	2023	11.0%
2014	1.0%	2024	12.0%
2015	1.0%	2025	13.0%
2016	2.0%	2026	14.0%
2017	3.5%	2027	15.0%
2018	5.0%	2028	16.0%
2019	7.5%	2029	17.0%
2020	10.0%	2030	18.0%

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## 95486: Generating and Calculating Credits and Deficits

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## 95486(a): Buffer Account for CCS and Other LCFS Credits

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Staff is considering proposing the creation of a Buffer Account for LCFS credits to mitigate invalidation risk for credit buyers

Initial thinking is that it would be populated by two sources:

- x% of credits generated from CCS projects as an insurance policy against unintentional reversals from this project type
- All credits from real GHG emission reductions that may not be validly claimed by any entity pursuant to prohibition on retroactive credit claims (*Current LCFS prohibits retroactive claim of credits unless expressly provided elsewhere in the regulation*)



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## 95486(b): Calculation of Credits and Deficits Generated

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- Add energy density for alternative jet fuel and propane to Table 4 (Energy Densities of LCFS Fuels and Blendstocks)
- Add credits generated by alternative jet fuel and opt-in projects when calculating total credits generated in a compliance period
- Add Energy Economy Ratio (EER) values for propane used as both a gasoline and diesel substitute to Table 5 (EER Values for Fuels Used in Light- and Medium-Duty, and Heavy-Duty Applications)



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## 95486(b): Update EERs for EVs

- Staff is considering updating EER values for heavy duty electric vehicles
- Staff is considering adding EER for Electric Transportation Refrigeration Unit (e-TRU)

Categories	Current EER	Proposed EER
Heavy Duty EV Bus	4.2	5.0*
Heavy Duty EV Truck	2.7	
E-TRU	N/A	3.4**

\*Source: <https://www.arb.ca.gov/msprog/octruck/docs/HDBEVefficiency.pdf>

\*\*Source: [http://www.cleanfuture.us/wp-content/uploads/2017/09/EER-for-eTRU-for-CARB-LCFS-Workshop\\_proposed-by-CleanFuture.pdf](http://www.cleanfuture.us/wp-content/uploads/2017/09/EER-for-eTRU-for-CARB-LCFS-Workshop_proposed-by-CleanFuture.pdf)



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## 95486(c): Reconciliation and Credit Generation

- Staff is considering credits be generated on the day after the reporting deadline
- Credits would be generated only for the fuel transactions that are reconciled with business partners
- LCFS regulation requires reported fuel transactions to be reconciled with business partners, wherever applicable, before credits are generated for the reported fuel data
- Eliminate the need for third-party verification of fuel transactions reported downstream of first fuel reporting entity
- Limit the cost and scope of verification program while ensuring high quality of credits



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## 95487: Credit Transactions

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## Exchange Clearing Services

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Staff is discussing the potential participation of entities providing exchange clearing services in the LCFS program

Rationale:

- Exchange based trading of LCFS credits will help further standardize LCFS credit contracts
- Provide hedging options for project financing
- Allows future compliance hedging
- Allow for better price discovery in the LCFS market

Considerations:

- Minimizing buyer liability
- Buffer account
- Who should be allowed to participate and trade LCFS credits on exchanges



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## 95488: Fuel Pathways

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## 95488: Fuel Pathways

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New sections under 95488:

- 95488.1 Fuel Pathway Classifications
- 95488.2 Pathway Registration and Facility Registration
- 95488.3 Calculation of Fuel Pathway Carbon Intensities
- 95488.4 Lookup Table Pathway Application Requirements and Certification Process
- 95488.5 Tier 1 Pathway Application Requirements and Certification Process
- 95488.6 Tier 2 Pathway Application Requirements and Certification Process
- 95488.7 Fuel Pathway Application Requirements Applying to All Classifications
- 95488.8 Special Circumstances for Fuel Pathway Applications
- 95488.9 Maintaining Fuel Pathways



