



Regulatory Guidance

May 2016



Low Carbon Fuel Standard (LCFS) Regulatory Guidance 16-03

Guidance on Exemption for Fuel Used in Interstate Locomotives

SCOPE

Section 95482(d)(2) of the Low Carbon Fuel Standard (LCFS) regulation¹ exempts fuel consumed in interstate locomotives from the LCFS compliance obligation. This Guidance offers an accounting and reporting method to facilitate the use of this exemption. It explains how railroads can claim this exemption in the LCFS reporting tool (LRT-CBTS), and it addresses questions related to claiming the exemption for interstate locomotive use and the prohibition for passing on the LCFS obligation to purchasers of fuel “below-the-rack².”

TERMS AND DEFINITIONS

Intrastate locomotive: California’s fuel regulations³ define an intrastate locomotive as one for which at least 90-percent of one or more of the following occurs within California:

- Annual fuel consumption,
- Annual hours of operation, or
- Annual rail miles traveled

In the following paragraphs, this approach to locomotive classification is referred to as the “90-percent rule.”

Interstate locomotive: A locomotive that cannot be classified as intrastate under the 90-percent rule is an interstate locomotive.

High horsepower locomotive (e.g. line haul, road, etc.): Locomotives rated equal to or greater than 4,000 horsepower. This term originates from ARB’s 2009 Technical Options to Achieve Additional Emissions and Risk Reductions from California Locomotives and Rail Yards.⁴

¹ California Code of Regulations, Title 17

² California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10, §95483(a)(2).

³ California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 7.5, §93117. **Airborne Toxic Control Measure to Reduce Particulate Emissions from Diesel-Fueled Engines - Standards for nonvehicular Diesel Fuel Used in Intrastate Diesel-Electric Locomotives and Harborcraft.**

⁴ ARB. 2009. Technical Options to Achieve Additional Emissions and Risk Reductions from California Locomotives and Rail yards. <http://www.arb.ca.gov/railyard/ted/083109tedr.pdf>.

Low horsepower locomotive (e.g. switcher, passenger locomotives, etc.): Locomotives powered by a single medium-speed, diesel-fueled engine rated less than 4,000 horsepower.

STEP 1: INTRASTATE FUEL USE ESTIMATION

This section describes the method to estimate the total volume of intrastate fuel use. This method extrapolates total intrastate fuel using data from fuel monitoring systems installed on a subset of the intrastate fleet.

Railroads will first divide their fleets into high and low horsepower categories. Every locomotive operating in California must be placed into one of these two groups.

Within the high and low horsepower categories, locomotives must be further subdivided into inter- and intrastate categories. This is accomplished by applying the 90-percent rule set forth in the Terms and Definitions section, above. The 90-percent rule shall be applied on a calendar-year basis and locomotives shall be categorized into inter- and intrastate categories based on use patterns from the previous calendar year.

Total intrastate fuel consumption is then derived from the following equation:

$$Fuel_{Intra} = \frac{N_{Intra} * Fuel_{Measured}}{N_{Measured}}$$

Where:

- $N_{Measured}$ = The number of intrastate locomotives for which fuel consumption data is being systematically collected using a device such as Witronix GPS-enabled fuel consumption data loggers.⁵
- N_{Intra} = The annual intrastate locomotive count from the prior year (as determined using the 90-percent rule).
- $Fuel_{Measured}$ = The fuel consumed in $N_{Measured}$ locomotives for the quarter in question.
- $Fuel_{Intra}$ = Fuel consumption by the intrastate fleet for the quarter in question.

The above calculation should be conducted separately for each locomotive type (high and low horsepower).

STEP 2: CLAIMING THE EXEMPTION FOR ABOVE-THE-RACK FUEL VOLUMES

The railroad has the ability to take on LCFS obligation for the fuel purchased above the rack.⁶ The railroad must do so for any above-the-rack volumes it wishes to claim as exempt under the method outlined in this guidance.

⁵ The number of intrastate locomotives supplying fuel consumption data must be at least 50 percent of the previous year's intrastate fleet until Dec. 31, 2017, and 2/3 of the previous year's intrastate fleet thereafter.

⁶ See § 95481(a)(1) and § 95483(a)(2)

If a railroad has purchased some fuel above the rack without LCFS obligation this fuel is not eligible to be claimed as exempt. In this case, the intrastate fuel volume estimate calculated above must be prorated as shown below:

$$Fuel_{Intra,Obligated} = Fuel_{Intra} * \frac{Fuel_{Obligated}}{Fuel_{Above}}$$

Where:

$Fuel_{Intra}$ = Intrastate fleet fuel consumption expressed on the basis of the prior year's locomotive count. This is the value calculated in Step 1 above.

$Fuel_{Obligated}$ = Total volume of fuel purchased with obligation above the rack.

$Fuel_{Above}$ = Total volume of fuel purchased above the rack.

$Fuel_{Intra,Obligated}$ = The intrastate fleet fuel volume carrying an LCFS obligation.

