Low Carbon Fuel Standard Guidance on Electricity Reporting (26-02)

Contents

A. Introduction 3
B. Background 3
C. Electric Transportation Applications 4
D. Fueling Supply Equipment Registration 6
1. Facilities With Multiple Electric Transportation Applications 10
2. Measuring Equipment Dispensing Electricity to Multiple Electric Transportation Applications 11
3. Common Issues During FSE Registration 11
4. FSE Approval and Processing Time 15
E. Designation Agreement 16
F. Fueling Supply Equipment Deactivation 19
1. FSE Deactivation Requirements and Processing Time 19
2. Common Issues During FSE Deactivation 20
G. Fuel Pathway Code 20
1. Lookup Table Pathway 24
California Average Grid Electricity CI 24
Zero-CI 25
Smart Charging 26
Base Credits Lookup Table Pathway 27
2. Tier 2 27
3. Tier 2 for EER-Adjusted CI 27
4. Temporary Pathway 27
H. Quarterly Fuel Transactions Report 28
1. Common Issues During QFTR Submission 31

2. Corrections During an Open Reporting Period 33
3. Corrections During the Three Days Following the Reporting Deadline 33
4. Corrections To One or Multiple QFTRs For a Quarter for Which the Quarterly Reporting Deadline Has Passed 34
I. Credit Generation 35
1. Credit Proceeds Spending Requirements 36
J. Renewable Energy Certificates for Book-and-Claim Accounting for Low-CI Electricity 36
K. Accounting for Fuel Loss 38
L. Metering Requirements 39
1. Electric Vehicle Supply Equipment (EVSE) 40
2. Electric Forklifts 41
3. eTRU, eCHE, eOGV, and Other 41
4. Vehicle Telematics 42
5. Calibration Postponement Requests 42
M. Geofencing for Residential EV Charging Reporting 43
1. Geofencing Non-Residential FSE Option 44
2. Geofencing Residential FSE Option 44
N. Annual Compliance Reporting 45
O. Annual QFTR Verification 46
1. Electricity Transactions Subject to Verification 46
2. Electricity Transactions Not Subject to Verification 47
3. Less Intensive Verification 48
4. Deferred Verification 48
5. Monitoring Plan 49
6. Risk-Based Approach to Verification 50
P. Hypothetical Example: From QFTR Reporting to Annual Verification 51
Q. Contacts 53

A. Introduction

The California Air Resources Board's (CARB) Low Carbon Fuel Standard regulation (LCFS), title 17 sections 95480 to 95503 of the California Code of Regulations, is designed to reduce greenhouse gas emissions associated with the life cycle of transportation fuels used in California. CARB staff have prepared this guidance document to describe the regulatory requirements in a user-friendly format. Unlike the regulation itself, this document does not have the force of law. It is not intended to and cannot establish new mandatory requirements beyond those that are already in the *LCFS regulation*, nor can it supplant, replace or amend any of the legal requirements of the regulation. Conversely, any omission or truncation of regulatory requirements does not relieve entities of their legal obligation to fully comply with all requirements of the regulation.

This document describes the process for electricity reporting in the LCFS Reporting Tool Credit Bank and Transfer System (LRT-CBTS).

B. Background

Electricity is identified in the *LCFS regulation* as an alternative transportation fuel ("opt-in fuel") that may generate LCFS credits if the fuel provider elects to participate as a fuel reporting entity pursuant to section 95483.1 and meets all applicable requirements.

In accordance with sections 95483 and 95483.1 of the regulation, an opt-in electricity entity is required to report quarterly fuel transactions in the LRT-CBTS, thereby becoming a credit generator.

To report quarterly fuel transactions, an entity must register fueling supply equipment as required by section 95483.2(b)(8) of the regulation. An electricity entity that opts in to the program but does not register fueling supply equipment or report fuel transactions will be subject to account closure.

Entities that do not meet the requirements to retain an LRT-CBTS account may not hold, purchase, sell, or trade LCFS credits per section 95487(a)(1)(B) of the LCFS regulation.

Examples of opt-in electricity reporting entities and credit generators participating in the LCFS are:

- Electric Distribution Utilities (EDUs),
- Load-Serving Entities (LSEs),
- Electric Vehicle (EV) manufacturers,
- Transit agencies,
- EV charging infrastructure owners (or a designator),
- Facility owners (or a designator) where electricity is dispensed for vehicle applications included but not limited to off-road vehicles such as electric forklifts (eForklifts), electric Cargo Handling Equipment (eCHE), electric Refrigeration Transportation Units (eTRUs), and Electric Power for Ocean-going Vessel (eOGVs).

Electricity opt-in entities can generate LCFS credits in two primary ways: by using a fuel pathway with a certified carbon intensity, as outlined in sections 95486.1(c) through (e) of the LCFS regulation, and/or by earning capacity-based credits for DC Fast Charging Infrastructure (FCI) under section 95486.2(b)(4).

More information about the FCI application process for Light Duty/Medium Duty (LD/MD) and Heavy Duty (HD) EV charging infrastructure can be found on the *LCFS ZEV Infrastructure Crediting* website and in section 95486.3(b) of the regulation.

An opt-in electricity reporting entity may request to opt-out of the LCFS at any time by meeting the requirements described in section 95483.1(c) – providing a 90-day notice, submitting remaining quarterly and annual reports, and eliminating any deficits incurred.

C. Electric Transportation Applications

Electric transportation applications for LCFS credit generation refer to the use of electricity as a transportation fuel in vehicles or equipment categories that displace a fossil-fuel counterpart, and it is associated with an energy economy ratio (EER) as outlined in Table 5 of the LCFS regulation. Each EER value represents the efficiency of a fuel as used in a powertrain as compared to a reference fuel (gasoline or diesel) used in the same powertrain. EERs for fixed guideway systems are based on MJ/number of passenger-miles.

Section 95483(c) of the LCFS regulation defines the following electric fuel transportation applications for credit generation:

- Residential EV charging

    - LDV/MDV Battery Electric Vehicle (BEV) or Plug-In Hybrid Electric Vehicle (PHEV)
- Non-Residential EV charging
    - LDV/MDV BEV or PHEV
    - HDV BEV or PHEV Truck or Bus (gross vehicle weight rating 14,001 pounds and greater)
    - On-Road Electric Motorcycle
- Electric Forklifts (eForklifts)
    - Electricity Forklifts with Lift Capacity < 12000 lbs
    - Electricity Forklifts with Lift Capacity >= 12000 lbs
- Electric Transport Refrigeration Units (eTRU)
- Electric Cargo Handling Equipment (eCHE)
    - A list of common eCHE that are eligible and not eligible for crediting under the LCFS can be found in the *FAQ eCHE document* posted on the *LCFS website*.
- Electric Power for Ocean-going Vessels (eOGV)
- Fixed Guideway Systems
    - Fixed Guideway, Heavy Rail
    - Fixed Guideway, Light Rail
    - Trolley Bus, Cable Car, and Street Car
- Other electric transportation applications
    - For any other fuel application that is not included in the list above, the entity may apply for a Tier 2 EER adjusted pathway following the process outlined in section 95488.7(a)(3) of the LCFS regulation.
    - Examples of other applications that require a Tier 2 EER pathway are electric scooters, electric bikes, and electric tractors.

Table 1 below summarizes the regulatory EER values for electric transportation applications.

Table 1. EER values for electric transportation applications.

Electric transportation application	EER
LDV/MDV BEV, or PHEV	3.4
On-Road Electric Motorcycle	4.4
HDV BEV or PHEV Truck or Bus	5.0

Fixed Guideway, Heavy Rail	4.6
Fixed Guideway, Light Rail	3.3
Trolley Bus, Cable Car, Street Car	3.1
Electricity Forklifts with lift capacity <12,000 lbs.	2.4
Electricity Forklifts with lift capacity ≥12,000 lbs.	3.8
eTRU	3.4
eCHE	2.7
eOGV	2.6

D. Fueling Supply Equipment Registration

Fueling Supply Equipment (FSE) registration is required for electricity entities that opt-in to the LCFS as a fuel reporting entity to report fuel transactions, except for EDUs that opt-in only for base credits for non-metered residential EV charging. FSE registrations must be submitted by the reporting entity that owns the FSE or the entity that has been designated to submit data and generate credits on behalf of the FSE owner. FSE owners that designate the reporting and credit generation to a third-party entity do not need to apply for an LRT-CBTS account or register FSEs.

More details about the designation agreement are described in section E of this document.

Each electric transportation application has its own FSE definition pursuant to sections 95483.2(b)(8)(B)3 through 6 of the LCFS regulation to be either:

- Equipment that measures the electricity dispensed for EV charging
- Facility where electricity is used to fuel vehicles
- Location of a specific electric application

In alignment with section 95483.2(b)(8) of the LCFS regulation, reporting entities must use the template that is available on the LRT-CBTS to submit one or multiple FSEs with all general and specific information required under section 95483.2.(b)(8)(A) and sections 95483.2.(b)(8)(B)3 through 6.

In addition to the regulatory information required, the template provides a predefined list of FSE charging types that must be used when registering an FSE.

Table 2 below indicates which FSE type must be used for each of the electric transportation applications. The *LRT-CBTS User Guide* and *LCFS Guidance 19-04* provide a more detailed explanation and a step-by-step process for completing and submitting FSE registrations.

Table 2. Charging types for FSE registration.

Category		Electric transportation application	Charging type (for FSE registration)
On-road applications	**Residential EV charging** (exclusively for incremental crediting) FSE refers to a piece of equipment or on-vehicle telematics capable of measuring the electricity dispensed for EV charging.	LDV/MDV – BEV or PHEV	Select one Residential Incremental charging type: • Off-Vehicle (Level 1) • Off-Vehicle (Level 2) • On-Vehicle (telematics)
	Non-Residential EV charging FSE refers to each piece of equipment capable of measuring the electricity	LDV/MDV – BEV or PHEV	Select one Non-Residential charging type: • Level 2 • DCFC – CHAdeMO • DCFC – CCS • DCFC – Tesla • DCFC – CHAdeMO & CCS

Category		Electric transportation application	Charging type (for FSE registration)
	dispensed for EV charging. i.e. EV charger meter		• DCFC – CHAdeMO & Tesla • DCFC – CCS & Tesla • DCFC – CHAdeMO, CCS & Tesla
		HDV BEV or PHEV Truck or Bus	If application is for charging vehicles with Gross Vehicle Weight Rating 14,001 pounds and greater, then select: • On-road Heavy Duty EV Charging
		On-Road Electric Motorcycle	• Other
Off-road applications	**Electric Forklifts, eCHE, eOGV, or eTRU**, FSE refers to the facility or location where electricity is dispensed for fueling.	Electric Forklifts with Lift Capacity < 12000 lbs	• eForklift
		Electric Forklifts with Lift Capacity >= 12000 lbs	
		eTRU	• eTRU
		eCHE	If the application is included in the FAQ eCHE document posted on the LCFS website, then select: • eCHE

Category		Electric transportation application	Charging type (for FSE registration)
			If the application is for yard trucks or utility tractor rigs which are not eligible as eCHE then select: • Other For LCFS crediting, an electric yard truck is considered a Heavy-Duty truck.
		eOGV	• eOGV
	Fixed Guideway system FSE refers to the location of the Headquarters of the transit agency operating the system.	Fixed Guideway, Heavy Rail	• Other Prior to submitting registration, entity must provide a narrative as to how the system qualifies as a fixed guideway system and that electricity for propulsion can be isolated for reporting purposes.
		Fixed Guideway, Light Rail	
		Trolley Bus, Cable Car, Street Car	
Other electric transportation applications	Depending on the electric transportation application, FSE refers to a fuel dispenser or a transportation equipment with the capability to	Any other application not included above.	• Other These are applications that require a Tier 2-EER adjusted CI, i.e. eScooters/eBikes, tractors, etc. Except for yard trucks or

Category		Electric transportation application	Charging type (for FSE registration)
	measure the dispensed fuel in that equipment.		utility tractor rigs that are registered as Other as well.

