

Low Carbon Fuel Standard

Potential Regulation Amendments

PUBLIC WORKSHOP – DAY 1

OCTOBER 14, 2020



Workshop Logistics

- Workshop materials and public comment docket available on the LCFS Meetings and Workshops page:
<https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard/lcfs-meetings-and-workshops>
- Written comments may be submitted to the public comment docket
 - Comment docket open Oct 15-Nov 5
- Q&A during the workshop
 - Click the “Raise Hand” button in the gotowebinar control panel to signal that you’d like to ask a question during the Q&A session

Workshop Agenda

Day 1 (October 14)

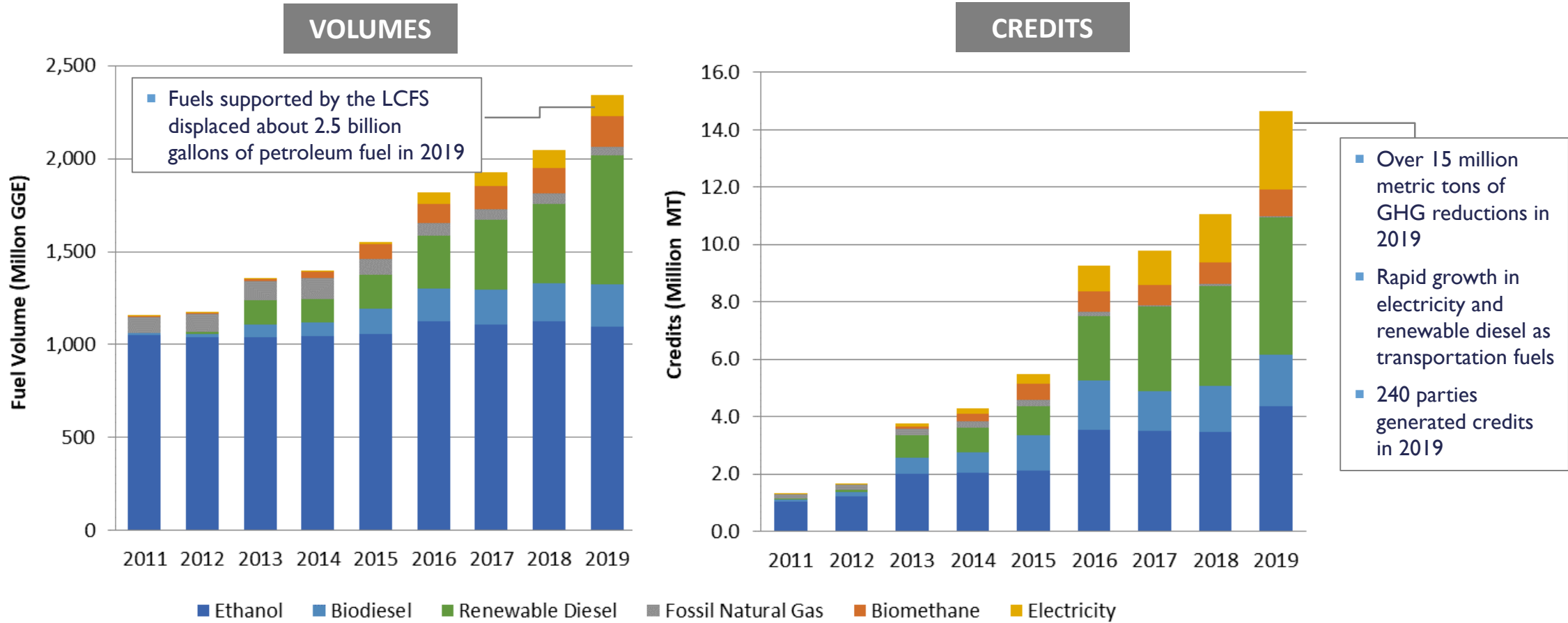
- LCFS implementation updates
- Next LCFS Rulemaking
 - Staff presentation on potential regulation changes for discussion
 - Q&A
- Short break
- Presentation on technical updates to the OPGEE model by Adam Brandt (Stanford University)
 - Q&A

