

Low Carbon Fuel Standard Guidance on Quarterly Reporting for Forklifts (25-01)

Contents

A. Introduction	2
B. Forklift Fueling Supply Equipment Registration	2
C. Transaction Reporting for Quarterly Fuel Transactions Reports (QFTR)	3
1. General QFTR Requirements	3
Fuel Pathway Code	4
Transaction Date.....	4
Business Partner	4
Transaction Quantity.....	4
Transaction Number	5
FSE ID	5
Fuel Production Facility	5
2. Electricity Forklifts	5
Fuel Application	6
Transaction Type.....	6
UPTime	6
Required Documents.....	6
Metering Requirements	6
Accounting for fuel loss.....	7
3. Hydrogen Forklifts	8
Fuel Application	8
Transaction Type.....	8
UPTime	9
4. Propane Forklifts	9
Fuel Application	9

Transaction Type.....	9
D. Rental Fleets (electric forklifts)	9
E. Verification Requirements	10
1. Deferred Verification	10
F. Contacts	11

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 has 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 quarterly reporting of forklift equipment using electricity, hydrogen, or propane as a fuel in the LCFS Reporting Tool Credit Bank and Transfer System (LRT-CBTS).

B. Forklift Fueling Supply Equipment Registration

To report fuel dispensing volumes for forklifts you first need to register Fueling Supply Equipment (FSE). If the Facility-FSE tab is not available to you, you must navigate to your organization profile page and select the appropriate registration categories for reporting forklifts, either Electricity > Electric Forklift, Hydrogen (H2) > Hydrogen Forklift, and/or Propane > either fossil propane or renewable propane. In addition, you must have the Admin role with Signatory Authority to submit a FSE Registration Upload for review.

LCFS guidance 19-04 for fueling supply equipment details the information needed to register a FSE. You can find the FSE registration guidance and other guidance materials on the [LCFS Guidance Documents & FAQs](#) webpage.

C. Transaction Reporting for Quarterly Fuel Transactions Reports (QFTR)

Quarterly Fuel Transactions Reports are required to be completed to generate credits or deficits in the LCFS.

QFTRs must be submitted in the LRT-CBTS by:

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

Please see the LCFS [annual compliance calendar](#) for additional details and reporting deadline.

1. General QFTR Requirements

To manually report fueling for forklift equipment registered in the LRT-CBTS, the following fields of the QFTR must be completed:

- Fuel Name
- Fuel Application
- Fuel Pathway Code
- Transaction Date
- Business Partner
- Transaction Quantity
- Transaction Number
- Transaction Type
- FSE ID
- Fuel Production Facility - only required when using a fuel pathway code that requires a fuel pathway application

Fuel name, fuel application, and transaction type vary depending on the type of fuel that is dispensed to the forklifts. Further information on these is included in the Electricity, Hydrogen, and Propane sections below.

Section 4 of the [LRT-CBTS User Guide](#) provides additional details on manual and template QFTR fuel reporting.

Fuel Pathway Code

Only fuel pathway codes that have been certified for use in the quarter may be used. If you enter information into the LRT-CBTS manually or via the Excel template upload you will only see active fuel pathway codes in the drop-down menu. An “outside of the effective date range” error will be shown if you attempt to upload a template with a fuel pathway code that is not active.

Transaction Date

The transaction date must be a date within the quarter; for example, if you are reporting for Q3 during the fourth calendar quarter of the year then the date must be between July 1 and September 30. If you are reporting an aggregated volume, such as the full amount of fuel dispensed at that FSE for the 3-month quarter then you may use the last day of the quarter as the transaction date, e.g. March 31 (Q1), June 30 (Q2), September 30 (Q3), or December 31 (Q4).

The transaction date if entered manually must be in mm/dd/yyyy format. If using the Excel template, the transaction date will be shown in yyyy-mm-dd format.

Business Partner

A business partner for the purposes of LCFS is the buyer or seller of the fuel and it is only necessary for liquid fuels reporting. For forklift reporting the “Not Applicable (00-0000000)” option should be used.

Transaction Quantity

The transaction quantity is the amount of fuel dispensed to that FSE during that quarter or on the specific transaction date indicated. For electricity the transaction quantity must be reported in kilowatt hours (kWh), for hydrogen the transaction quantity must be reported in kilograms (kg), and for propane the transaction quantity must be reported in gallons (gal).

The section on metering requirements contains additional information for determining the transaction quantity that can be reported for LCFS credit generation.