While the electric transportation application selected in the quarterly fuel transaction report (QFTR) determines the EER value for credit calculation, the charging type selected during registration enables CARB staff to identify the regulatory requirements the FSE must meet for LCFS approval. Any FSEs that do not align with the regulatory requirements may be rejected during the CARB review process.

1. Facilities With Multiple Electric Transportation Applications

When registering a facility as the FSE, and the facility has multiple electric transportation applications, the entity must be able to differentiate the charging events for each type of electric transportation application, such as utilizing dedicated meters. Each type of electric transportation application in use at the facility must be registered as a separate FSE, even if using the same meter for electric transportation types.

For example, Facility "A" has 10 chargers for LD/MD EV charging but also has six dedicated meters for eTRUs and two separate meters for the electricity used in forklifts. Using the FSE registration template, the Reporting entity will submit the following FSEs:

- 10 FSE registrations for LDV/MDV EV Charging at Facility "A" (each charger meter will receive a unique FSEID).
- One FSE registration for Facility "A" using eTRU charging type (this will generate only one FSEID for the facility to report all electricity dispensed to eTRUs at that location. Entity should not submit an FSE registration for each eTRU or for each meter.
- One FSE registration for Facility "A" using eForklift charging type (this will generate another FSEID for the same facility to be used to report all

electricity dispensed to eForklifts. Entity should not submit an FSE registration for each eForklift.

All these FSEs can be submitted in one single template or separate templates.

For large facilities with multiple owners such as partial areas being leased or rented to different entities, each leasing entity participating in the LCFS must clearly identify the specific facility address where the electricity is dispensed so it does not overlap with a different leasing facility entity address.

2. Measuring Equipment Dispensing Electricity to Multiple Electric Transportation Applications

When registering equipment as the FSE and the FSE dispenses electricity to multiple electric transportation applications, the entity must be able to differentiate the charging events for each type of electric transportation application.

For example, an EV charger installed on a public site for non-residential EV charging that is intended for On-road HD EV charging, but it is also used by LDV/MDV – BEVs or PHEVs. In this case, the FSE should be registered only once as On-road Heavy Duty EV Charging and when reporting fuel transactions, entity should report the transactions associated with HDV BEV or PHEV Truck or Bus separately from the LDV/MDV – BEV or PHEV using the same FSEID.

The above also applies for FSEs that are part of an FCI application.

3. Common Issues During FSE Registration

The most common issues found during FSE registration along with the causes and resolution are:

1. Claiming same Vehicle Identification Number (VIN) for incremental crediting for residential EV charging.
    a. Having multiple entities claiming the same VIN is resolved by CARB following the order of preference as described in section 95483 (c)(1)(B)2 of the LCFS regulation:
        i. Priority 1. The Load Serving Entity (LSE) supplying electricity to the EV associated with the FSE and metered data.
        ii. Priority 2. The manufacturer of the EV associated with the FSE.
        iii. Priority 3. Any other entity.

If the entity registering the VIN for incremental crediting has a higher order of preference, CARB staff will approve the new registration and will create a new FSEID for that VIN. The previously approved FSE with a lower order of preference will be automatically deactivated.
The same VIN cannot be claimed by multiple entities during a reporting period. The order of preference is based on the entity that attempts to register the FSE, even if the entity is designated by another entity to report on their behalf. For example, an entity that is itself a priority 3 and designated to report on behalf of an entity with a priority 2, will still have a priority of 3 for residential incremental FSE registration.

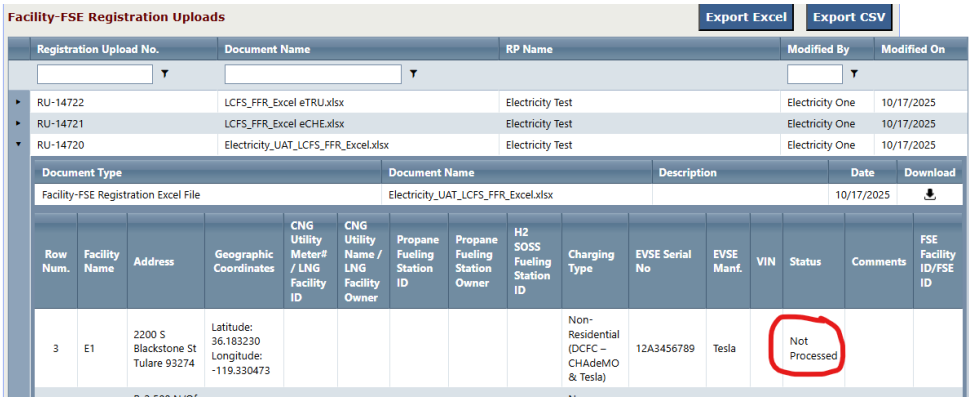
2. Claiming the same Serial Number of an already registered and active FSE.
    a. Having an entity claiming an active FSE Serial Number.
    b. To resolve the issue,
        i. if conflict is between different entities, they should determine who has the right to claim the FSE based on ownership or designation agreement. CARB will not settle disagreements of ownership. An FSE deactivation request needs to be initiated by the entity that has the FSE active if they determine the new entity has the right to claim the FSE.
        ii. if conflict is with the same entity, this usually happens when the FSE has been relocated. Entity should submit an FSE deactivation prior to submitting the new registration.
3. Submitting same geo coordinates of an already registered and active FSE.
    a. Having an entity using the same geo coordinates associated with an FSE that is still active.
    b. To resolve this issue,
        i. if conflict is between different entities, they should determine who has the right to claim the FSE based on ownership or designation agreement. CARB will not settle disagreements of ownership. An FSE deactivation request needs to be initiated by the entity that has the FSE active if they determine the new entity has the right to claim the FSE.
        ii. if conflict is with the same entity, and FSE has been relocated, entity should submit an FSE deactivation prior to submitting the new registration.
4. Submitting more than four Non-Residential EV Charging FSEs with same geo coordinates.

   a. For non-residential EV Charging CARB allows the same geocoordinates for a maximum of four FSEs such as when charging units are back-to-back, have dual port, or are installed in a parking structure with multiple levels. Using the same geo coordinates or only changing the 6th decimal digit of the latitude or longitude on more than four non-residential EV Charging will result in FSE rejection.
   b. To resolve the issue, submit a new FSE registration with the correct latitude and longitude for each non-residential EV Charging FSE.
5. Submitting equipment registration when the FSE should be the facility.
   a. For off-road equipment (eForklift, eTRU, eCHE, and eOGV), where the FSE is the facility where electricity is dispensed, submitting the same facility multiple times for the same off-road vehicle application, for example, submitting the same facility 10 times because they have 10 forklifts is incorrect and additional FSE registrations will be rejected.
   b. To resolve the issue, submit only one FSE registration per facility per off-road application type, for example, if in the same facility there are 10 forklifts and five eTRUs, you must submit the facility for registration only twice, one for eForklift and one for eTRU.
      i. Equipment detail information for the equipment that is getting charged at the facility can be attached using the *eCHE_eOGV_eTRU_Forklift_Equipment_Detail Template*.
6. Submitting Inaccurate FSE geo coordinates.
   a. Submitting geo coordinates that do not correspond to the physical location of the FSE. Sometimes this is caused due to a typo, or the geocoordinates were not confirmed. For example, some geocoordinates point to the middle of the street or in the middle of the ocean, or to a different address.
   b. To resolve this issue, ensure that the location of each FSE is accurate in FSE registration, latitude and longitude for each FSE should have a precision of 10 meters or less and submit a new registration.
7. Providing incorrect address.
   a. Submitting a correct latitude and longitude for the FSE but with a wrong street name, city or zip code or an address that does not correspond to the place where the FSE or FSEs are installed. Common mistakes include typos in the street name or zip code, incomplete address, incorrect zip code, address changes

incrementally because of scrolling the address field on the file for the rest of the FSEs.

b. To resolve this issue, ensure the address is complete and has no typos, that the address is in California and that the address corresponds to the FSE location.

8. Selecting incorrect FSE charging type.
    a. One of the most common situations is when the non-residential EV charging FSE is designed for vehicles with Gross Vehicle Weight Rating 14,001 pounds and greater and FSE registration is submitted as LDV/MDV – BEV or PHEV instead of selecting "On-road Heavy Duty EV Charging."
    b. To resolve this issue, confirm the charging type is for LDV/MDV or HDV and submit a new FSE registration. If the FSE was rejected but it was confirmed the original charging type was correct, include a note in the remarks during FSE registration indicating the charging type was confirmed.
9. Including an incomplete or invalid designation agreement.
    a. An FSE will be rejected if it is submitted using a designation agreement that is missing one or more of the following elements: a valid effective date, signature by the two parties, text that confirms the owner of the FSE will not generate credits and will instead provide the electricity data to the designated entity for LCFS reporting.
    b. To resolve this issue, prior to submitting FSE registration, upload an updated agreement that meets the requirements mentioned above.
    c. CARB does not have a standard template for designation agreement. It is the reporting entity's responsibility to keep all designation agreements up to date prior to submitting any FSE registration.
10. Having a "Not Processed" FSE status.
    a. Upon FSE submission, each FSE included in the registration upload template will receive a status of either "Submitted" or "Not Processed." If the FSE status is "Not Processed," it means there was at least one error in the data provided and the system did not pull the data for that FSE. CARB staff can only see registration requests with the "Submitted" status, any registrations with a "Not Processed" status are only visible to the entity.



b. To resolve this issue, review the FSE information, fix any issue(s) that could have caused the error, then submit a new FSE registration and confirm the initial status is "Submitted." Upon FSE registration review, CARB staff will change the FSE status to "Approved "or "Not Approved." If the FSE registration is rejected by CARB staff, you will receive a brief description of the reason why the FSE was not approved, and you may submit a new registration after resolving the issue.

11. Not providing designee role.
    a. An FSE registration submitted with no information in the "Designee Role" column will be rejected. This field must indicate whether there is a designee role or not.
    b. To resolve this issue, select YES or NO in the designee role field and submit the FSE registration again.
12. Multiple issues.
    a. If CARB finds many errors in a registration upload template with many FSEs, CARB may reject the entire file and request substantial edits before re-submission. It is your responsibility to confirm the accuracy of information submitted to CARB.
    b. To resolve this issue, resubmit the FSE registration with correct information.