Day 2 (October 15)

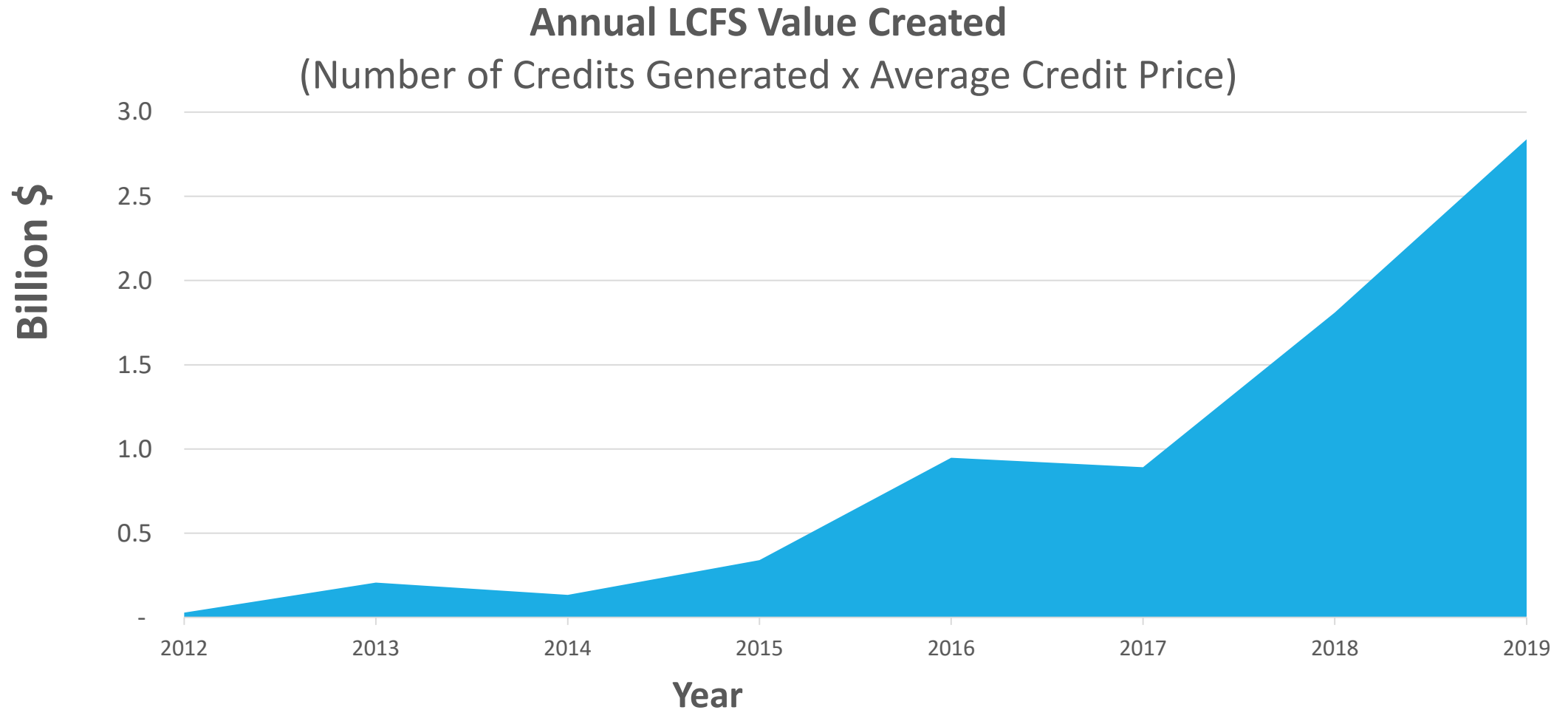
- Stakeholder feedback on current implementation of the LCFS