Transaction Number

The transaction number is a unique identifier that you can use to reference this transaction at a later point. You may enter a unique transaction number or allow the LRT-CBTS to generate one for you. If you leave the transaction number field blank then a unique identifier will be generated for you.

FSE ID

After an FSE has been approved by CARB, it is available for reporting the amount of fuel dispensed for use through a QFTR. All forklift reporting must be attached to an FSE that is registered by your entity and was approved for reporting within the reporting quarter. The FSE ID is generated at the time CARB approves of the equipment for use. Your registered FSEs, including the start and end dates for reporting can be found on the "Registered FSE" tab of the LRT-CBTS.

Fuel Production Facility

A fuel production facility is the registered facility in the alternative fuels portal where the fuel was produced, or in the case of zero-CI electricity, the facility that has rights to report the fuel dispensing. Reporting of CARBOB, Diesel, fossil propane, fossil CNG, or grid average electricity does not require you to input a fuel production facility.

2. Electricity Forklifts

Beginning with the 2026 data year reporting (Q1 2026 QFTR), the quantity of electricity dispensed (in kWh) must be reported by facility or location where electricity dispensing occurs.¹ Estimation of kWh will no longer be accepted starting with Q1 2026 quarterly fuel transaction reports. The quantity of electricity may be estimated using CARB's previously approved methodology through Q4 2025 reporting.

Forklifts using electricity as a fuel may use the lookup table pathway for grid average electricity which does not require a fuel pathway application or identification of a fuel production facility. All other electricity pathways require a

¹ Section 95491(d)(3)(E) and 95483.2(b)(8)(B)6 of the LCFS regulation.

fuel pathway application and the identification of a fuel production facility for QFTR reporting.

Fuel Application

The fuel name for eForklifts is Electricity. Effective starting with Q3 2025 reporting, only 2 application types are available for reporting forklift charging.

- "HDV/Off-Road - Electricity Forklifts with Lift Capacity < 12,000 lbs."
- "HDV/Off-Road - Electricity Forklifts with Lift Capacity >= 12,000 lbs."

If you cannot distinguish between lift capacities for forklift charging events then you must report all volumes under the lowest credit generating application type, which is "HDV/Off-Road - Electricity Forklifts with Lift Capacity < 12,000 lbs."

Transaction Type

Reporting of eForklift dispensing must use "Forklift Electricity Fueling" as the transaction type.²

UPTime

UPTime for electricity can only be reported for equipment that is approved for Fast Charging Infrastructure crediting. UPTIME is the fraction of time that the FSE is available for charging during the calendar quarter.

Required Documents

If you report electricity using a zero-CI lookup table pathway, you must upload a supplemental document with the QFTR identifying the renewable energy certificates associated with the QFTR volumes reported that were retired in WREGIS.

Metering Requirements

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

² Section 95491(d)(3)(E) of the LCFS regulation.

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.³

Accounting for fuel loss

Fuel loss may occur between the meter and the forklift 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 forklift should be reported. Electricity chargers typically have an efficiency rating or similar indication of how much electricity is making it to the forklift.

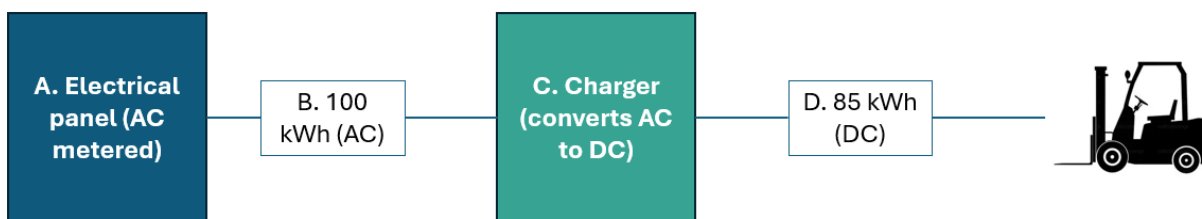


Figure 1. Simplified power conversion from an electrical panel to a forklift.

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 forklift 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 forklift fueling. Meters located directly on the forklift that measure the electricity entering the forklift may be used to report LCFS volumes without the need to account for an efficiency loss.

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

$$\text{Electricity measured} \times \text{efficiency rating}$$

Where electricity measured is the value of electricity obtained from the meter and the efficiency rating is a percentage value found in the manufacturer

³ Section 95481 "Quality-assured data"

specifications, or 85%⁴ 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:

$$100 \text{ kWh} \times 0.85 = 85 \text{ kWh available for LCFS reporting}$$

Only the molecules of the fuel that make it into the vehicle may be reported for LCFS credit generation.