4. FSE Approval and Processing Time

CARB receives new FSE registrations nearly every day and reviews them in the order received. If, due to high submission volume, an FSE is not processed before the end of the current reporting period, it will be reviewed in the subsequent reporting period.

CARB will not make corrections or modify any data that has been submitted by applicants. If the FSE serial number or the address has a typo, or the FSE has a new address, or the charging type should be changed, or the designee role was left blank, CARB will reject the FSE, and a new FSE registration must be submitted with correct information.

Any FSE re-submission will join at the end of the processing queue and will not be reviewed ahead of first-time submissions that came in prior to the re-submission. The entity is responsible for ensuring the information submitted to CARB is free of material misstatements. If the entity identifies there was a mistake in the information provided, and the FSE registration has not been approved yet, the entity must contact CARB via email or Correspondence requesting to withdraw the FSE registration.

Upon CARB approval of the FSE registration, the applicant will receive a unique FSEID to be used in the quarterly fuel transactions report. Each FSE will be assigned with a start date to begin reporting transactions depending on the reporting period the FSE was approved. The start date will always be the first date of a reporting period. The FSE will also have an end date that will not change unless the FSE is deactivated or the LCFS program is extended.

Per section 95483.2(b)(7)(A)1 of the LCFS regulation, an opt-in entity must continue to report fuel transactions per FSE to remain in the LCFS program.

E. Designation Agreement

The entity with the first fuel reporting rights, per section 95483(c), may designate an approved LRT-CBTS reporting entity to register FSE, report transactions, and generate credits on their behalf if the two entities agree by written contract that:

- The owner of the FSE will not generate credits and will instead provide the electricity data to the designated entity for LCFS reporting pursuant to sections 95483.2(b)(8), 95491 and 95491.1 of the LCFS regulation.
- The designated entity accepts all LCFS responsibilities as the fuel reporting entity and credit generator.

Table 3 below states which entity has the first fuel reporting rights for each electric transportation application.

Table 3. Electricity First Fueling Reporting Entities.

Category		Electric transportation application	First Fuel Reporting entity
On-road applications	**Residential EV charging** (exclusively for incremental crediting)	LDV/MDV – BEV or PHEV	1. EDU, 2. EV Manufacturer, 3. Any other entity
	Non-Residential EV charging	LDV/MDV – BEV or PHEV	Owner of the equipment capable of measuring the electricity dispensed for EV charging.
		HDV BEV or PHEV Truck or Bus	
		On-Road Electric Motorcycle	
Off-road applications	**Electric Forklifts, eCHE, eOGV, or eTRU**,	eForklift	Owner of the facility or location where electricity is dispensed for fueling. Note: A lessee of the facility or location is considered as acting as the owner unless explicit claim to credit generating rights is made by the owner.
		eTRU	
		eCHE	
		eOGV	
	Fixed Guideway system	Fixed Guideway, Heavy Rail	The transit agency operating the system.
		Fixed Guideway, Light Rail	

Category		Electric transportation application	First Fuel Reporting entity
		Trolley Bus, Cable Car, Street Car	
Other electric transportation applications	Depending on the electric transportation application, FSE refers to a fuel dispenser or a transportation equipment with the capability to measure the dispensed fuel in that equipment.	Any other application not included above.	Depending on the electric transportation application it could be either: • The owner of the equipment capable of measuring the electricity dispensed for EV charging., or • The owner of the facility or location where electricity is dispensed for fueling.

The designation agreement between the FSE owner and the reporting entity:

- Should indicate when the reporting period begins (effective date).
- Should be dated and signed by both parties.
- Should indicate whether it's for all equipment/locations or list the details of each equipment/location that the agreement is for.
- Must specify the owner of the FSE will not generate credits and will instead provide the electricity data to the designated entity for LCFS reporting.
- Must specify that the contractually designated entity accepts all LCFS responsibilities as the fuel reporting entity and credit generator.

The designation agreement, when required, must be uploaded to the Org Profile tab in the LRT-CBTS prior to submitting any FSE registration. If there are changes in the designation agreement the reporting entity should upload an updated version to the LRT-CBTS.

Entities that register and report on FSEs without a designation agreement, when required, may be subject to enforcement action and have the credits associated with transactions from ineligible FSEs invalidated.

F. Fueling Supply Equipment Deactivation

Entities submit FSE deactivations mainly to resolve the issues described in the FSE registration section above. Each reporting entity is responsible for maintaining an up to date list of registered FSEs and ensuring that each FSE registration status (Active or Inactive) accurately reflects its current operational status.

If an entity submits deactivation due to a change in FSE ownership, the ownership will not be split for partial reporting within the same period meaning one entity will keep the FSE active until the last day of the reporting period and must report only the transactions that occurred while the FSE operated under its ownership.

1. FSE Deactivation Requirements and Processing Time

CARB receives FSE deactivation requests nearly every day and CARB processes them in the order received. The reporting entity owning the FSE must send a message via Correspondence requesting an FSE deactivation and upload a letter that includes:

1. FSEID or the list of FSEIDs
2. Last reporting period that the FSE will be active
3. Note, if the list of FSEIDs contains more than 10 FSEs, include the list in an Excel file for faster processing of the deactivation request.

Upon processing the FSE deactivation, CARB staff will close the Correspondence message, and the system will send a notification to the entity indicating the request has been resolved. At this point the FSEID(s) will no longer be available for reporting transactions after the new end date but will be available for making corrections on quarterly fuel transactions reports up to the last reporting period. For example, if entity indicates last reporting period of the FSE was Q4 2025, the FSE's end date will be 12/31/2025. If the deactivation was processed during the Q4 reporting period (Jan through March), the entity will be able to include the FSE in the Q4 report, but it will not be available for transactions for Q1 2026 or any other subsequent period. The FSE will still be available to correct prior reports that are within the start and end dates for the FSE.

For eForklifts, eCHE, eTRU or eOGV where the FSE is the facility, deactivation is required only when there is a change in the facility ownership. A change in the list of equipment that measures the electricity dispensed for each application does not require a deactivation of the facility. It is optional for the entity to provide an

updated list of the equipment via Correspondence using the *eCHE_eOGV_eTRU_Forklift_Equipment_Detail Template*.

2. Common Issues During FSE Deactivation

These are the most common issues found when submitting an FSE deactivation request:

1. FSE deactivation submitted by a different entity.
    a. Only the reporting entity that has the FSE active can submit the FSE deactivation request.
    b. To resolve this issue, the entity that has the FSE(s) active within their LRT-CBTS account must submit the deactivation request through their entity account.
2. FSEID included by mistake.
    a. If an entity notices that some FSEIDs were included by mistake in the request, and the FSE deactivation has been completed, the entity must submit a new FSE registration to generate a new FSEID.
    b. If the deactivation request has not been processed yet, the entity must contact CARB to withdraw the request and submit an updated list.
3. Missing Last Reporting Period.
    a. An FSE deactivation request that does not include the last reporting period will be sent back to the entity for revisions.
    b. To resolve this issue, the entity must upload an updated letter including the last reporting period for the identified FSE(s).
4. Incorrect End Date.
    a. An FSE deactivation request that indicates a specific end date that is different than the last day of the reporting period will be sent back to the entity for revisions.
    b. To resolve this issue, the entity must upload an updated letter indicating the last reporting period or a date that corresponds to the last date of the reporting period for the identified FSE(s).

G. Fuel Pathway Code

A fuel pathway code (FPC) is an identifier associated with a specific fuel pathway carbon intensity (CI) which consists of the sum of the greenhouse gases emitted

throughout each stage of a fuel's production and use. A FPC is a required reporting element for credit calculation. Some FPCs require an application so it is important to understand the different fuel pathway classifications and fuel pathway types and submit the application on time for the reporting period if needed.

Section 95488.1 of the LCFS regulation covers all fuel pathway classifications in detail and section 95488.9 covers special circumstances for fuel pathway applications such as temporary pathways.

Table 4 summarizes the main classifications and most common fuel pathways used to report electricity in the LCFS. All fuel pathway applicants that receive pathway approval are required to submit an Annual Fuel Pathway Report (AFPR) through the AFP no later than March 31 of each calendar year to maintain the fuel pathway as indicated in section 95488.10(a) of the LCFS regulation.

Fuel pathways that contain site-specific CI data such as a Tier 1 or Tier 2 pathway require third-party validation or verification.

Zero-CI electricity Lookup Table pathways do not require third-party validation or verification because they do not contain site-specific CI data; however, fuel transactions might be subject to verification pursuant to section 95500(c)(E) of the LCFS regulation. Further information is available in the Verification section of this document.

Table 4. Most common fuel pathways for reporting electricity.

Fuel Pathway classification	Fuel Pathway type	Pathway Application required	AFPR required	Third-party pathway verification required
Lookup Table pathway Pathways falling	**California Average Grid Electricity Lookup Table Pathway** This lookup table pathway is the easiest and fastest way to report	No	No	No

Fuel Pathway classification	Fuel Pathway type	Pathway Application required	AFPR required	Third-party pathway verification required
under this classification are the simplest pathways to use and the most common pathways used by electricity reporting entities.	electricity transactions since it does not require a pathway application.			
	A fuel reporting entity may apply for a **Zero-CI Lookup Table Pathway** if they: • directly supply Zero-CI electricity, or • indirectly supply Zero-CI electricity using book-and-claim through a contractual electricity supply relationship, including the retirement of Renewable Energy Certificates (REC) or • indirectly supply Zero-CI electricity using book-and-claim through enrollment in a green tariff program offered through a utility or other load-serving entity.	Yes	Yes	No
	Smart Charging Lookup Table Pathway A fuel reporting entity may apply for the Smart Charging Lookup Table Pathway for reporting hourly use of electricity for EV charging	Yes	Yes	No

Fuel Pathway classification	Fuel Pathway type	Pathway Application required	AFPR required	Third-party pathway verification required
	to the times when marginal greenhouse gas emission rates of grid electricity are lower than the average emission rate.			
	Base credits Lookup Table Pathway This Lookup Table Pathway is exclusively used by CARB staff to issue base credits to opt-in EDUs or its designee from Residential EV charging.	No	No	No
Tier 2	These are pathways that rely on site-specific data. The Tier 2 pathway application process is designed for innovative, next-generation pathways, which may use unique feedstocks or include advanced technologies.	Yes	Yes	Yes
Tier 2 EER-adjusted	This type of Tier 2 pathway is designed for applicants supplying fuel for a transportation application that is not included in Table 5 of the LCFS regulation. i.e. tractors, e-scooters/e-bikes, etc.	Yes	No*	No

Fuel Pathway classification	Fuel Pathway type	Pathway Application required	AFPR required	Third-party pathway verification required
Temporary pathway	Pathways for fuels with Indeterminate CIs. i.e. Low-CI electricity produced by fuel cell from biomethane from dairy and swine manure. Temporary pathways are intended for short-term use, and a Tier 1 or Tier 2 pathway application should be submitted for longer term reporting use.	Yes	No	No

*An AFPR for a Tier 2 EER-adjusted pathway is only required if the entity wishes to update the EER value by providing new information for calculating the EER value.