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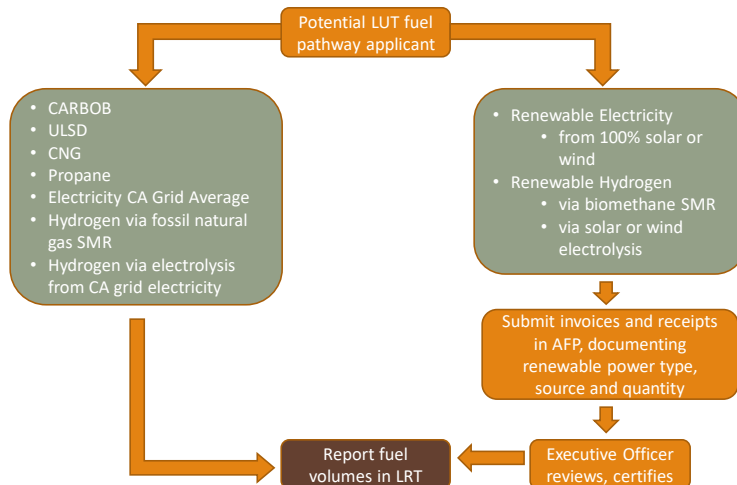
## 95488.4: Updates to Lookup Table Pathways

- Application process (shown on the next slide) is expedited for most Lookup Table pathways
  - Only Lookup Table pathways for renewable electricity and renewable hydrogen would require documentation to validate the type, source and quantity of renewable energy.
- CA Grid Electricity pathway to be updated annually based on CEC's Quarterly Fuel and Energy Report (QFER) data
- Add pathways for renewable electricity, fossil CNG and propane, and hydrogen via electrolysis
- Remove pathways for Bio-CNG from anaerobic digestion of wastewater and food/green waste



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## 95488.4: Lookup Table Pathway Application Process



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## 95488.5: Updates to Tier 1 Pathways

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- Upload Simplified CI Calculator with supplemental documentation
- Certification Process
  - Completeness check
  - Third-party validation
  - Engineering Review
- All site-specific inputs in the Calculators would be reported annually and subject to verification



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## 95488.5: Tier 1 Simplified CI Calculators and Operating Conditions Manuals

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- Simplified CI Calculators replace current CA-GREET Tier 1 model
  - Factors from CA-GREET 3.0 model used to calculate CI
- Manuals will provide specific instructions for filling out each Simplified CI Calculator, as well as calculation methodologies and acceptable units and conversion factors where necessary
  - Manuals will be incorporated by reference
  - Staff is considering including minimum requirements for measurement accuracy; language would be similar to the Mandatory Reporting Regulation (MRR), section 95103(k)



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## 95488.6: Updates to Tier 2 Pathways

- Tier 2 classification eliminates Methods 2A/2B and Lookup Table
- Typically reserved for next-generation innovative fuel producers but conventional pathways may qualify if they meet substantiality requirements in 95488.8(a)
- Application requirements similar to those in current regulation
  - Supporting documentation such as invoices and meter records are only uploaded upon request
- Certification Process
  - Completeness check
  - Third-party validation
  - Engineering review
    - No predetermined set of site-specific inputs; Tier 2 engineering review process will include a step to identify inputs that must be reported annually and verified
  - Public Comment period



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## 95488.7(g): Specified Source Feedstocks

- Fuel pathway applicants using specified source feedstocks must maintain records demonstrating chain of custody along the supply chain to the point of origin
  - The list of specified source feedstocks is given in 95488.7(g)(1)(A):
    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.
  - Recordkeeping requirements for specified source feedstocks are included in 95488.7(g)(1)(B)
- Chain-of-custody evidence is used to demonstrate proper characterization, accurate quantity, and actual pretreatment energy use less than the standard value



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## 95488.8(c): Provisional pathways

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- Provisional pathways may be certified on the basis of three months of commercial operation and can be used to generate credits
- The following conditions have been added:
  - Data submitted in support of a provisional pathway application must be validated during initial certification
  - Provisional pathways are subject to the same verification cycle as all new pathways, dependent on when the provisional pathway is first certified
  - If CI is determined to be higher than originally certified CI, credits are subject to retroactive adjustment for the entire period from initial validation to post-24-month verification