LCFS Implementation Updates

Diverse and Growing Alternative Fuel Pool



LCFS Promotes Investment in Low Carbon Fuels



LCFS Program Implementation Updates

Guidance

- Several LCFS Guidance Documents, FAQs and User Guides were published in 2019 and 2020. Please see the LCFS guidance webpage: <https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard/lcfs-guidance-documents-user-guides-and-faqs>
- If you have a question you would like to have addressed in an FAQ or Guidance, please email LCFSworkshop@arb.ca.gov

Participation Update

- 438 reporting entities registered in the LRT by the end of Q3 2020
- LCFS program data and quarterly data summaries are available here: <https://ww3.arb.ca.gov/fuels/lcfs/lrtqsummaries.htm>

Status of Fuel Pathways 2019-2020

		Tier 1	Tier 2	Lookup Table	Total by Year
Certified	2019	204	43	37	284
	2020	40	19	25	84
	Total by Type	244	62	62	368
Pathways under FES review	2020	38	47	0	85
Pathways under VB review	2020	51	22	0	73

LCFS Verification Implementation Update

- To date, CARB has accredited 26 verification bodies (VBs) and 123 individual verifiers
 - A second cohort of verifiers undergoing training now
- CARB updated LCFS online tools to support verification
 - Updated LCFS online tools for VBs to review fuel pathway applications
 - Added features for secure communication between VBs and applicants/CARB
- Staff is proposing that all verifiers will need to pass exams, including fast track verifiers and verifiers due for reaccreditation

Reminder - Fuel Pathways Certified Using CA-GREET2.0

- Fuel pathways previously certified using CA-GREET2.0 will be deactivated in 2021
 - Will be available for reporting fuel transactions occurring through December 31, 2020 (i.e., Q4 2020 reporting)
 - All fuel transactions occurring on or after January 1, 2021 must be reported using a fuel pathway certified using CA-GREET3.0
- Staff encourages CA-GREET2.0 fuel pathway holders to submit a new application using CA-GREET3.0 as soon as possible to ensure a valid CI is available for Q1 2021 reporting and onwards

Next LCFS Rulemaking Scope and Timeline

Governors Executive Order N-79-20

- Post-2030 LCFS program to support transition to cleaner fuels
- Recent CARB Carbon Neutrality Modeling
 - Aligns with EO
- Next Scoping Plan to address how LCFS should be aligned with EO

Staff considerations for Potential Amendments Related to

Fuel Pathways

Clarifications Related to Fuel Pathways

- Staff is considering proposing regulatory clarifications related to pathway application review and certification processes potentially building upon feedback related to the following LCFS guidance documents:
 - **LCFS Guidance 19-01** - Book-and-Claim Accounting for Low-CI Electricity
 - **LCFS Guidance 19-05** - Reporting and Recordkeeping for Natural Gas and Book-and-Claim Accounting for Biomethane
 - **LCFS Guidance 19-06** - Determining CI of Dairy and Swine Biogas to Electricity Pathways
 - **LCFS Guidance 20-01** - Fuel Production Facility and Intermediate Facility Registration in the Alternative Fuels Portal
 - **LCFS Guidance 20-02** - Joint Applicants for Fuel Pathway Applications
 - **LCFS Guidance 20-04** - Requesting EER-Adjusted Carbon Intensity Using a Tier 2 Pathway Application
 - **LCFS Guidance 20-05** - Redaction of Confidential Business Information

Updates to Tier 1 Simplified CI Calculators

- Staff is considering minor refinements to all Tier 1 Simplified CI Calculators
 - Including adding an electricity component to existing Tier 1 Simplified CI Calculator for Biomethane from Anaerobic Digestion of Dairy and Swine Manure (LCFS Guidance 19-05)
- Staff is considering adding a Tier 1 Simplified CI Calculator for hydrogen pathways
 - To capture user-defined input values for feedstocks, fuel production methods, and fuel transportation
 - Remove of hydrogen pathways from the Lookup Table (under consideration)
- Tier 1 calculator updates are intended to:
 - Improve calculator interface and further streamline inputs, where possible
 - Address stakeholder concerns and suggestions
 - Add flexibility to allow for more Tier 1 pathways
 - Add intermediate facilities and joint applicant facility information