1. **Lookup Table Pathway**

California Average Grid Electricity CI

This lookup table pathway becomes available for all electricity reporting entities once the CI is certified. Pursuant to section 95488.5 (d) of the LCFS regulation, the California Average Grid Electricity CI and the Smart Charging or Smart Electrolysis CIs are updated each year and posted in the *LCFS Pathways Requiring Public Comments website* during the first calendar quarter for a period of 45 days for public comment prior to certification.

The certified California Average Grid Electricity CI for 2026 is 65.07 g/MJ and is associated with FPC ELC000L00072026. There will be a different CI for the 2027 data year with a different FPC.

Zero-CI

Applications for a zero-CI Lookup Table pathway must be submitted through the Alternative Fuel Portal (AFP). Once the pathway application is approved, the reporting entity will be able to use the zero-CI pathway in the quarterly fuel transactions report through the LRT-CBTS portal.

Refer to the Application Checklist for the zero-CI Lookup Table pathway, available at the *Apply for an LCFS Fuel Pathway website* for specific documentation requirements.

An entity may apply to the following zero-CI lookup table pathways based on the specific method by which zero-CI electricity is supplied:

- FPC ELC049L00072025 for directly supply zero-CI.
- FPC ELC037L00072025 for indirectly supply zero-CI using book-and-claim through a contractual agreement.
- FPC ELC048L00072025 for indirectly supply zero-CI using book-and-claim through a green tariff program.

The applicant for FPCs starting with ELC049 and ELC037 must be the reporting entity while the applicant for the FPC starting with ELC048 must be the Load Serving Entity (LSE) offering a green tariff program and the fuel reporting entity must demonstrate enrollment in the specific green tariff.

The zero-CI Lookup Table Pathway may be used when the resource mix consists exclusively of zero-CI sources of electricity. Under the LCFS accounting framework, the following are defined as zero-CI sources: "eligible renewable energy resources as defined in California Public Utilities Code sections 399.11-399.36, excluding biomass, biomethane, geothermal, and municipal solid waste." Therefore, a mix comprised solely of RPS-eligible resources, e.g., solar thermal, photovoltaic, wind, RPS-eligible hydroelectric generation, ocean wave, ocean thermal, or tidal current, may be certified to use the zero-CI Lookup Table pathway CI.

Refer to *LCFS Guidance 19-01* specifically for book-and-claim accounting requirements.

Similar to electricity pathways, hydrogen providers may submit a Lookup Table pathway application for hydrogen produced by electrolysis using California

average grid electricity, zero-CI electricity, or a Tier 2 pathway application for electrolysis using non-zero CI electricity resources.

Smart Charging

Applications for the Smart Charging Lookup Table Pathway are submitted through the LRT-CBTS portal. Reporting entities must upload the following via Correspondence:

- On company letterhead, provide the following information:
  - Name of the fuel pathway requested: "Lookup Table Pathway for Smart Charging".
  - The initial calendar quarter for which the fuel pathway is requested for reporting (e.g., Q2 2026). The fuel pathway cannot be requested for a quarter for which the reporting deadline has passed.
- Hourly EV charging or electricity consumption records: To support the application, the applicant should supply source records that include, but are not limited to hourly electricity consumption logs, charging session data files or reports exported from network providers showing start time, end time, and kWh delivered per hour that will be used for calculating and reporting electricity per hour used for smart charging. This information is needed for pathway application approval, as it demonstrates that the reporting entity can measure electricity dispensed on at least an hourly basis. CARB may request additional information during its review of the Smart Charging application or after reporting under the Smart Charging pathway has started.

CARB updates the Smart Charging reporting template each year to incorporate the Smart Charging pathway CI values published on the *LCFS Pathways Requiring Public Comments website*.

After pathway approval, the entity must request the Smart Charging template from CARB and upload it as a supporting document with the QFTR. Once the document is uploaded and QFTR is submitted, please notify CARB through correspondence that fuel transactions using Smart Charging were included with the QFTR for CARB's review and credit generation.

CARB processes credit generation from Smart Charging manually so the credits and associated volumes will be added to your account after the reporting deadline has passed.

The purpose of utilizing the Smart Charging pathway is to shift charging events to occur when the most renewable energy sources are available. Smart Charging is reported by individual FSE.

FSEs included in the Smart Charging template for the quarter should not be reported under another pathway in the same quarter. If a single FSE is reported on for Smart Charging and another pathway, CARB will request that the entity either remove transactions from the QFTR or update the Smart Charging spreadsheet to remove the associated FSEs.

Base Credits Lookup Table Pathway

This pathway does not require a pathway application, and the FPC is exclusively for EDUs that opt into the program to generate base credits and meet the eligibility requirements.

Requirements for EDUs seeking eligibility to generate base credits can be found in section 95483(c)(1)(A) of the LCFS regulation. Once eligibility is approved, entities generating base credits from non-metered residential EV charging must use all credit proceeds to further transportation electrification efforts in California pursuant to section 95491(e)(5) of the LCFS regulation and meet the additional reporting requirements described in section 95491(e)(5)(A) of the LCFS regulation.

2. Tier 2

Applications for a Tier 2 pathway must be submitted through the AFP. Documentation required for this type of pathway can be found in section 95488.7(a) of the LCFS regulation.

3. Tier 2 for EER-Adjusted CI

Applicants supplying fuel for a transportation application that is not included in Table 5 of the LCFS regulation may apply for an EER-adjusted carbon intensity for reporting and credit generation purposes. Documentation required for this type of pathway can be found in section 95488.7(a)(3) of the LCFS regulation.

4. Temporary Pathway

A petition to use a Temporary pathway must be submitted online in the AFP and once approved reporting will be granted only for the quarter during which the

Temporary pathway is approved for use and the subsequent full quarter. The temporary pathways are described in Table 8 of the LCFS regulation which includes the temporary pathway for low-CI electricity produced by fuel cell from biomethane from dairy and swine manure.

H. Quarterly Fuel Transactions Report

After establishing the LRT-CBTS account, a regulated fuel reporting entity is required to report quarterly fuel transactions in the LRT-CBTS.

Electricity transactions must be reported per FSE as described in section 95491(d)(3) of the LCFS regulation. In alignment with section 95491 of the LCFS regulation, fuel reporting entities are required to upload their transactions to the LRT-CBTS during the first 45 days of the reporting period. Entities must finalize their report, upload any required documentation, and make corrections if needed during the following 45 days, and submit the QFTR by the submission deadline. Following are the established deadlines for each reporting period. If the deadline falls on a weekend or holiday as described in section 95491(b)(2) of the LCFS regulation, the deadline is moved to the following business day.

- June 30 - for the first calendar quarter (Q1) covering January through March.
- September 30 - for the second calendar quarter (Q2) covering April through June.
- December 31 - for the third calendar quarter (Q3) covering July through September.
- March 31 - for the fourth calendar quarter (Q4) of the prior year covering October through December.

The quarterly transactions can be submitted by using the Reporting Non-Liquid Fuels by FSE template that is available on the LRT-CBTS home page or by using the online manual entry in the system. The LRT-CBTS User Guide provides instructions for both options.

The template includes the following fields:

1. Organization FEIN: enter the Federal Employer Identification Number (FEIN) of the reporting party submitting the report.
2. Year: select the reporting year. Note this must match the year of the report.
3. Quarter: select the reporting quarter. Note this must match the quarter of the report.

4. Fuel Pathway Code: select the fuel pathway code associated with the correct CI value.
5. Application: select the associated electricity transportation application consuming electricity. This selection will define the EER value used in the credit calculation:
    a. LDV/MDV- BEV, or PHEV
    b. LDV/MDV – BEV or PHEV (Residential Incremental Crediting)
    c. HDV - BEV or PHEV Truck or Bus
    d. HDV/Off-Road – eCHE
    e. HDV/Off-Road – eOGV
    f. HDV/Off-Road – eTRU
    g. HDV/Off-Road – Electricity Forklifts with Lift Capacity < 12000 lbs
    h. HDV/Off-Road – Electricity Forklifts with Lift Capacity >= 12000 lbs
    i. HDV/Off-Road – Fxd Gwy HR
    j. HDV/Off-Road – Fxd Gwy LR
    k. HDV/Off-Road – Trolley, CC, SC
    l. LDV/MDV On-Road eMotorcycle
    m. Tractors*
    n. eScooters / eBikes*

*Note that some transaction types may only be used by fuel reporting entities that have a certified Tier 2 EER adjusted pathway.

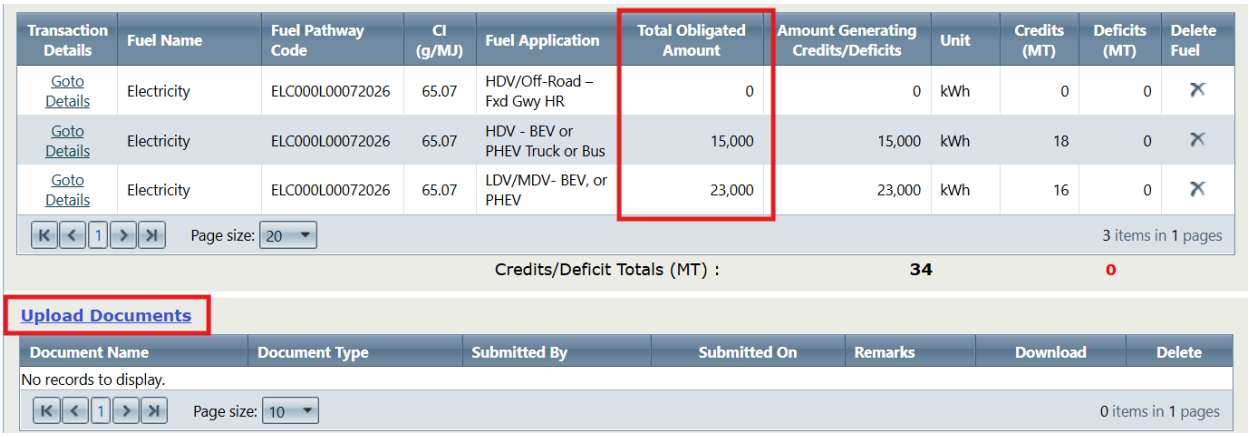
6. Transaction Type: select the associated electricity transaction type:
    a. EV Charging – Grid: when using the Lookup Table pathway for California Average Grid Electricity
    b. EV Charging – Non-Grid: when using any low-CI electricity pathway
    c. eCHE Fueling
    d. eOGV Fueling
    e. eTRU Fueling
    f. Forklift Electricity Fueling
    g. Fixed Guideway Electricity Fueling
7. Transaction Number: enter a unique identifier assigned by the reporting party to a fuel transaction. They can be alphanumeric with dashes and underscores as needed. These numbers must each remain unique within this column or the file will have data validation errors upon upload. If there are duplicated transaction numbers in this column you will receive an error after uploading the

file and no transactions associated with the duplicated transaction numbers will be uploaded.