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## 95488.8(e): Design-based Pathways

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- The Executive Officer may choose to review and approve a CI value for an innovative fuel technology on the basis of a fully engineered and designed facility that is not yet in commercial production.
  - The Executive Officer has full authority to certify or reject an application.
- Design-based pathways are not eligible to report fuel volumes to the LRT or generate credits. No validation is required.
- Application requirements would be similar to Tier 2 and must include:
  - LCA report
  - Completed CA-GREET3.0 model
  - Facility plans and specifications, including expected throughput at typical operation while in commercial operation
- Design-based pathways may apply for a provisional pathway certification after a minimum of 3 months commercial production



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## 95488.9(a)(5): Annual Submittal of Fuel Pathway Reports

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- For most certified pathways, annual verification is required using the preceding two calendar years of operational data
- Fuel pathway report must be uploaded annually by March 31
- If the verified CI is determined to be lower than originally certified, the fuel pathway holder may either elect to:
  - Retain the originally certified CI
  - Request to replace previously certified CI with updated verified CI
- If the CI after verification exceeds previously certified CI, the fuel pathway holder is out of compliance and may be subject to credit adjustment and possible enforcement investigations



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## 95488.9(e): Process for Updating Fuel Pathway CIs using CA-GREET3.0

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- Pathways certified under CA-GREET2.0:
  - Remain valid for 2019 data year reporting
  - No longer valid for 2020 data year reporting
  - Operational CI data submitted before 2019 will not be validated or verified
  - Fuel transaction reports for 2019 data year will be verified in 2020
- Pathways certified under CA-GREET3.0:
  - CA-GREET3.0 pathways eligible beginning on Jan 1, 2019
  - Applications must be validated before certification
  - Pathways certified using CA-GREET3.0 would be subject to the verification cycle described in section 95500



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## 95489: Provisions for Petroleum-Based Fuels

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## 95489: Provisions for Petroleum-Based Fuels

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- Revised OPGEE model
- Update Table 9 (CI Lookup Table for Crude Oil Production and Transport) using OPGEE v2.0
  - Update 2010 California Baseline Crude Average CI to 12.31 g/MJ
  - Update Lookup Table CI values using OPGEE2.0 together with the oil field operational data for year 2015
  - Add Lookup Table CI values for new oil fields recently supplied to California
- Update equations used to calculate the three-year rolling average CI values



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## 95489(d): Credits for Producing Crudes using Innovative Methods

- Add two steam quality ranges for solar steam project crediting
- Revise the avoided emissions values using OPGEE2.0

Steam quality	Avoided emissions (gCO <sub>2</sub> e/bbl solar steam)
95% and above	32069
85% to <95%	30191
75% to <85%	28312
65% to <75%	26433
55% to <65%	24554



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## 95489(d): Credits for Producing Crudes using Innovative Methods

- Allow the third-party joint applicant on solar steam and solar/wind electricity projects to opt-in as the credit generator in lieu of the crude oil producer
- Add recordkeeping and reporting requirements for solar or wind electricity projects
- Add recordkeeping and reporting requirements for solar steam projects
- Add verification of reported data to the requirements for credit generation



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## 95489(g): Renewable Hydrogen Refinery Credit Pilot Program

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- Simplify credit calculations for steam methane reforming (SMR) by directly comparing the carbon intensity of fossil natural gas with that of renewable natural gas
- Clarify that all possible renewable hydrogen pathways are eligible, including renewable electrolysis
- Clarify that program is applicable to renewable hydrogen produced on-site at a refinery and hydrogen purchased and used in a refinery
- Staff seeks feedback on the draft calculation methods



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## Other Refinery Provisions

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Eliminate low complexity/low-energy-use refinery specific incremental deficit calculations provision

- Provision expired on January 31, 2016 and no applications received

Refinery Investment Credit Pilot Program (RICPP)