Credit True-up for Temporary Pathway CIs

- In absence of necessary operational data to evaluate a CI, the regulation allows use of a temporary CI for reporting fuel transactions and credit generation upon request
 - These approved temporary CIs are conservative values and tend to be higher than actual CIs of fuels produced
 - Currently, the regulation prohibits retroactive true-up of credits that were generated using temporary CI after a certified CI is available
- Staff is considering allowing Tier 1/ Tier 2 fuel pathway holders to request true-up of credits using the certified CIs for fuel transactions reported using temporary fuel pathway CIs
 - Allowing reporting entities to generate credits based on actual operational CIs after certification of Tier 1 or Tier 2 pathways

Miscellaneous

- Certified LCFS fuel pathways are generally developed based on the most current 24 months of operational data. Staff is considering clarifying how to determine 24 month period depending on the time of application submission
 - This change will help applicants include complete and most recent data in the application
- Staff is considering adding details to the required documentation for temporary pathways
 - This change will help applicants submit complete temporary pathway application package to expedite staff review and approval
- Staff is considering adding procedural detail about removal of provisional status

Staff considerations for Potential Amendments Related to

Energy Economy Ratios (EERs)

Tier 2 EER-adjusted CI Applications

- Entities can apply for EER-adjusted CIs for fuel-vehicle combinations that are not already represented in Table 5 of the regulation, as a Tier 2 fuel pathway application
 - Staff provided clarification for such applications through LCFS Guidance 20-04
- Staff is considering adding details to the application requirements and review process for Tier 2 EER-adjusted CI applications
 - In section 95488.7(a)(3), clarifying data requirements and other supplemental information needed in support of applications
 - In section 95500(a)(1)(A), validation and verification requirements
 - Clarify FSE registration and reporting requirements for new fuel-vehicle combinations applying for Tier 2 EER-adjusted pathways

EER Values Available for Reporting

- Section 95486.1(a)(2) indicates a default EER = 1 may be used for fuel-vehicle combinations not represented in the Table 5
- Staff is considering removing the default option of using default EER = 1
- Entities seeking reporting and credit generation for such technologies would need to apply for a Tier 2 EER-adjusted CI
- Staff is also seeking stakeholder inputs for establishing EER values for CNG and Propane forklifts to be added in Table 5 of the regulation

Staff considerations for Potential Amendments Related to

LCFS Registration and Reporting

Registration in LCFS Data Management System (LDMS)

- The LCFS Data Management System (LDMS) comprises interactive and secured web-based systems to facilitate account registration and reporting. Under the current regulation, there are separate account registration requirements for LRT-CBTS, AFP and verification bodies
- Staff is considering unifying account registration and management requirements for AFP, LRT, and verification bodies
 - Account registration requirements in sections 95483.2(a)(2), (b)(3) and (c)(2)
 - Account management (change account information and/or users) in sections 95483.2(a)(4), (b)(6) and (c)(4)
 - Account closure requirements in section 95483.2(b)(7)
- Combining the LDMS registration requirements will streamline and simplify account registration and management

Change of Ownership or Operational Control

- Section 95483.3 provides requirements for change of ownership or operational control of an entity or facility registered in the LRT, AFP and verification body accounts
- Staff is considering clarifying change of ownership or operational control requirements
 - Clarify the process to transfer assets including registered fuel production facilities, fueling supply equipment, credits and LCFS data records
 - Reference section 95483.2 requirement for a 30 day notice to CARB of any account change, including business name change (without changing ownership/operational control)
- Staff's suggestion would streamline implementation of any changes in the LDMS to ensure continuity and data confidentiality