8. Transaction Date: enter the date of the fuel transaction in the following date format "yyyy-mm-dd" (e.g., 2026-03-15). If data is aggregated, you can use the last day of the reporting period, (e.g., 2026-03-31 for the Q1 2026 period).
9. Amount: enter the kWh of the electricity dispensed for EV charging per FSE and transaction date combination. If reporting aggregated volumes then a single total kWh for the FSE may be reported.
10. Business Partner ID: for electricity transactions use the FEIN 00-0000000.
11. EPA Company ID: if the entity is using a fuel pathway that requires a pathway application, enter the corresponding Company ID to that fuel pathway application. If you are using the California average grid electricity Lookup table pathway, then this cell should be left blank.
12. EPA Facility ID: if the entity is using a fuel pathway that requires an application, select the corresponding Facility ID to that fuel pathway application. The registered facility in the AFP is the fuel production facility, or in the case of zero-CI electricity, the facility that has rights to report the electricity pathway. If you are using the California average grid electricity Lookup table pathway, then this cell should be left blank.
13. Aggregation Indicator: select True when the "Amount" of the transaction is the result of aggregated sum of fuel transactions or False if the amount is not aggregated.
14. Description: (optional) brief description associated with the fuel transaction for your records.
15. FSEID: enter the FSEID that was assigned when the FSE was approved by CARB.
16. Uptime: (only applies to FSEs that are part of an approved FCI application) it corresponds to the fraction of time that the FSE was available for charging/fueling during the quarter. Uptime must be reported for all FSEs that are part of an FCI application. FSEs with no uptime will not generate FCI credits for the quarter. If reporting multiple transactions for the same FSE, the same Uptime should be used for each transaction associated to the FSE.

In addition to the QFTR, if there are any supporting documents associated with the quarterly report, for example, a Renewable Energy Certificates (REC) retirement report, Smart Charging data report, FCI revenue and cost report, etc. these must be uploaded using the "Upload Documents" link.

Entities including the Smart Charging template as a supporting document must inform CARB via Correspondence after QFTR submission. CARB issues Smart Charging credits manually so a note via Correspondence informs CARB staff to look at your account for additional credit generation.



Transaction Details	Fuel Name	Fuel Pathway Code	CI (g/MJ)	Fuel Application	Total Obligated Amount	Amount Generating Credits/Deficits	Unit	Credits (MT)	Deficits (MT)	Delete Fuel
Goto Details	Electricity	ELC000L00072026	65.07	HDV/Off-Road – Fxd Gwy HR	0	0	kWh	0	0	
Goto Details	Electricity	ELC000L00072026	65.07	HDV - BEV or PHEV Truck or Bus	15,000	15,000	kWh	18	0	
Goto Details	Electricity	ELC000L00072026	65.07	LDV/MDV- BEV, or PHEV	23,000	23,000	kWh	16	0	

Page size: 20 — 3 items in 1 pages

Credits/Deficit Totals (MT) : 34 0

Upload Documents

Document Name	Document Type	Submitted By	Submitted On	Remarks	Download	Delete
No records to display.						

Page size: 10 — 0 items in 1 pages

If the entity does not have any approved FSE yet to report fuel transactions, the entity is still required to submit a QFTR using the No Transactions report option.

However, using the No transactions report option repeatedly may result in an account closure or suspension. Opt-in entities may reactivate the account once transactions are ready to be reported. Reporting entities must confirm that the data entered is correct and free of material misstatements prior to submission.

1. Common Issues During QFTR Submission

The most common mistakes when uploading a QFTR or entering transactions in the system are:

1. Using an old version of the Reporting Non-Liquid Fuels by FSE template: submitting a QFTR using an old version template that may not have, for example, a new FPC that the entity should have selected and instead used an old FPC with a different CI. To ensure you are using the most updated template, download a fresh template from the LRT-CBTS home page.
2. Incomplete report: submitting a QFTR that did not have all the transactions for that period.
3. Spaces: leaving spaces before a value, i.e. “FSE12345E” will cause an error message with the FSEID.

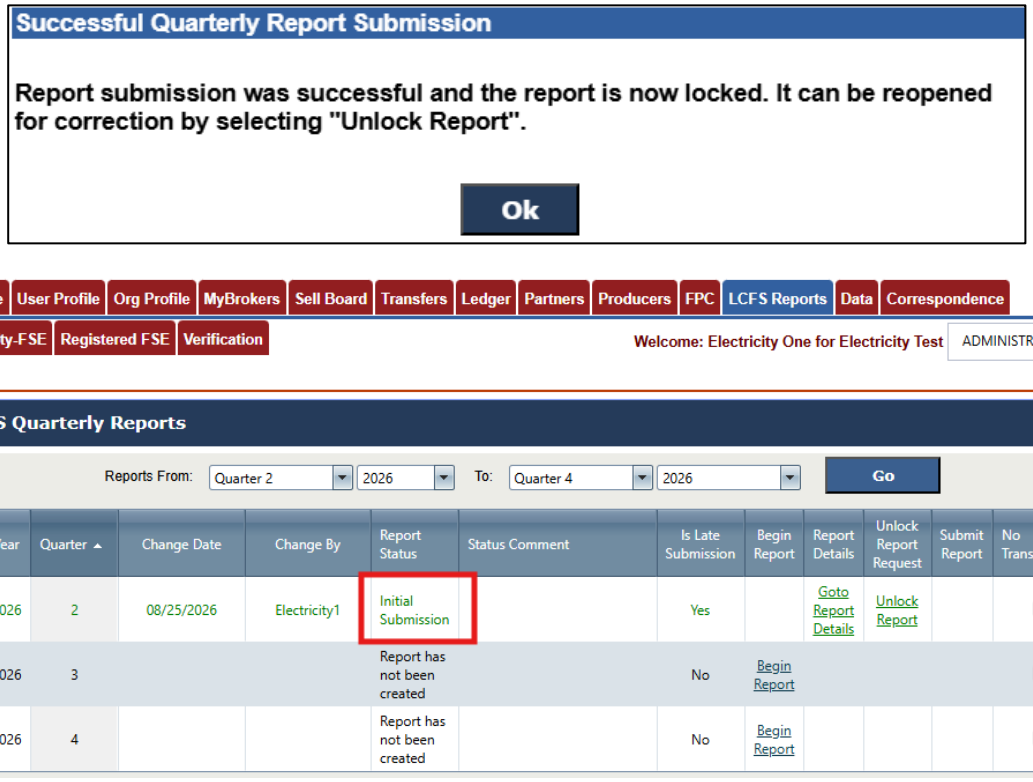
4. Invalid FSEID: using an FSEID that has been deactivated or typing an incorrect FSEID that the system cannot find.
5. Invalid transaction date: using a date in an incorrect format or a date that is not within the reporting period. For example, using YYYY-MM-DD with time i.e. 2026-03-31 2:00:39 PM; the system will not accept the value.
6. Blank Aggregation Indicator: if this field is left blank the system will not accept the file. System requires a True or False value.
7. Invalid Fuel Pathway Code: selecting a pathway that required an application and the entity has not been approved to use it or selecting an old or retired pathway.
8. Incorrect Application: selecting an incorrect fuel application type might not generate an error message but it will cause an incorrect credit calculation, therefore, entities must select the correct fuel application type for the transactions associated with a specific FSEID.
9. Amount: spaces before a value will cause an error with the amount.
10. Invalid Company ID/Facility ID: entering a value when it is not required or if the Company ID/Facility ID is not associated with the approved FPC.
11. Invalid Uptime: Entering uptime when it is not required (FSE not eligible for FCI crediting) or entering an invalid value. If uptime is required, it should be a value between 0 and 1.

If a reporting entity notifies CARB that any of the following issues happened with the equipment that measures the electricity dispensed, the reporting entity must use the missing data provisions specified in section 95491.2(b)(2).

1. The measurement device was not functional,
2. The measurement device was not calibrated within the time period recommended by the manufacturer,
3. The measurement device fails a field accuracy assessment, or
4. The measurement does not meet the measurement accuracy requirements of section 95491.2(a) of the LCFS regulation.

Further information about metering requirements can be found in section L.

Upon QFTR submission, the system will show a Successful Quarterly Report Submission message and send an email notification to all active users in the organization account. At this point, the report status should be marked as “Initial Submission”.



If an entity requires corrections to a QFTR, it must follow the steps described below depending on the time the corrections take place.

2. Corrections During an Open Reporting Period

Corrections to the QFTR associated with the open reporting period do not require CARB approval to make corrections, but CARB approval is required after corrections are made. During an open reporting period, the entity will be able to:

1. Go to the LCFS Reports tab,
2. Unlock the quarterly report,
3. Make changes or corrections to the QFTR,
4. Resubmit the corrected report before the reporting deadline,
5. Receive CARB approval of resubmission before the reporting deadline for credit generation.

3. Corrections During the Three Days Following the Reporting Deadline

Upon discovery of an error, a fuel reporting entity may request to have a previously submitted or late unsubmitted quarterly report reopened for corrective edits and

resubmittal or late submittal by submitting a Correction Request Form online in the LRT-CBTS.

Pursuant to section 95486(a)(2) no credit generator may generate or claim credits retroactively for a period for which the reporting deadline has passed. As a partial and limited exception to the prohibition on retroactive credit claims in section 95486(a)(2), the Executive Officer shall issue a percentage of the credits that would have been generated by a timely quarterly fuel transactions report up to three business days after the reporting deadline if the following conditions are met:

- The reporting entity submits a correction request in writing as specified by section 95491(h) requesting acceptance of a late submittal of an unsubmitted report for partial credit generation under this subsection.
- The reporting entity submits one complete and accurate report via the late submittal process.

For each business day after the reporting deadline and until the late submittal date, the Executive Officer will deduct, pursuant to the default prohibition on retroactive credit claims in section 95486(a)(2), 25 percent of the total credit issuance that would have occurred with a timely submission. Each late submittal request is subject to CARB review and approval.

Corrections and the late submittal during the three following days of the reporting deadline shall follow the Correction request process starting on page 62 of the *LRT-CBTS User Guide* requesting acceptance of a late submittal of an unsubmitted report for partial credit generation under section 95491(b)(2).

4. Corrections To One or Multiple QFTRs For a Quarter for Which the Quarterly Reporting Deadline Has Passed

If you need to make corrections or submit a No transactions report for a period that is closed and it does not meet the conditions mentioned above, you will follow the same correction request process starting on page 62 of the *LRT-CBTS User Guide*, however, per section 95486(a)(2) no credits may be claimed, and no deficits may be eliminated, retroactively for a quarter for which the quarterly reporting deadline has passed.

Reopening a QFTR that was included in an annual compliance report that was previously submitted will require the resubmission of the annual compliance report. For example, if an entity submitted corrections to a QFTR from 2022 and

2023, once corrections are approved by CARB, the entity must resubmit 2022 annual compliance report and then the 2023 report and all subsequent years.

Permission to submit a late report does not preclude enforcement action.

I. Credit Generation

LCFS credits and deficits are denominated in units of metric tons (MT) of carbon dioxide equivalent and are calculated using the carbon intensity benchmarks for gasoline and diesel fuel in a calendar year as provided in section 95484(d).