- Stakeholder meeting on September 14 to make the credit calculation project-based, simpler, and more workable
- Discussion of eligible projects
- Incorporation of CCS and require use of CCS protocol
- Currently accepting feedback



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## 95491: Fuel Transactions and Compliance Reporting

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### 95491(d)(1)(B): Clarification on Reporting Fuel Exports

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- Any fuel reported under in the LCFS program if exported out California must be reported as exports in the program
- Exporter is the fuel reporting entity that must report exports in the program
- Staff is providing clarification to clearly establish the entity with responsibility of reporting fuel exports in different scenarios
- Staff is suggesting using default blend percentages and substitute FPCs based on average values from prior year when actual values are not known to the exporter



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## 95491(d)(1)(E): Timing of Book-and-Claim Accounting for Biomethane

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- Biomethane injected into common carrier pipeline in North America can be reported as dispensed bio-CNG, bio-LNG, or bio-L-CNG in California without regards to physical traceability
- Book-and-Claim accounting can only be applied for two subsequent quarters



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## Verification Outline

- Section 95500: Requirements for Validation of Fuel Pathway Applications and Verification of Annual Fuel Pathway Reports, Quarterly Fuel Transactions Reports, Quarterly Crude Oil Reports, and Project Reports
- Section 95501: Requirements for Validation and Verification Services
- Section 95502: Accreditation Requirements for Verification Bodies and Lead Verifiers and Competency Requirements for Verifiers
- Section 95503: Conflict of Interest Requirements for Verification Bodies
- Section 95504: Selection of Certification Systems and Requirements for Certification Bodies

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## 95500: Requirements for Validation of Fuel Pathway Applications and Verification of Annual Fuel Pathway Reports, Quarterly Fuel Transactions Reports, Quarterly Crude Oil Reports, and Project Reports

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## Validation of Fuel Pathway Applications

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### Entities Responsible for Validation

- Fuel pathway applicants and entities generating site-specific CI data

### Validation Frequency

- Prior to pathway certification

### Potential Validation Outcomes

- Positive or qualified positive would result in the application progressing to final evaluation for certification
- Adverse would result in denial of the application by CARB, with opportunity to reapply



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## Verification of Fuel Pathway Reports

### Entities Responsible for Verification (same as for Validation)

- Fuel pathway holders and entities generating site-specific CI data

### Verification Schedule

- Annual verification of operational CI calculation based on prior two calendar years (24 months) of operational data
- Verification statement due August 31 (of the year following the end of the two year period being verified)

An adverse verification statement would result in CARB investigation.



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## Verification of Quarterly Fuel Transactions Reports

### Entities Responsible for Verification

Entities reporting the following transaction types:

- Produced, imported, and exported for all liquid fuels
- Natural gas and propane vehicle fueling
- Hydrogen vehicle fueling for hydrogen via steam methane reformation of pipeline-injected biomethane

### Verification Schedule

- Annual verification of Quarterly Fuel Transactions Reports submitted during the prior calendar year
- Verification statements due August 31

An adverse verification statement would result in CARB investigation.



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## Less Frequent Verifications

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- Alternative liquid fuel production facilities producing fuel resulting in  $\leq 6,000$  credits in a calendar year may qualify for:
  - Triennial verifications of Fuel Pathway Reports (CI), and
  - Triennial verification of Quarterly Fuel Transactions Reports, if also reporting fuel quantities in the LRT
  - Does not apply to entities that are solely importers (would apply to small out-of-state production facilities reporting “production for import”)
- Exporters of liquid fuel quantities resulting in  $\leq 6,000$  credits and  $\leq 6,000$  deficits in a calendar year and that did not produce or import liquid fuels would not require verification (CARB staff would conduct compliance audits)



## Verification of Quarterly Crude Oil Reports

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### Entities Responsible for Verification

- Entities supplying data related to crude oil volumes

### Verification Schedule

- Annual verification of prior calendar year's Quarterly Crude Oil Reports
- Verification statement due April 30

An adverse verification statement would result in CARB investigation and may result in credit adjustment for innovative crude projects that are credited quarterly or delay in crediting for innovative crude projects.