Quarterly and Annual Compliance Reporting

- Staff is considering clarifying certain requirements for quarterly and annual compliance reporting in section 95491 to better facilitate program implementation:
 - Provide more detail about calculating and updating default blend percentages and substitute CIs for reporting liquid fuel export available on the LCFS website:
<https://ww2.arb.ca.gov/resources/documents/substitute-pathways-and-default-blend-levels-lcfs-reporting-specific-fuel>
 - Clarify quarterly and annual reporting requirements for petroleum-based Project Reports described in section 95489

Fuel Pathway Allocation

- The current regulation provides fuel pathway allocation requirements for liquid fuel produced from multiple renewable feedstocks in section 95491(d)(1)(C)
 - Staff published LCFS Guidance 19-08 describing the reporting requirements for fuel pathway allocation of liquid fuels
- Staff is considering updating requirements for fuel pathway allocation for two or more liquid fuels produced simultaneously from multiple feedstocks
 - Incorporate the clarification to reporting requirements for diesel co-processed from renewable and fossil feedstock
 - Add requirements for fuel pathway allocation for multiple renewable fuels produced simultaneously from multiple renewable feedstocks (i.e. alternative jet fuel, renewable diesel and renewable propane)

Data Accuracy Provisions and Inclusion of Reported Data

- The current LCFS regulation provides missing data and data accuracy requirements for data submitted for CI determination; and for the verification of CI data or data submitted for project-based crediting
 - Measurements must either be taken from financial transactions meters or meet the $\pm 5\%$ accuracy criteria in section 95193(k) of the Mandatory Reporting of Greenhouse Gas Emissions (MRR) the Regulation
 - For any missing CI data, the entity must submit an alternative method
- Staff is considering specifying meter accuracy requirements for fuel transaction data reported in Quarterly Fuel Transactions Report
- The proposed change would align accuracy and missing data requirements in the LCFS with MRR and Cap and Trade

Electricity Credit Proceeds Spending Requirements

- The LCFS regulation requires all entities generating credits using electricity pathways to use the resulting credit proceeds to invest in transportation electrification and include a summary in the annual compliance report
- Staff issued LCFS guidance 20-03 clarifying electricity credit proceeds requirements
- Staff is considering proposing to:
 - Incorporate clarifications arising from feedback on guidance 20-03
 - Clarify spending requirements apply to all the entities generating credits using electricity pathways, including electric forklifts and fixed guideway applications
 - Add details on appropriate uses of credit proceeds, including limits on using for administrative costs

Electricity Dispensed for Electric Forklift Fueling

- Under the current regulation, the quantity of electricity used in electric forklifts may be reported by one of the following methods in 95491(d)(3)(E):
 - Metered
 - Estimated using a CARB-approved methodology
 - Estimated by CARB only for opt-in EDUs for electric forklifts not reported by another entity
- Staff is considering proposing to require metered data for all electric forklift fueling. The change would:
 - Result in accurate crediting and aligns electric forklift reporting requirements with all other reported fuel applications
 - Removes the need to track and report forklift fleet movement
 - Eliminate estimated forklift credits issued to EDUs which have declined due to increased reporting of electric forklifts by other entities

Clarifications for Uses of On-Vehicle Telematics

- The LCFS regulation allows use of on-vehicle telematics for measuring and recording electricity amounts dispensed for EV charging for reporting metered residential charging to generate incremental credits
- Staff provided clarification for using telematics data along with geo-fencing requirements to avoid potential double counting in the LCFS guidance 19-02
- Staff is considering proposing to:
 - Add clarification in the regulation for using telematics data for reporting residential EV charging
 - Allow use of on-vehicle telematics to measure electricity dispensed in other electric transportation applications for LCFS reporting purposes. For example, electric forklifts, drayage trucks, etc.