Upon submission and acceptance of timely reports, an opt-in electricity reporting entity may generate credits from fuel transactions reported each quarter. The total number of credits will be calculated once fuel transactions are uploaded or entered in the LRT-CBTS, except for FCI credits, and will be displayed in the QFTR summary page of LRT-CBTS account.

Credits for the open reporting period will not be available for credit transactions until they are issued in the reporting entity's Credit Balance ledger on the day after the reporting deadline, provided the credit generator has met all reporting requirements.

Base credits from residential EV charging and smart charging credits, will be issued once CARB has completed base credit calculations and reviewed smart charging data provided by entities following the reporting deadline.

Once generated, credits may be retained indefinitely, retired to meet a compliance obligation, or transferred to other entities through the LRT-CBTS.

Entities may calculate the credits/deficits using the equations described in the following sections of the LCFS regulation:

- Section 95486.1(a)(1) through (3), for general calculation of credits and deficits using fuel pathways.
- Section 95486.1(c)(1), for calculation of Base Credits from residential EV Charging exclusively to eligible EDUs per section 95483(c)(1)(A).
- Section 95486.1(c)(2), for calculation of incremental credits for residential EV charging including either low-CI electricity or smart charging:
- Section 95486.3(b)(5), for calculation of FCI credits for LDM-FCI FSEs.
- Section 95486.4(b)(3)(B), for calculation of FCI credits for HD-FCI FSEs.

CARB developed a *LCFS credit proceeds calculator* tool to predict LCFS credit proceeds and deficit costs based on the fuel for vehicle use, vehicle type, compliance year, fuel pathway carbon intensity, fuel certified pathway carbon intensity (CI), amount of fuel dispensed, and the LCFS credit price.

1. Credit Proceeds Spending Requirements

Non-Load Serving Entities (Non-LSE) generating credits from electricity must use all credit proceeds to further transportation electrification efforts in California. The credit generator must include in their annual compliance report an itemized summary of the efforts and costs associated with meeting this requirement. Please see *LCFS Guidance 20-03* for further details. CARB has developed a reporting template that may be used for the itemized summary: *Electricity Credit Proceeds Reporting Template*.

LSEs have different requirements under sections 95491(e)(5)(A)2. and 95483(c)(1)(A)5. of the LCFS regulation and may use the Guidance 20-03 and the electricity credit proceeds reporting template for demonstrating compliance.

J. Renewable Energy Certificates for Book-and-Claim Accounting for Low-CI Electricity

Pursuant to section 95488.8(i)(1) of the LCFS regulation a reporting entity using book-and-claim accounting for indirectly supplied low-CI electricity that is either used as a transportation fuel or used in electrolysis to produce hydrogen for transportation purposes (including hydrogen that is used in the production of a transportation fuel) is required to meet the following conditions:

- Deliverability: the low-CI electricity used must be supplied to the grid by a resource located within a California Balancing Authority (or local balancing authority for electrolytic hydrogen produced outside of California). For electricity generated from an out-of-state resource and supplied to the California grid, the low-CI electricity must meet the deliverability requirements of California Public Utilities Code section 399.16, subdivision (b)(1) which details the deliverability requirements for Portfolio Content Category 1 Renewable Energy Certificates (REC).
- Additionality: the low-CI electricity used must be in addition to California Renewables Portfolio Standard (RPS) requirements (or local renewable requirements for electrolytic hydrogen produced outside of California), and

the RECs or other environmental attributes of the electricity cannot be claimed under any other program with the exception of the federal Renewable Fuel Standard (RFS) and California's Cap-and-Invest program (provided that the low-CI electricity is not claimed in the Cap-and-Invest program's Voluntary Renewable Electricity (VRE) program, which prohibits claims on the renewable electricity or the use of RECs in any other voluntary or mandatory program). To demonstrate additionality to the RPS, RECs must be retired in WREGIS on behalf of the LCFS for all low-CI generation sources that are eligible to generate RECs in WREGIS. The quantity of RECs retired must correspond to the aggregate electricity quantities reported quarterly and must be retired into the LCFS-specific WREGIS sub-account corresponding to the entity.

- Time Limit: book-and-claim accounting for low-CI electricity may span only three quarters. If a low-CI electricity quantity (and all associated environmental attributes, including a beneficial CI) is supplied to the grid in the first calendar quarter, the quantity claimed for LCFS reporting must be matched to grid electricity used as a transportation fuel or used in electrolysis to produce hydrogen for transportation purposes no later than the end of the third calendar quarter. After that period is over, any unmatched low-CI electricity quantities expire for the purpose of LCFS reporting.

Refer to *LCFS Guidance 19-01* for step-by-step instructions for using the Western Renewable Energy Generation Information System (WREGIS) to retire RECs for low-CI electricity claimed in the LCFS. Only RECs from zero-CI sources may be retired to demonstrate supply of electricity reported using the zero-CI Lookup Table pathway.

Per section 95491.1(H) records used for compliance such as RECs are subject to inspection by the Executive Officer or a verification body accredited by the Executive Officer pursuant to section 95502 and must be made available within 14 days upon request of the Executive Officer. If ineligible RECs are retired, the entity is out of compliance and subject to investigation by the Executive Officer and possible enforcement action.

If the RECs submitted do not fully cover the reported electricity volumes for a closed reporting period, and the entity has additional eligible RECs available, the entity must submit a QFTR correction request and upload the certificates report to meet book-and-claim compliance requirements for low-CI electricity. If no additional eligible RECs are available, the entity must shift the unmatched volume to grid average electricity through the QFTR correction process.

K. Accounting for Fuel Loss

Fuel loss may occur between the meter and the vehicle that is being fueled. In some cases, this loss may be called a line loss or conversion loss such as converting alternating current (AC) to direct current (DC). For the purposes of LCFS reporting, only the fuel that makes it into the vehicle should be reported. Electricity chargers typically have an efficiency rating or similar indication of how much electricity is making it to the vehicle.

If the meter used for reporting LCFS volumes is at point A as shown in Figure 1 then the transaction volume must account for the efficiency rating of the charger so only the amount of electricity used by the vehicle is reported. A meter located at point C in Figure 1 may be used for LCFS reporting if it measures the amount of electricity that leaves the charger for vehicle fueling. Meters located directly on the vehicle application (point E in Figure 1) that measure the electricity entering the vehicle application may be used to report LCFS volumes without the need to account for an efficiency loss.

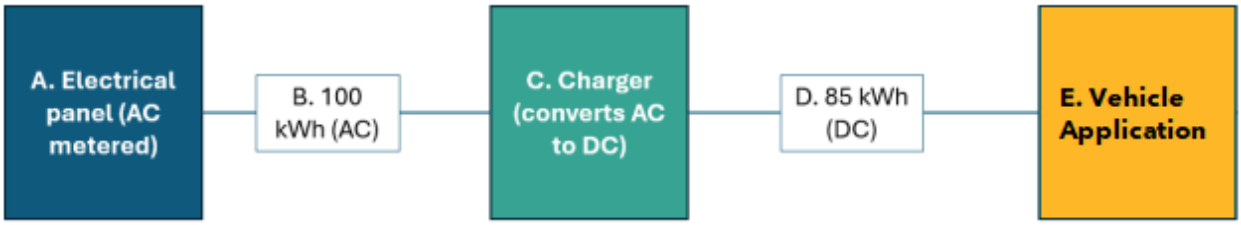


Figure 1. Simplified power conversion from an electrical panel to a vehicle.

Where an efficiency rating must be utilized, the following equation may be used:

Electricity measured x efficiency rating

Where electricity measured is the value of electricity obtained from the meter and the efficiency rating is a percentage value found in the manufacturer specifications, or 85%[1] if the manufacturer specifications do not provide an efficiency rating.

A charger located before point C in Figure 1 with an efficiency rating of 85% will have a calculation like this:

---

[1] Pacific Gas and Electric Company, Emerging Technologies Program Application Assessment Report (web link: *https://www.etcc ca.com/sites/default/files/OLD/images/stories/etcc_report_industrial_battery_chargers_final_v5.pdf*).

100 kWh x 0.85 = 85 kWh available for LCFS reporting

L. Metering Requirements

Reported LCFS data carry financial implications and must meet the accuracy standards specified in the LCFS regulation. Each reporting entity is required to document all measurement device information in a written Monitoring Plan and demonstrate that measurement accuracy is acceptable. Two primary categories of meters are relevant for LCFS reporting: financial transaction meters and internal meters. Financial transaction meters are used in transactions between unaffiliated parties and must meet CARB accuracy requirements. Most LCFS data are derived from these meters. Typical examples include utility meters or meters used to measure natural gas in a production process where the data are relied upon for billing. In practice, this means that the measurements are relied upon by suppliers and purchasers without common ownership, the meters are sealed by a county sealer of weights and measures or a certified designee, or the meters are operated by an independent third party. Calibration requirements do not apply to financial transaction meters because these meters are already subject to commercial accuracy requirements. Detailed requirements can be found in section 95103(k)(7) of the *Regulation for the Mandatory Reporting of Greenhouse Gas Emissions*.

Meters that do not meet the criteria for financial transactions are classified as internal meters. These include submeters used to track internal energy use, such as natural gas used in dryers or electricity used by specific equipment. Internal meters must be installed, operated, and maintained in accordance with manufacturer-recommended calibration frequency and precision requirements. Under section 95491.2(a), LCFS data derived from internal meters are considered accurate if these requirements are followed. When working with your verifier, it is important to set aside dedicated time to discuss conformance with measurement accuracy requirements. These discussions should emphasize procedures for addressing missing data and calibration issues.

In situations where data are missing, the reporting entity must demonstrate to the verifier that any substituted or estimated data is accurate within plus or minus five percent. If this level of accuracy cannot be demonstrated, the entity must obtain CARB approval for an alternate method of reporting the missing data pursuant to section 95491.2(b). For QFTRs, missing data substitution is now based on data capture rates using Table 13. That is, the number of valid measurement periods (such as days or months) divided by the total required measuring periods in that data year.

For a small amount of missing data, you can use an average before and after substitution method. More missing data requires a more conservative substitution method. If the entity has missing data and it is not possible to use Table 13, the entity must notify CARB and submit an alternate method request as early as possible but no later than 10 days after report submittal.

Calibration requirements apply only to internal meters. For units and processes that operate continuously and experience infrequent outages, it may not be feasible to meet manufacturer-recommended calibration schedules. In such cases, the entity may submit a written request to CARB to postpone calibration or inspection until the next scheduled maintenance outage. These postponements must follow established CARB procedures and be clearly documented in the Monitoring Plan. Verifiers are responsible for confirming that any such postponements have received CARB approval. It is important to note that dedicated utility meters qualify as financial transaction meters and are therefore exempt from calibration requirements under section 95491.1(c)(1)(G).