## Verification of Project Reports

### Entities Responsible for Verification

Project operators for:

- Refinery investment project reports
- Renewable hydrogen projects at refineries
- Innovative crude project reports

### Verification Schedule

- Verification following submittal of Project Reports with credit issuance post verification

An adverse verification statement would result in no credit issuance pending an CARB investigation.



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## Summary of Implementation Timing

### Fuel Pathway Applications

- Prior to pathway certification beginning in 2019

### Fuel Pathway Reports and Quarterly Fuel Transactions Reports

- Reporting Deadline: March 31, 2020
- If Fuel Pathway Application submitted on or before June 30, 2019
  - Verification Deadline: August 31, 2020
- If Fuel Pathway Application submitted after June 30, 2019
  - Verification Deadline: August 31, 2021

### Project Reports

- Flexibility for Quarterly or Annual verification
- Credit Issuance: after verification of project reports submitted in 2019 and thereafter

### Verification of Quarterly Crude Oil Reports

- Reporting Deadline: March 31, 2020
- Verification Deadline: April 30, 2020



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## Verification Body Rotation and Report Modifications

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Verification bodies and individual verifiers rotation required after 6 years of LCFS validation and verification services with the same verifiers, with a 3-year break to reset clock

### Report Modifications

- Failure to fix correctable errors results in adverse verification statement
- "Correctable errors" means errors that affect CI data, specified quarterly fuel transactions data, quarterly crude oil data, or project data in the submitted application/report that result from a nonconformance with this regulation. Truncations, rounding, or averaging, where a specific procedure is not prescribed, are not considered errors and therefore do not require correction.
- 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.



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## 95501: Requirements for Validation and Verification Services

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## Requirements for Verification Services

- Applies to Verification Bodies accredited by CARB and Certification Systems selected by CARB and their cooperating Certification Bodies
- CARB will selectively audit entities responsible for validation and verification as well as selectively audit accredited Verification Bodies and selected Certification Systems and their cooperating Certification Bodies
- For purposes of this presentation, when we say 'verification' we are including validation and verification

Please note that staff is still evaluating whether to use the certification system/certification body model.



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## Requirements for Verification Services (Cont.)

### Notice of Verification Services

- Verification bodies must submit COI self assessment to CARB
  - High potential for COI disqualifies VB from conducting LCFS verifications
  - Medium potential for COI requires a mitigation plan and CARB-approval
- Advance notice is required prior to conducting site visit
  - 14 days for VBs and 20 days for CBs
- Verification services cannot begin until the responsible entity attests to the data report

### Verification Plan

- The verification team must develop a verification plan based on the reported data

Please note that staff is still evaluating whether to use the certification system/certification body model.



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## Requirements for Verification Services (Cont.)

### Timing of Verification Services

- Must include: dates of proposed meetings and interviews; dates of proposed site visits; types of proposed documents and data reviews; expected date for completing verification services

### Planning Meetings with Entity Responsible for Verification

- The verification team requests information needed to initiate verification services
- The verification team must create a verification plan prior to site visit

### Site Visits

- At least one verifier on the verification team shall at a minimum make one site visit for validation and verification services



## Examples of Facilities Requiring Annual Site Visits for Verification of Fuel Pathway Reports

Fuel Type	Site Visit to
Ethanol; BD/RD from vegetable oil	Fuel production facility
BD/RD from specified source feedstock	Fuel production facility and subset of specified source feedstock suppliers
Bio-CNG from Landfill	Upgrading facility at landfill + Location of Central Data Management for Fuel Pathway Holders that are not the upgrading facilities
Bio-LNG from Landfill	Upgrading facility at landfill + Liquefaction facility + Location of Central Data Management for fuel pathway holders that are not the upgrading facilities or liquefaction facility

## Examples of Facilities Requiring Annual Site Visits for Verification of other LCFS Reports

Report Type	Site Visit to
Projects	Project location
Quarterly Crude Oil	Entity reporting data
Quarterly Fuel Transactions Reports	Location of Central Data Management required for Verification if fuel producer is not reporting in LRT-CBTS (i.e., Importer)



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## Requirements for Verification Services (Cont.)