REC Retirement for Low-CI Electricity

- The regulation allows entities to apply for a zero-CI electricity Lookup Table pathway for
 - Directly supplied zero-CI electricity
 - Zero-CI electricity claimed through indirect book-and-claim accounting with the retirement of Renewable Electricity Certificates (RECs)
- Staff is considering requiring retirement of RECs for zero-CI electricity pathway when electricity is directly supplied and eligible for REC generation
- Staff is also considering adding consistent requirements across all provisions in the LCFS for demonstrating REC retirements associated with low-CI electricity

First Fuel Reporting Entity for eOGV, eCHE, eTRU and eforklifts

- The first fuel reporting entity (default credit generator) for
 - Electric Cargo Handling Equipment (eCHE) and shore power delivered to Ocean Going Vessels at-berth (eOGV) is the owner of the facility or location where electricity is dispensed for fueling
 - Electric Transportation Refrigeration Units (eTRU) is the owner of the eTRU
 - Electric forklifts it is the fleet owner
- Staff is considering changing the first fuel reporting entity for eOGV, eCHE, eTRU and electric forklift to the entity that owns the charging equipment used for fueling
- The change would avoid potential conflicts due to multiple claims for the same charging and will align requirements with the other electric transportation categories
- The first fuel reporting entity will retain the flexibility to designate a third-party on its behalf for reporting and credit generation

Fuel Supply Equipment (FSE) Registration

- Section 95483.2(b)(8) provides Fueling Supply Equipment (FSE) registration requirements necessary for quarterly fuels transactions reporting
- Staff is considering adding details to the FSE registration requirements
 - Require FSE registration be submitted by the end of the calendar quarter to be considered for approval and made available for that quarter's reporting period. For example, a FSE registration must be submitted by March 31 to be considered for approval for reporting Q1 fuels transactions
 - Staff is considering adding requirements and procedural details to de-register FSE
- These changes would provide staff sufficient time for review and approval of FSEs to allow for timely reporting of fuel transactions
- These changes aligns with the staff's current review and approval process for FSE registrations

Miscellaneous

- For reporting electricity used as a transportation fuel, all first fuel reporting entities have the flexibility to designate a third-party on their behalf for reporting and credit generation
 - The regulation does not specify this flexibility for transit agencies operating fixed guideway systems
 - Staff is considering expanding the flexibility for transit agencies to designate a third-party as the first fuel reporting entity on their behalf
- Staff is considering clarifying requirements for the FSE registrations by a designee on behalf of the original first fuel reporting entity
- Staff is considering clarifying FSE registration requirements for hydrogen forklifts consistent with electric forklifts

Staff considerations for Potential Amendments Related to

Third-Party Verification

Third-Party Verification of Electricity Transactions

- Electricity transactions submitted in Quarterly Fuel Transaction Reports are currently not subject to third-party verification, but subject to staff audits
- Staff is considering proposing third-party verification requirements for electricity transactions
- In Q1 2020, about 10 percent of total LCFS credits were generated from reported metered electricity amounts
- Verification of electricity pathways would remain unchanged
 - No verification of Lookup Table pathways
 - Tier 2 pathways will still be subject to verification
- Staff is considering adding thresholds for a longer verification deferment period (e.g., 6 years) and verification exemption, which may be appropriate for smaller electricity credit generators

Staff considerations for Potential Amendments Related to

ZEV Infrastructure Crediting

Hydrogen Refueling Infrastructure (HRI)

- HySCaPE is a tool developed by NREL and incorporated in the LCFS to determine the dispensing capacity of a hydrogen station under HRI provision for infrastructure crediting
- Staff is considering specifying a number of inputs to the HySCapE model in the regulation. These inputs may include, but are not limited to, the following:
 - Time between fills
 - Dispenser flow rate
 - Chevron profile
 - Vehicle storage volume
 - Hourly Distribution
- HRI Application Requirements:
 - Consider providing more specificity with regard to up-time reporting, including an explicit definition of “station availability”
 - Add further details to supplement location justification requirement in section 95486.2(a)(2)(J)

DC Fast Charging Infrastructure (FCI)