1. Electric Vehicle Supply Equipment (EVSE)

For electric vehicle charging applications, customer submeters used for EVSE are treated as internal meters. These meters must be checked and corrected to within plus or minus five percent accuracy in accordance with manufacturer recommendations, and at a minimum frequency of once every 6 years from the time of installation. In many cases, EVSE meters are internal to the equipment, sealed, and not accessible for in-field calibration. When a single meter serves multiple chargers or an entire circuit, the reporting entity must demonstrate either that no other electrical loads are connected to that circuit or that any non-charging loads are appropriately accounted for. Electricity meters are typically certified, such as through California Type Evaluation Program (CTEP) or National Type Evaluation Program (NTEP), at the time of installation and are not easily recalibrated, which increases the importance of maintaining proper documentation and monitoring practices to ensure continued accuracy. If an entity cannot demonstrate calibration, CARB requires a formal calibration postponement request to *LCFSVerify@arb.ca.gov*, particularly for EVSE internal meters.

Electric Vehicle Supply Equipment (EVSE), including charging stations, is regulated in California under Division 5 of the Business and Professions Code and Title 4, Division 9 of the California Code of Regulations. The California Department of

Food and Agriculture's Division of Measurement Standards established EVSE regulations effective January 1, 2020, which made enforceable the requirements contained in NIST Handbook 44, Section 3.40 for Electric Vehicle Fueling Systems. These regulations define accuracy classifications and establish implementation timelines for both alternating current and direct current fast charging systems.

2. Electric Forklifts

CARB does not approve meters for LCFS forklift meter compliance. Any marketing that claims CARB has approved of a meter or that there is only one CARB-approved meter is false. Starting with Q1 2026 QFTR reporting, the fuel reporting entity must use equipment that can measure the electricity dispensed for fueling to determine the appropriate transaction amounts for QFTR reporting. The equipment must be operating within performance specifications and the quality assurance or quality control procedures set forth in the Original Equipment Manufacturer (OEM) documentation to ensure the equipment is operating within 5 percent accuracy. If no OEM specifications exist, then the equipment must be maintained as set forth in the entity monitoring plan. The monitoring plan must include operational, maintenance, and calibration requirements to meet quality assured data requirements.

Meters that cannot distinguish between multi use fuel applications must report all kWh volume under the lowest EER of the fuel applications being charged, corresponding with the most conservative credit generation.

Manufacturer-recommended calibration frequency and precision requirements must be followed. If no manufacturer recommendation calibration frequency exists, then the measurement devices must be calibrated every 6 years. If the measurement device is not capable of calibration, then the measurement device must be replaced every 6 years or entities can follow the meter calibration postponement request process that's outlined in the *Calibration Postponement* subsection below.

3. eTRU, eCHE, eOGV, and Other

These areas will be evaluated and incorporated in future updates, and relevant agencies may be contacted for additional information in the interim:

- Quarterly Fuel Transactions Reporting: *lrtadmin@arb.ca.gov*

- Annual Verification of Quarterly Fuel Transactions: *lcfsverify@arb.ca.gov*

The *LCFS Guidance Documents, User Guides, and FAQs* webpage includes additional guidance materials for these fuel applications.

4. Vehicle Telematics

Vehicle telematics as a meter is acceptable in all cases but reported volumes must account for electricity received by the battery. If the battery telematics can only account for electricity dispensed to the battery, then fuel loss must be accounted for based on the efficiency in the manufacturer documents for the equipment.

Vehicle telematics may be coupled with EVSE meter records to distinguish between charging applications if the EVSE is unable to distinguish between vehicle types natively. For example, measuring total electricity dispensed through the electric vehicle supply equipment (EVSE) [or charging station data] and using HDV telematics to quantify energy attributable to HDV charging, with the remaining energy allocated to LDV/MDV fueling after accounting for charging efficiency or losses. LDV is more conservative for credit generation and the methodology above accounts for this. This approach is based on measurable data sources, including EVSE meter records, vehicle telematics records, and documented efficiency assumptions, which provides a transparent basis for verification and helps maintain overall energy balance. To support LCFS reporting and verification, the entity's LCFS monitoring plan should clearly document the EVSE metering data source, vehicle onboard telematics data source, in addition to the specific energy boundary represented by the telematics data (e.g., battery energy, charger energy, or grid energy). It should also include the basis for battery charging efficiency assumptions, reconciliation procedures, data retention requirements, missing data procedures, validation checks or other anomalies. The entity must ensure consistency between the EVSE metering and telematics measurement boundaries and documenting the methodology.

5. Calibration Postponement Requests

Section 95491.2(a)(2)(A) of the LCFS regulation requires a written request for postponement no less than 30 days before a calibration due date. Subsection 95491.2(a)(2)(B) specifies the information the request must include. The regulation requires resubmittal of a request for calibration postponement every 3 years.

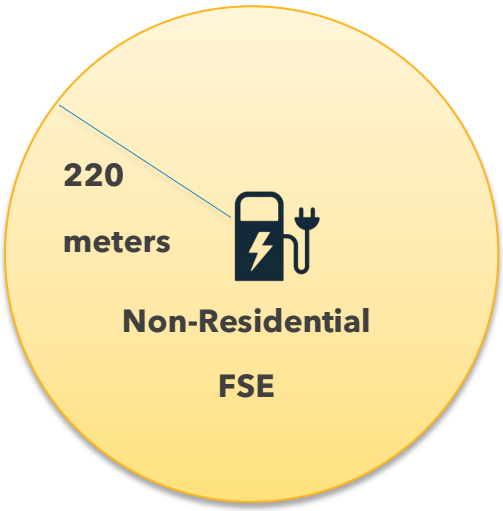
Calibration postponements must be approved by CARB before the QFTR verification deadline.

The request must be submitted to *LCFSVerify@arb.ca.gov* before the Verification Body (VB) verifies the data, so the VB only reviews the request after CARB approval. The VB must confirm if they also believe the data is indeed accurate and the reported data is also in conformance with the details provided in the CARB approval (e.g., if we include anything that must be shown to the verifier during verification).

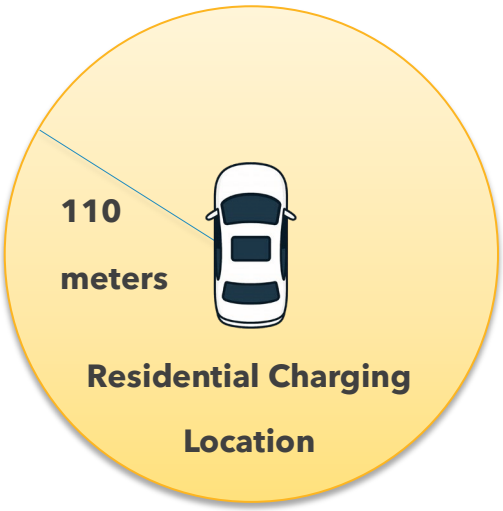
M. Geofencing for Residential EV Charging Reporting

Entities using on-vehicle telematics as the method to measure electricity used for residential EV charging and generate incremental credits, must ensure that the electricity reported corresponds solely to residential EV charging. To avoid misreporting by double counting, the quantity of electricity used for residential and non-residential EV charging must be disaggregated for each VIN by using one of the following two geofencing options.

Figure 2. Geofencing options for residential EV charging reporting.



Option 1



Option 2

1. Geofencing Non-Residential FSE Option

Vehicle location information alongside telematics data may be utilized to identify and exclude charging sessions that may have occurred at public charging stations. CARB staff has determined that a minimum Geofencing Radius (GFR) of 220 meters is reasonable to support geofencing of the public charging stations for reporting using on-vehicle telematics.

Any charging session recorded using telematics that occurs within the GFR of a non-residential charging station that is registered under the LCFS must be subtracted from the total charging measured by the vehicle telematics prior to reporting for residential incremental charging.

CARB maintains a list of all FSEs registered for non-residential EV charging in the LCFS program along with the address, latitude and longitude coordinates for each FSE on the *LCFS website* below LCFS Guidance 19-03. Reporting entities planning to use Option 1 may use this list to identify the set of locations relevant for using geofencing methodologies to report EV charging.

2. Geofencing Residential FSE Option

The reporting entity may geofence the residential location, where the EV charging will take place, with a maximum GFR of 110 meters. EV charging recorded within the permitted radius may be reported as residential EV charging.

The reporting entity using vehicle telematics for reporting residential EV charging must be able to provide records to the Executive Officer, upon request, demonstrating that the quantity of electricity reported for residential EV charging corresponds to residential EV charging only.

If using off-vehicle meters as FSE for residential EV charging, the FSE must be capable of measuring and logging electricity supplied solely for the purpose of charging a specific EV associated with a VIN, then the measured quantity of electricity dispensed during a quarter can be reported directly for claiming incremental credits.

Per section 95491.1(a) all data and calculations submitted by a reporting entity for generating incremental credits are subject to inspection by the Executive Officer or a verification body accredited by the Executive Officer pursuant to section 95502 and must be made available within 14 days upon request of the Executive Officer.

N. Annual Compliance Reporting

Submission of the Annual Compliance Report (ACR) is how entities demonstrate that their annual compliance obligation is met in conformance with section 95485(a)(1) of the LCFS regulation.

The ACR summarizes the entity's quarterly and annual LRT-CBTS activity, but may not account for Ledger adjustments such as:

- Credits Adjusted
- Deficits Adjusted
- Administrative Credit Adjustment (-)
- Retroactive Credit Adjustment

All electricity reporting entities will attach their Electricity Credit Proceeds documentation to the ACR to demonstrate spending requirement compliance.

Certain fuel transactions, such as fossil fueling, incur deficits. Submission of the ACR will retire an equal number of credits generated to deficits incurred within the compliance period. Entities will need to purchase additional credits, marked as carryback credits, if insufficient credits are available in the entity's Ledger. The carryback designation applies the acquired/purchased credits to the previous data year rather than the current compliance year. Please see section 5.5 of the *LRT-CBTS User Guide* for more details on carryback credits.

Submission of the ACR will carry any credit balance over to the next compliance year. Prior ACR submissions will automatically be re-opened if corrections are made to QFTRs of prior compliance periods. It's important to submit ACRs in order of oldest to newest so that credits and deficits carry over and retire correctly.

The ACR for the prior compliance year is due April 30th, or the following business day if it falls on the weekend, of the current compliance year. Failure to make an initial ACR submission by the reporting deadline may result in enforcement action. Section 4.2 of the *LRT-CBTS User Guide* has detailed instructions on submitting an Annual Compliance Report.

If you miss the ACR deadline, you will not be able to transfer credits until your ACR is submitted. If you have a QFTR open to make report corrections, corrections must be submitted and CARB must approve of the corrections before you can submit the ACR.

O. Annual QFTR Verification

1. Electricity Transactions Subject to Verification

Third-party verification applies to electricity transaction types that rely on reported operational and metering data, including:

- Metered Residential EV Charging under section 95491(d)(3)(B)2 (Note: applies only to incremental credits).
- Other electricity transactions associated with EV charging and electric fuel uses that generate LCFS credits based on reported transaction and metering data.

Section 95500(c) of the LCFS regulation includes verification requirements for QFTRs. Beginning in 2027 for the 2026 data year, the transaction types below must be verified by an accredited Verification Body found on the *LCFS Verification* webpage.