### Sampling Plan

- Strategic analysis for document review and interviews to assess the likely nature, scale and complexity of the verification services for a responsible entity and report type
- Must include a qualitative narrative of uncertainty risk assessment
- Must be updated prior to completion of verification services
- Not shared with entity requesting verification services

### Data Checks

- Used to determine the reliability of the submitted data
- The verification team must use professional judgement in the number of data checks required to conclude reasonable assurance that the report is free of material misstatement

### Report Modification

- As a result of data checks by the verification team and prior to completion of the verification statement, the responsible entity must fix all correctable errors that affect the report and submit a revised report to CARB



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## Requirements for Verification Services (Cont.)

### Findings

- To verify that the report is free of material misstatement, the verification team shall make its own calculation of the specified data types submitted substituting the checked data
- To assess conformance with the LCFS, the verification team must review the methods and factors used to develop the report for adherence to the LCFS and identify whether other LCFS requirements are met

### Log of Issues

- The verification team must keep a log of issues identified in the course of verification activities that may affect determinations of material misstatement and nonconformance, whether identified by the verifier, entity responsible for verification, or CARB
- The log of issues must identify the regulatory section related to the nonconformance or potential nonconformance and indicate if the issues were corrected prior to completing the verification
- Any corrections must be documented



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## Reasonable Assurance of No Material Misstatement

A “material misstatement” is any discrepancy, omission or misreporting (or combination) that leads the verifier to believe that the total reported data have errors > +/-5%.

### Fuel Pathways

$$\text{Percent error (CI)} = \sum \frac{[\text{Difference in CI from Discrepancies, Omissions, Misreporting}] \times 100\%}{\text{Reported CI Value}}$$

### Quarterly Fuel Transactions

$$\text{Percent error (transactions)} = \sum \frac{[\text{Discrepancies} + \text{Omissions} + \text{Misreporting}] \times 100\%}{\text{Reported Quarterly Fuel Transaction Quantity for FPC}}$$

### Project Reports (Project-based Crediting)

$$\text{Percent error (project data)} = \sum \frac{[\text{Discrepancies} + \text{Omissions} + \text{Misreporting}] \times 100\%}{\text{Reported GHG emissions reduction or removal}}$$



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## Completion of Verification Services

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### Verification Report

- Issued by the verification body after completion of verification services to the entity requesting verification services

### Adverse Verification Statement and Petition Process

- Prior to the verification body providing an adverse verification statement, the verification body must notify the responsible entity and allow at least 14 days to modify the application/report
- The verification body must provide notice to CARB of the potential for an adverse statement

### Verification Statement

- Issued by the verification body after completion of verification services to the entity requesting verification services and to CARB
- Entity responsible for verification must ensure the verification statement is received by CARB no later than August 31
- Issuance of a verification statement deems the verification complete



## 95502: Accreditation Requirements for Verification Bodies and Competency Requirements for Verifiers

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## Accreditation Requirements – Verification Bodies

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Verification bodies and lead verifiers wishing to provide LCFS verification services must be CARB-accredited

### Verification Body (VB) Accreditation Application

- VB submits application to CARB
- VB discloses staffing plan, professional liability insurance, COI prevention policies
- Professional liability insurance – Top four categories of financial strength from either Standard & Poor's or Moody's
- Procedures and policies to support staff technical training
- Simple process to voluntarily withdraw from CARB's LCFS verification program



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## Accreditation Requirements – Lead Verifiers

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Must demonstrate to CARB that he/she meets the following Verifier Competency Requirements:

- A bachelors level college degree or equivalent in engineering, science, technology, business, statistics, math, environmental policy, economics, or financial auditing or evidence demonstrating significant work experience
- Evidence demonstrating sufficient workplace experience and evidence of 2-years full time work experience in a professional role with emissions data management, emissions technology, emissions inventory, environmental auditing, life cycle analysis, transportation fuel production auditing, or other technical skills
- To act as lead, he/she must demonstrate prior experience in one of the below:
  - LCFS verifier for two years
  - Accredited lead verifier under MRR or Cap-and-Trade Regulation
  - QAP services team for the US EPA RFS program
  - Attestation engagement services team for the US EPA RFS program
  - Worked as a project manager or lead person for > 4 years



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## Accreditation Requirements – Lead Verifiers (Cont.)

In addition to the general lead verifier requirements,

- to act as a **lead verifier for validation of Fuel Pathway Applications (CI) or verification of Fuel Pathway Reports (CI)** the verifier must have **experience in alternative fuel production technology and process engineering**
- to act as a **lead verifier for Quarterly Fuel Transactions Reports** submitted by producers and importers of gasoline or diesel, **quarterly Crude Oil Reports, and Project Reports** the verifier **must be accredited as an oil and gas systems specialist pursuant to MRR section 95131(a)(2)**



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## Key Steps and Considerations for CARB Accreditation of VBs and Lead Verifiers

### MRR section 95132(c) – Key Steps and Considerations

1. CARB determination of application completeness within 90 days of application submittal
2. Applicant then becomes eligible to attend CARB verification training  
Examination:
  - Pass -- greater than 70% (unweighted)
  - Fail --  $\leq 70\%$ ; may retake once
3. CARB grants or withholds accreditation within 45 days following completion of the application and all applicable training and examination requirements
4. Re-accreditation required every 3 years
5. CARB-accredited verification body or lead verifier must notify CARB of any corrective action within 15 working days



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## 95503: Conflict of Interest Requirements for Verification Bodies

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## Conflict of Interest for Verification Bodies

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- COI self-assessment required before conducting verification services
- High and medium COI self-assessment requires Executive Officer approval 10 days prior to verifier conducting verification services
- Look-back period for COI self-assessment:
  - Three years in 2019 and 2020, and
  - Five years after 2020



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## Potential Conflict of Interest Activities

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### High Conflict of Interest Activities [95503(b)(2)(A)-(T)]

- Verifying your own work, consulting
- Financial interest or management conflict
- Client advocacy
- Personal/professional relationship

### Medium Conflict of Interest Activities [95503(c)(1)-(3)]

- Instances of personal or familial relationship between the members of the verification body and management or members of the entity contracting the verification services
- Must demonstrate a mitigation plan

### Low Conflict of Interest Activities [95503(d)(1)-(2)]

- No potential for a high conflict of interest
- Services provided by any member of the verification team are valued at < 20% of the fee for the proposed verification services
- Non-CARB verification services are deemed to be low risk if those services are conducted in accordance with LCFS section 95503, ISO 14001, 5001 standard, or certification systems recognized by other governmental agencies



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## 95504: Selection of Certification Systems and Requirements for Certification Bodies

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Staff is still evaluating whether to use the certification system and certification body model.

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## Selection Criteria for Certification Systems

✓	Demonstrate recognition under the European Union Renewable Energy Directive (EU RED)
✓	Demonstrate that requirements that are additional to the requirements of this subarticle are vetted via a multi-stakeholder process
✓	Publish procedures, guidance, certificates and audit report summaries on its website
✓	Maintain an effective auditor training program
✓	Maintain an effective oversight program over the participating certification bodies
✓	Include an effective grievance mechanism
✓	Include sanction mechanisms for participating fuel production facility operators, importers, feedstock suppliers, and certification bodies
✓	Demonstrate capabilities to perform full supply chain certification from point of origin to fuel production facility to importer
✓	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

Please note that staff is still evaluating whether to use the certification system/certification body model.

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## Selection Criteria for Certification Systems (Cont.)