- FCI application requirements
 - Staff is considering removing latitude and longitude as an application requirement since this information is also required at the time of FSE registration
 - Sites with a total nameplate power rating greater than 2,500 kW need to request EO approval and provide a justification to apply for up to 6,000 kW. Staff is considering to add more detail about what must be included in the justification for EO approval
- FCI reporting and credit generation requirements
 - Staff is considering to clarify requirements for providing Fueling Supply Equipment (FSE) IDs in cases where the FSEs are registered after the application approval

Miscellaneous Changes to HRI and FCI

- Regulation requires calculating and posting potential HRI and FCI credits to enforce 2.5% of total deficits limit on HRI and FCI credits
 - Staff is considering clarifying that latest-available deficit data be used to calculate potential credits instead of prior quarter data to account for delay in quarterly data publication
- Entities receiving HRI and FCI credits are required in section 95486.2 to provide cost and revenue information regarding their FSE on a quarterly basis
 - Staff published LCFS guidance 19-02 to provide clarification on how to account for tax/fee breaks and holidays in the capital and operational expenditures fields for the purposes of reporting cost and revenue data
 - Staff is considering incorporating feedback related to guidance 19-02 into the regulation

Staff considerations for Potential Amendments Related to

Project-based Crediting

Joint Applicants for Project-based Crediting Applications

- Staff is considering proposing expanding the flexibility for joint applicants to be designated as the opt-in project operator and credit generator to all petroleum-based project types covered in section 95489
 - Currently this flexibility only applies to certain innovative crude projects
 - Considering extending this flexibility to both refinery investment and renewable hydrogen projects

Third-Party Validation for Petroleum Projects

- Staff is considering proposing requiring third-party validation of pre-project (baseline) data as part of the approval process for petroleum projects
 - The current regulation does not require third-party validation of this pre-project data during the application phase
 - This change would better align the project-based crediting application process with the fuel pathway application process.

CCS as part of Innovative Crude Projects

- Staff is considering proposing more explicit eligibility criteria for CCS projects under the innovative crude provision
 - The current regulation states that “carbon capture must take place onsite at the crude oil production and transport facilities”
 - Considering revising eligibility to state “Carbon capture must take place on equipment supplying steam, heat, or electricity (behind the meter) to crude oil production or transport facilities. The credit will be prorated based on the fraction of steam, heat, or electricity supplied to the crude oil production or transport facilities. Projects using CCS are subject to the provisions of section 95490.”

Miscellaneous Innovative Crude Changes

- Staff is considering to propose the following miscellaneous changes to the innovative crude provision:
 - Require the evaluation of land use change emissions in the credit calculation for all projects
 - Require the innovative crude credit to be prorated in those oil fields that produce both oil and gas for export
 - Allow annual reporting of project data for those projects opting for annual instead of quarterly verification and credit generation
 - Remove the requirement for the Executive Officer to review the application for completeness within 30 days of receipt

Carbon Capture and Sequestration (CCS)

- CCS and Direct Air Capture (DAC) are critical to achieving our long-term carbon neutrality goals
- Staff is soliciting feedback on the following:
 - Implications of ZEV Executive Order on CCS and project eligibility
 - Need for additional eligibility conditions for DAC projects (location)
 - Areas for additional clarity or potential changes to the protocol

OPGEE Introduction

OPGEE Version 3.0

- LCFS regulation section 95489(b)(3)(C) requires that CARB periodically consider revisions to the Oil Production Greenhouse Gas Emissions Estimator (OPGEE) model
 - OPGEE is an LCA tool used for estimating greenhouse gas emissions from the production, processing and transport of crude
 - Developed under contract by researchers at Stanford University and updated several times over past decade
- Staff has invited Adam Brandt of Stanford University to provide overview of recent OPGEE revisions under development
- The model is currently not ready for review. As part of a future workshop it will be posted and the effects of the model changes on carbon intensity values will be discussed



THANK YOU