

Grid & Renewable Electricity in the LCFS

Public Working Meeting for Stakeholder Groups
December 2, 2016



Discussion Outline

- Introduction
- Fuel Pathways [30 minutes]
 - Grid Electricity pathway updates
 - New Renewable pathways and provisions
- Fuel Reporting [60 minutes]
 - Station-level Registration and Reporting
 - Station/Equipment IDs
 - Aggregators
 - EDU Credits for Non-Residential EV Charging
 - EER Updates
 - Regulated Party Categories
 - Forklifts Credit Calculation
- Verification [45 minutes]

[2]

Updates to Lookup Table Pathway CI for Grid Electricity, and
Potential New Pathways for Renewable Electricity

FUEL PATHWAY EVALUATION

[3]

Grid Electricity Pathway

- *Summary:*
 - One Lookup Table pathway is used for all EV charging
 - Considering updating annually the CA grid average CI value to reflect increased renewables in the grid resource mix
 - Using the most recently available electricity data from the California Energy Commission (CEC) Quarterly Fuel and Energy Report (QFER)* or other appropriate data source suggested by stakeholders.
- *Note:*
 - Pertains to electricity supplied to EV charging only; grid electricity used in production of other fuels will continue to be modeled using U.S. EPA's eGRID for consistency with other fuel pathways and other states' grid resource mixes.

QUESTIONS:

- Should the grid electricity CI be updated annually?
- Are there other data sources that should be reviewed and considered?

* See QFER CEC-1304 Power Plant Owner Reporting Form, total electricity system power data available at:
http://www.energy.ca.gov/almanac/electricity_data/total_system_power.html

[4]

Renewable Electricity Pathways

- *Summary:*
 - Potentially adding a Lookup Table pathway for 100% Solar or Wind-generated electricity supplied to EV charging.
 - Clarifying current rule and adding flexibility for non-co-located renewable power.
 - See *Electricity discussion paper*, page 4:
- (1) Green Tariff Shared Renewables (GTSR)* and (2) "off-site, co-owned" provisions
- *Considerations:* Compliance requirements would include ARB approval and ongoing review of the metering methodology, utility or other contracts to ensure that the renewable power does not also generate any RECs or other renewable attributes in any other program.

QUESTIONS:

- Staff is seeking stakeholder discussion and feedback on the potential methods for recognizing renewable electricity used in electric vehicles.

Green Tariff/Shared Renewables Program (GTSR): <http://www.cpuc.ca.gov/General.aspx?id=12181>

[5]

Potential Non-Regulatory Changes for Enhanced Reporting, and
Potential Regulatory Amendments to Reporting Requirements

FUEL REPORTING

[6]

Register and Report Per Fueling Facility in LRT-CBTS

- Administrative Improvements Implemented for Q1 2017
 - New template to register all fueling facilities in LRT-CBTS (see below)
 - The list of fueling facilities needs to be updated quarterly (if any changes)
 - Report fuel amount dispensed by FPC at each individual fueling facility, using a unique LCFS fueling facility ID that will be generated upon registration.

LRT FORM FOR FUELING FACILITY REGISTRATION

Company Name	FEIN	Fueling Facility Name	Street Address	City	Zip Code	Meter # or OEM Serial #	Fuel Type	FPCs	Application Type	Longitude	Latitude

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EV Charging Station IDs

- *Summary:* Assign a unique LCFS identifier for each registered charging station based on the Electric Vehicle Supply Equipment (EVSE) serial number assigned by the original equipment manufacturer (OEM)
- *Rationale:* Facility-specific IDs would help avoid double counting and facilitate verification.

QUESTIONS:

- Does basing unique identifiers on EVSE serial numbers make sense?

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Third-party Aggregators

- *Summary:* Aggregators could generate credits on behalf of electricity stakeholders
- *Rationale:* To increase participation and facilitate sale of LCFS credits
- *Important considerations:* Eligible parties could contractually designate a third party to manage reporting and credit generation. The aggregator would accept verification responsibility and would arrange through its contracts for ARB and verifier access to records, facilities, and personnel.