- A demonstration that it can achieve traceability
  - via chain of custody records for feedstock and finished fuel as required by this regulation
  - using a full material balance of feedstock and finished fuel to assure proper characterization of feedstock or fuel attributes
- A demonstration that its certification standard includes review of compliance with applicable regional, national and international laws
- A demonstration that certification bodies including verification services 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

Please note that staff is still evaluating whether to use the certification system/certification body model.



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## Certification System Application to CARB

- General Information on the Certification System – name, address, contact information
- Demonstration that the system and listed certification bodies have met the criteria in section 95504
- List of participating certification bodies
- Identification of services provided by the certification system
- Organizational chart that illustrates the governance structure – management structure and cooperating organizations
- List of judicial proceedings, enforcement actions, or administrative actions filed against the system or its cooperating bodies within the previous 5 years
- Disclosure of funding structure
- Demonstration that the activities by the system and their cooperating bodies are not considered high COI
- Templates for risk assessment, sampling and log of issues (updated annually)

Please note that staff is still evaluating whether to use the certification system/certification body model.



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## Requirements for Certification Bodies

- Demonstrate fuels auditing experience
- Demonstrate that conflict of interest policies and impartiality provisions are in conformance with selected certification system or CARB provisions specified in section 95503
- 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
- Demonstrate that its procedures are consistent with the following international standards: ISO 14064-3, 14066, and 14065 or 17065
- Provide documentation of liability insurance consistent with US EPA RFS requirements (same as CARB-accredited VBs)

Please note that staff is still evaluating whether to use the certification system/certification body model.



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## Modification, Suspension, or Revocation of a Certification System Executive Order

- Similar to CARB-accredited verification bodies
- During suspension or revocation proceedings, the certification system may not continue to provide verification services
- Within five working days of CARB suspension or revocation a certification system must notify all entities contracting verification services for whom it is providing LCFS verification services, or has provided verification services within the past 6 months of its suspension
- A responsible entity or authorized designee who has been notified by a certification system of a CARB suspended or revoked certification must contract with a different certification system or CARB-approved verification body for the next validation and verification services
- A selected certification system may request to voluntarily withdraw its accreditation by providing a written notice to CARB requesting such withdrawal

Please note that staff is still evaluating whether to use the certification system/certification body model.



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## Certification Body Subcontracting

- Same as required for CARB-accredited verification bodies
- The certification body must assume full responsibility for LCFS verification services performed by subcontractor verifiers
- A verifier acting as a subcontractor to a certification body must not further subcontract or outsource LCFS verification services

Please note that staff is still evaluating whether to use the certification system/certification body model.



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## Next Steps

- Feedback on the draft regulation text posted September 15 is needed by October 6 in order to be considered in the regulatory package.
- Upcoming Meetings:
  - Co-processing workgroup meeting scheduled on October 16, 2017
    - Staff is updating the co-processing discussion paper based on feedback from June 2, 2017 meeting
    - Discuss pathway certification of co-processing in hydrotreaters
  - Further updates to co-processing in 2018:
    - Co-processing fuel pathways will require Tier 2 pathway applications under both current and upcoming regulations. Pathways will be posted for public comment prior to certification.
  - Carbon Capture and Sequestration (CCS) workshop in October
    - Draft CCS protocol to be released prior to workshop
    - Focus of workshop will be on accounting protocol and major provisions of permanence protocol
- Draft Model Updates:
  - Updated Starch/Fiber Ethanol Simplified CI Calculator released at the end of September, 2017
  - Updated BD/RD, Sugar Ethanol and Renewable Natural Gas Simplified CI Calculators expected in October 2017

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# THANK YOU!

Feedback should be sent to  
[LCFSworkshop@arb.ca.gov](mailto:LCFSworkshop@arb.ca.gov)

by October 6, 2017

Posted information from today's working meeting can be found at  
[https://www.arb.ca.gov/fuels/lcfs/lcfs\\_meetings/lcfs\\_meetings.htm](https://www.arb.ca.gov/fuels/lcfs/lcfs_meetings/lcfs_meetings.htm)



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