- Forklift Hydrogen Fueling
- Fuel Cell Vehicle (FCV) Fueling
- EV charging except as specified under section 95491(d)(3)(A) (base credits)
- eTRU Fueling
- eCHE Fueling
- eOGV Fueling
- Fixed Guideway Electricity Fueling
- Forklift Electricity Fueling

The fuel reporting entity required to contract for verification must ensure a verification statement is submitted through the LRT-CBTS by August 31 or the first business day afterwards if August 31 falls on a weekend or holiday. Information about how to route QFTRs to your verification body through the LRT-CBTS can be found in the *Verification User Guide*. You must wait until all four quarters of the data year have closed to initiate verification in the LRT-CBTS, however, you may contract with a verification body and provide initial documentation to the verification body at any time.

For EV charging categories such as DC Fast Charging Infrastructure (FCI), electricity transactions that generate credits are subject to third-party verification because they are based on reported operational, metering, and transaction-specific data used to generate LCFS credits. The same transactions are used to generate FCI

credits in the LRT-CBTS. The FCI credits are not subject to third-party verification, but the transactions that the credit calculation was based on are subject to third-party verification.

2. Electricity Transactions Not Subject to Verification

Verification does not apply to credit-generation methodologies that do not rely on reported metering data.

The LCFS regulation does not require third-party verification for:

- Base credits generated under Non-Metered Residential EV Charging pursuant to section 95491(d)(3)(A). These transactions do not rely on electricity meter data. Instead, they use a statewide or grid-average electricity consumption methodology to generate base credits.
- Credits generated from FCI fuel pathway applications.

In the case of eOGV, eCHE, eTRU, and eForklift FSEs, Verification Bodies may check for multiple FSEs incorrectly registered to the same facility or location. A verification body may audit designation agreements to ensure that the facility or location owner is the designating party, and not the equipment owner. Supplying your verification body with the equipment detail sheet for each eOGV, eCHE, eTRU, or eForklift facility can help facilitate verification.

After submitting QFTRs for all four quarters of a data year, an entity may choose to remove all transactions subject to verification, lose all associated credits, and not complete verification for that year. The entity may not remove any transactions that are for a required fuel listed in section 95482(a) of the LCFS regulation and not considered opt-in fuels listed in section 95482(b) of the LCFS regulation or exempt by section 95482(c) of the LCFS regulation.

In certain cases, a fuel reporting entity may be eligible for less intensive verification. Upon receiving a positive verification statement under full verification requirements, fuel reporting entities required to obtain the services of a verification body under section 95500 and only reporting electricity transactions identified in section 95500(c)(1)(E) of the LCFS regulation may choose to obtain less intensive verification services for the following two annual verifications of their Quarterly Fuel Transactions Reports. Less intensive verification means the verification services provided in interim years between full verifications. Less intensive verification does not require a site visit and only requires data checks and document reviews of a

submitted report based on the analysis and risk assessment in the most current sampling plan developed for compliance with verification provisions. This level of verification may only be used if the verifier can provide findings with a reasonable level of assurance.

3. Less Intensive Verification

Less intensive verifications will not be allowed if any of the following situations occur:

- There has been a change in the verification body
- An adverse verification statement or qualified positive verification statement was issued for the previous annual verification report
- A change of operational control of the entity required to obtain the services of a verification body under sections 95500 occurred in the previous year
- The verification body deems it necessary to perform a full verification to reach reasonable assurance

4. Deferred Verification

Entities may defer annual verification of transactions subject to verification for up to two years if they do not generate 10,000 or more credits and/or 6,000 or more deficits within the data year and have not deferred verification the previous two years. If the entity has deferred verification the previous two years, or has generated 10,000 or more credits and/or 6,000 or more deficits within a data year, the entity will again be subject to verification.

Entities that have previously deferred verifications will need to complete verifications for all previously deferred unverified reports. If you qualify and would like to defer verification of your annual summary of transactions, please select "Deferred Verification (§95500(b)(2)(B) or §95500(c)(2)(B))" as your verification body when creating and submitting your QFTR verification report through the Verification tab in the LRT-CBTS. You may contact *LCFSVerify@arb.ca.gov* to confirm deferral eligibility or if you have questions regarding deferral.

Quarterly review by a verification body is optional and may be conducted by your verification body but does not supersede annual verification. Conflict of Interest

forms must be submitted by the verification body and approved by CARB before verification services, quarterly review or annual verification, begins.

If an entity with transactions subject to verification is acquired by or designates another company to report on its behalf midyear, both parties must complete verification for the quarters that were reported under their LRT-CBTS account.

5. Monitoring Plan

Monitoring plan requirements are found in section 95491.1(c) of the LCFS regulation. A monitoring plan is

The monitoring plan must contain the following information:

- Designation agreements for any FSEs that the entity has been designated to report for on behalf of another entity.
- Information to allow CARB and the verification body to develop a general understanding of boundaries and operations relevant to the entity and FSE, including participation in other markets and other third-party audit programs.
- References to management practices applicable to reporting, including recordkeeping requirements.
- Explanation of the processes and methods used to collect necessary data for reporting, including identification of changes to processes and methods.
- Explanation and queries of source data to compile summary reports of intermediate and final data necessary for reporting.
- Clear identification of all measurement devices supplying data necessary for reporting with descriptions of how data from measurement devices are incorporated into the submitted report.
- Descriptions of measurement devices used to report LCFS data and how acceptable accuracy is demonstrated, e.g. installation, maintenance, and calibration method frequency for internal meters or how the criteria in MRR section 95103(k)(7) are met to demonstrate meters are financial transaction meters such that accuracy is acceptable.
- Descriptions of the procedures and methods that are used for quality assurance, maintenance, and repair of all continuous monitoring systems, flow meters, and other instrumentation used to provide data for LCFS reports.

- Original equipment manufacturer documentation or other documentation that identifies instrument accuracy and required maintenance and calibration requirements for all measurement devices used to collect necessary data for reporting.
- The dates of measurement device calibration or inspection, and the dates of the next required calibration or inspection.
- Requests for postponement of calibrations or inspections of internal meters and subsequent approvals by the Executive Officer.
- A listing of the equation(s) used to calculate flows in mass, volume, or energy units of measurement, and equations from which any non-measured parameters are obtained, including meter software.
- Identification of job titles and training practices for key personnel involved in LCFS data acquisition, monitoring, reporting, and report attestation, including reference to documented training procedures and training materials.
- Records of corrective and subsequent preventative actions taken to address verifier and CARB findings of past nonconformance and material misstatements.
- Log of modification to reports corrected after attestation in response to review by third-party verifier or CARB staff.
- Written description of an internal audit program that includes data report review and documents ongoing efforts to improve the entity's LCFS reporting practices and procedures, if such an internal audit program exists.
- Methodology used to assign fuel dispensing to each certified FPC used in the report if not using a method prescribed/suggested by CARB. If using a CARB suggested methodology, the methodology should be referenced.
- Description of steps taken and calculations made to aggregate data into reporting categories, for example aggregation of quarterly fuel transactions per FPC.

Questions about the monitoring plan may be sent to *LCFSVerify@arb.ca.gov*. During verification services, the verification body may discover errors that must be corrected in your monitoring plan.

6. Risk-Based Approach to Verification

Verification of LCFS data is conducted using a risk-based approach designed to ensure data accuracy, system reliability, and proper documentation. Verifiers

typically select a subset of sites for inspection based on a risk assessment and sampling plan, meaning that not every site/FSE will necessarily be visited. The central location where records are maintained is generally the primary site for verification activities, while additional site visits or remote assessments may be conducted as needed to achieve reasonable assurance. In making these determinations, verifiers consider factors such as the number and geographic distribution of sites, differences in operational controls, and variations in data collection or reporting systems.

During site visits, verifiers may confirm the location and configuration of charging equipment, inspect charging ports and connectors, and evaluate the condition of hardware components such as screens, cables, and payment systems. They may also assess software functionality, including billing systems, authentication processes, and the management of software updates, as well as overall uptime and operational reliability. Verifiers that would like to observe a charging event to understand how the data is managed should make that request of the operator well in advance of the site visit.

Most electric vehicle charging companies rely on digital, networked systems to collect and manage data from their charging infrastructure. As a result, verifiers often review system-generated reports from service providers (ChargePoint, Blink, etc.) and evaluate the integrity of these data systems and associated controls.

As the program continues to evolve, CARB may issue additional guidance to support implementation, including approved equipment lists or clarification on calibration postponement eligibility for specific charger models. Verification bodies are expected to continue applying risk-based methodologies that balance thoroughness with practical considerations while ensuring compliance with LCFS requirements.

P. Hypothetical Example: From QFTR Reporting to Annual Verification

Consider a hypothetical reporting entity, Electricity Company Networks, that operates a network of electric vehicle charging stations and reports electricity use under the LCFS through quarterly fuel transaction reports (QFTR). Over the course of a compliance year, Electricity Company Networks reports a total of 6,000,000 kWh across Q1 through Q4, using a combination of utility bills and charger network data.

For a high-volume FSE (FSE A), the company reports 500,000 kWh in Q1 based on charger data reconciled to utility invoices. At another FSE (FSE B), approximately 50,000 kWh in Q2 are estimated due to missing meter data, but the estimation approach is not formally documented. At year-end, Electricity Company Networks undergoes third-party verification.

The verifier conducts a risk assessment and selects FSE A and FSE B for detailed testing due to their size and use of estimated data.

For FSE A, the verifier traces reported values back to utility records and determines that 10,000 kWh of non-vehicle electricity use was incorrectly included.

For FSE B, the verifier finds that the 50,000 kWh estimate is unsupported due to lack of documentation. Additional minor discrepancies totaling 5,000 kWh are identified across other sampled FSEs.

Table 5. Summary of findings and corrections.

FSE / Category	Quarter	Reported Volume (kWh)	Issue Identified	Adjustment (kWh)	Verified Volume (kWh)
FSE A	Q1	500,000	Non-EV load included	-10,000	490,000
FSE B	Q2	50,000	Unsupported estimate	-50,000	0
Other FSEs	Q1 to Q4	5,450,000	Minor discrepancies	-5,000	5,445,000
Total	**Annual**	**6,000,000**	**---**	**-65,000**	**5,935,000**

The verifier aggregates these findings across all quarters, resulting in a total discrepancy of 65,000 kWh. Electricity Company Networks corrects the identified errors through the QFTR correction process and submits revised data for verification through the LRT-CBTS. Following these adjustments, the verifier concludes that the dataset is free of material misstatement and issues a positive verification statement.

This example demonstrates that verification focuses on data traceability, proper attribution of electricity use, and adequate documentation. It also highlights that estimated data and high-volume sites receive increased scrutiny, and that errors across multiple quarters are evaluated collectively in determining whether reported data are materially accurate.

Q. Contacts

For assistance, please visit the *LCFS Contact Page*.

- LRT-CBTS related: *LRTAdmin@arb.ca.gov*
- AFP related: *LCFSPathways@arb.ca.gov*
- Tier 1 & 2 pathways: *LCFSPathways@arb.ca.gov*
- Tier 2 EER adjusted pathways: *LCFSWorkshop@arb.ca.gov*
- Verification related: *LCFSVerify@arb.ca.gov*