3. Hydrogen Forklifts

The first fuel reporting entity for hydrogen fuel cell forklifts is the fleet owner. If you report forklifts using hydrogen as fuel you must apply for a fuel pathway and identify a fuel production facility for QFTR reporting. No lookup table pathway exists for reporting hydrogen dispensing without a fuel pathway application.

Fuel Application

The fuel name for hydrogen forklift reporting is Hydrogen. Effective starting with Q3 2025 reporting only 2 application types are available for reporting hydrogen dispensing to forklifts.

- "HDV/Off-Road - H2 Fuel Cell Forklifts with Lift Capacity < 12,000 lbs."
- "HDV/Off-Road - H2 Fuel Cell Forklifts with Lift Capacity >= 12,000 lbs."

If you cannot distinguish between lift capacities for forklift dispensing events then you must report all volumes under the lowest credit generating application type, which is "HDV/Off-Road - H2 Fuel Cell Forklifts with Lift Capacity < 12,000 lbs."

Transaction Type

Reporting of hydrogen dispensing for forklifts must use "Forklift Hydrogen Fueling" as the transaction type.⁵

⁴ 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).

⁵ Section 95491(d)(4)(B) of the LCFS regulation.

UPTime

UPTime is the fraction of time that the FSE is available for fueling during the calendar quarter. UPTime can only be reported for equipment that is approved for Hydrogen Refueling Infrastructure crediting.

4. Propane Forklifts

The quantity of propane dispensed for propane forklifts must be reported in gal. Forklifts using propane as a fuel may use the lookup table pathway for fossil propane which does not require a fuel pathway application or identification of a fuel production facility. All renewable propane pathways require a fuel pathway application and the identification of a fuel production facility for QFTR reporting.

Fossil propane is a LCFS-required fuel and any dispensing of it must be reported through the QFTR. Failure to report fossil propane dispensing may result in enforcement action.

Fuel Application

The fuel name for propane forklift reporting is Propane. The fuel application "Propane Forklifts" must be used for reporting propane dispensing to forklifts.

Transaction Type

Reporting of propane dispensing for forklifts must use "Propane Fueling" as the transaction type.⁶

D. Rental Fleets (electric forklifts)

Effective July 1, 2025, for Q3 2025 reporting, the owner of the facility or location is the first fuel reporting entity for electric forklifts. The FSE registered for reporting is the facility or location where charging occurs. A rental fleet of forklifts may be used at multiple locations throughout the reporting quarter or compliance year. If each location is registered separately under the appropriate first fuel reporting entity or their designee, then charging events may be reported for the same forklifts at different FSEs within the same quarter. When the fleet of forklifts is deployed to a new location, the new location must be registered as an FSE to report volumes for credit generation.

⁶ Section 95491(d)(5)(A) of the LCFS regulation.

Rental fleet owners and/or the fuel reporting entity should keep records indicating where forklifts are located and charging during the calendar quarter. Records may include but are not limited to rental agreements, meter records if the serial number is recorded during charging, or geocoordinate data if available. CARB or a verification body may request access to records that support credit generation⁷, which may include records of the location of the forklift during a charging event.

E. Verification Requirements

Section 95500(c) of the LCFS regulation includes verification requirements for QFTRs. Beginning in 2027 for the 2026 data year, forklifts reported using transaction types “Forklift Hydrogen Fueling” and “Forklift Electricity Fueling” must be verified by a verification body. 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 our general reporting guidance for annual reports (LCFS Guidance 22-01) on the LCFS [Guidance Document and FAQs](#) webpage.

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.

1. Deferred Verification

An entity that reports transaction types for “Forklift Hydrogen Fueling” and “Forklift Electricity Fueling” may elect to defer verification requirements for up to two years if you do not generate 6,000 or more credits or 10,000 or more credits if fuel transaction types identified in section 95500(c)(1)(D) through (E) are reported, and also do not result in 6,000 or more deficits in LRT-CBTS during the prior calendar year. If deferred, verification statements for all prior unverified reports must be submitted by August 31 of the year verification is required. Entities that would like

⁷ Section 95491.1(a)(1)(H) of the LCFS regulation.

to request eligibility confirmation may email LCFSVerify@arb.ca.gov after reporting for the data year completes.

Any fuel quantity reported under a pathway with biomethane or hydrogen supplied using book-and-claim accounting pursuant to section 95488.8(i)(2) of the LCFS regulation is not eligible for deferred verification.

F. Contacts

For questions about the information provided in this guidance, please email LRTAdmin@arb.ca.gov.