QUESTIONS:

- Would you be likely to take advantage of this option? Will this reduce administrative burden? Improve economic benefits of LCFS? Do you foresee issues contractually working out agreements?

[9]

Allow EDUs to Claim Credits for All Light/Medium Duty EV Charging Not Claimed by others

- *Summary:* Staff could calculate credits for EDUs based on quarterly estimate of the full electricity use by vehicle type, rather than residential charging only. To avoid double counting, ARB would subtract credits generated by separately metered residential, public, private/workplace, and fleet charging explicitly claimed by opt-in parties.
- *Rationale:* More completely capture electricity use and avoid “stranded credits” from currently unreported public, workplace and fleet EV charging.

QUESTIONS:

- Staff is seeking stakeholder discussion and feedback on this approach.

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Update EER Values and Add New Vehicle Categories

- *Summary:*
 - Determine medium duty EV EER
 - Add more class specific EERs for heavy duty EVs
 - Add new vehicle categories and associated EERs for:
 - Airport Electric Ground Support Equipment (GSE)
 - Truck Stop Electrification (TSE)
- *Rationale:*
 - Improve accuracy of credit calculation
 - Increase participation

QUESTIONS:

- Staff is seeking stakeholder feedback to develop specific EERs for medium and heavy duty EVs, and GSE and TSE.
- Are there other vehicle categories ARB should consider?

(11)

Consolidate Categories of Regulated Parties

- *Summary:* Combine EV fleet and private access charging categories, and discontinue battery switch station charging category
- *Rationale:*
 - To streamline the reporting of EV fleet and private access charging
 - To remove a category never been used
- *Important considerations:* EV fleet operators that host their own charging equipment will continue to generate credits under private access EV charging category.

QUESTIONS:

- Staff is seeking stakeholder discussion and feedback on this potential change to the regulation text.

(12)

Electric Forklifts Credit Calculation

- *Summary:* Currently, forklifts fleet operators can generate credits for measured charging. Utilities can receive credit determined by an annual calculation by ARB.
- *Question:* Staff is seeking stakeholder discussion and feedback on other potential measurement methodologies for forklift charging.
- *Summary:* Current credit formula for electric forklifts does not include an EER adjustment. Staff is considering allowing post-2010 electric forklifts to use regular credit formula that includes the EER adjustment.
- *Question:* Staff is seeking stakeholder discussion and feedback on revising the credit calculation formula.

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Grid and Renewable Electricity

VERIFICATION

[14]

Verification Overview (1)

- *Summary:* Supplement work of ARB staff with addition of mandatory verification conducted by accredited impartial third-parties engaged by the first LCFS reporting party:
 - Fuel pathway carbon intensities
 - Reported fuel quantities
 - Chain-of-custody information
- *Rationale:* Needed to ensure integrity in LCFS credit market through assurance of GHG reduction claims and to improve consistency with international standards of assurance

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Verification Overview (2)

- *Important Considerations—Guiding Principles:*
 - ① ARB retention of sole authority over the LCFS program, including verification requirements, as bestowed through the State's legislative and regulatory process;
 - ② Continual improvement in the detection, prevention, and correction of errors or fraud;
 - ③ **Identification and implementation of cost reducing strategies, while maintaining verification rigor;**
 - ④ Policy consistency with other ARB verification programs; and
 - ⑤ Consideration of the unique attributes of fuel carbon intensities and fuels marketing structure.

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Considerations for Verification of Grid and Renewable Electricity

- *Summary:*
 - Staff is considering exempting grid EV charging from third-party verification and instead, audits be conducted by ARB enforcement staff at no cost to the reporting entity beyond making information available to ARB.
 - Renewable electricity would require third-party verification
- *Rationale:*
 - To assess cost-reducing verification strategies for electricity transportation fuel providers while achieving reasonable assurance of credit validity.
- *Important considerations (trade-offs):*
 - Verification of CA Average Grid Electricity would focus on ensuring accuracy of reported amount each year and include site visits to a portion of charging stations.
 - Verification of Renewable Electricity would focus on conformance with the flexibility requirements and accuracy of reported amount

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Verification – Grid Electricity (1)

Type of Use	Party Eligible to Generate Credits	Potential Verification Points and Data to be Verified
Residential EV charging	Electricity Distribution Utility (EDU)	<ul style="list-style-type: none"> • Electricity dispensed—Quarterly LRT reports, sampled meter records • Electricity used for non-metered residential charging and credit calculation—Annual data submitted to EO: <ul style="list-style-type: none"> ◦ Daily average electricity use ◦ Number of separately-metered EVs for all 4 quarters of prior year
Public access EV charging	1. Third-party non-utility EV Service Provider (EVSP) 2. EDU if EVSP does not opt in	<ul style="list-style-type: none"> • Amount of electricity dispensed—Quarterly LRT reports • Utility invoices, meter records
EV fleet	1. Fleet operator 2. EDU if fleet operator does not opt in	<ul style="list-style-type: none"> • Amount of electricity dispensed—Quarterly LRT reports • Utility invoices, meter records • Number and types of vehicles
Battery switch station	1. Station owner 2. EDU if station owner does not opt in	<ul style="list-style-type: none"> • Amount of electricity dispensed—Quarterly LRT reports • Utility invoices, meter records • Battery switching records

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Verification – Grid Electricity (2)

Type of Use	Party Eligible to Generate Credits	Potential Verification Points and Data to be Verified
Private access EV charging at business or workplace	1. Site host 2. EDU if site host does not opt in	<ul style="list-style-type: none"> Amount of electricity dispensed—Quarterly LRT reports Utility invoices, meter records
Fixed guideway systems	1. Transit agency 2. EDU if transit agency does not opt in	<ul style="list-style-type: none"> Amount of electricity dispensed—Quarterly LRT reports Utility invoices (energy consumption for transport propulsion) Construction contract and other supporting documents
Electric forklift fleet	1. Fleet operator 2. EDU if fleet operator does not opt in	<ul style="list-style-type: none"> Amount of electricity dispensed—Quarterly LRT reports Utility invoices, meter records, other records as appropriate Annual data submitted for calculation of non-metered charging

(19)

Questions

- Should EDU's be required to have residential LCFS data that they report to ARB verified? Staff envision this could be accomplished by the EDU's MRR verification body with LCFS-specific ARB guidance or training.
- In Appendix B, staff provides a comprehensive table of current reporting requirements and potential verification points by entity. Staff is seeking your feedback on the verification points listed in the last column of the table.
- For ARB site visits to EV charging stations, staff is seeking your feedback on the appropriate sample size (i.e., portion of total locations to be visited) and frequency.

(20)

Verification – Renewable Electricity

Type of Use	Party Eligible to Generate Credits	Potential Verification Points and Data to be Verified
Future on-road renewable electricity	<ol style="list-style-type: none"> 1. Station operator 2. EDU if operator does not opt in 	<ul style="list-style-type: none"> • Contracts and invoices to substantiate purchases via a Green Tariff program or other eligible source of renewable power and to ensure power supplied to EV station does not generate other renewable attributes in any other program except RFS2 • Other specific verification points to be determined during the development of applicant's monitoring plan

QUESTIONS

- We would like your feedback on the potential verification points and data to be verified listed here. We also encourage written feedback.

[21]

Anticipated Next Webinar Topics

- Feedback and updates on topics from this webinar
- Verification considerations for small credit generators
- Considerations for CI sensitivity analysis and monitoring plans/management systems
- Possible triggers requiring more frequent verifications and increases in sampling requirements
- Suggestions from stakeholders?

Attend 2017 LCFS Workshops for topics affecting all fuels

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THANK YOU!

Feedback should be sent to
LCFSworkshop@arb.ca.gov
by January 6th, 2017

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