The volume of obligated fuel that can be exempted associated with above-the-rack purchases for the interstate fleet is calculated as the total fuel purchased with obligation above the rack, minus the total intrastate fleet fuel carrying a LCFS obligation, calculated as:

$$Fuel_{Exempt,Above} = Fuel_{Obligated} - Fuel_{Intra,Obligated}$$

STEP 3: CLAIMING ADDITIONAL EXEMPTION FOR FUEL PURCHASED BELOW THE RACK

Consistent with section 95483(a)(2) of the rule, additional exemption may be claimed associated with fuel purchased below the rack (and therefore without the railroad taking the LCFS obligation) but used in the interstate fleet. The magnitude of this portion of the exemption claim cannot exceed the magnitude of $Fuel_{Intra,Obligated}$.

This portion of the exemption is calculated as follows:

$$Fuel_{Exempt,Below} = Fuel_{Below} * \frac{Fuel_{Total} - Fuel_{Intra}}{Fuel_{Total}}$$

Where:

$Fuel_{Below}$ = Volume of fuel purchased below the rack for the quarter in question.

$Fuel_{Total}$ = Total volume of fuel purchased (both above and below the rack) for the quarter in question.

$Fuel_{Intra}$ = Same as in prior equations.

$Fuel_{Exempt,Below}$ = Exempt fuel below the rack.

When a railroad is claiming this exemption for below-the-rack purchases, the railroad must have a written agreement with the party holding the LCFS obligation for the specified volumes indicating that the counterparty understands that the railroad plans to claim the exemption for a portion of the below-the-rack purchases. This document must be retained and submitted to ARB upon request.

NUMERICAL EXAMPLE

To illustrate this approach assume the following:

- Fuel-consumption data exists for 75 intrastate locomotives; five are high horsepower and 70 are low horsepower units. Fuel consumption data has been collected using a GPS-enabled data logger ($N_{Measured}$).
- The annual intrastate locomotive counts from the prior year (N_{Intra}) are seven high horsepower locomotives and 75 low horsepower units.
- Current intrastate fuel consumption, as determined from the data-logger (see first bullet above) is 1,000,000 gallons for the high horsepower locomotive units and 1,500,000 gallons for the low horsepower units.
- Total fuel purchased above the rack in-state is 10,000,000 gallons.
- Total fuel purchased above the rack with obligation is 8,500,000 gallons.
- Total fuel purchased below the rack is 10,000,000 gallons.

Step 1: The volume of fuel consumed by intrastate locomotives comes out to be:

$$Fuel_{Intra\ for\ High\ HP\ Locom} = \frac{(7) * (1,000,000)}{5} \text{ or } 1,400,000 \text{ gal}$$

$$Fuel_{Intra\ for\ Low\ HP\ Locom} = \frac{(75) * (1,500,000)}{70} \text{ or } 1,607,143 \text{ gal}$$

Step 2: The intrastate fuel use total is then prorated by comparing the amount of LCFS obligated fuel relative to total fuel purchases above the rack. In this example the fraction is 0.85 (8,500,000/10,000,000). The proportion of total intrastate fuel consumption that incurs a reporting obligation is therefore:

$$Fuel_{Intra, Obligated} = (1,400,000 \text{ gal} + 1,607,143 \text{ gal}) * 0.85 \text{ or } 2,556,072 \text{ gal}$$

The volume of above-the-rack obligated fuel that can be exempted is the total obligated fuel minus the portion of total obligated fuel purchases prorated to the intrastate locomotive fleet. Continuing with the example, the total above-the-rack exempt obligated fuel volume comes out to be:

$$Fuel_{Exempt, Above} = 8,500,000 - 2,556,072 = 5,943,928 \text{ gal}$$

Step 3: The volume of below-the-rack fuel associated with the interstate fleet is:

$$Fuel_{Exempt,Below} = 10,000,000 * \frac{20,000,000 - 3,007,143}{20,000,000} = 8,496,429 \text{ gal}$$

But the additional below-the-rack amount that can be claimed as exempt must be less than 2,556,072 ($Fuel_{Intra,Obligated}$), so the total additional exemption is never greater than (but may be equal to) the railroad's total obligation in the program for the quarter:

$$Fuel_{Exempt,Total} = Fuel_{Exempt,Above} + MIN(Fuel_{Exempt,Below}, Fuel_{Intra,Obligated})$$

$$5,943,928 + 2,556,072 = 8,500,000 \text{ gal}$$

LRT-CBTS SUBMISSION REQUIREMENTS TO CLAIM EXEMPTION

To claim this § 95482(d)(2) exemption, the railroad must report fuel volumes purchased with LCFS compliance obligation (transaction type "Purchased with Obligation") as well as fuel purchased without LCFS compliance obligation (transaction type "Purchased without Obligation") from each of its fuel suppliers in the LCFS reporting tool (LRT-CBTS). Fuel volumes determined to be exempt per the methodology described above, must then be entered with transaction type "Not Used for Transportation" in the reporting entity's quarterly report.

Railroads claiming the interstate exemption must submit detailed calculations demonstrating the exemption calculation on a quarterly basis. All data inputs and intermediate values for the calculations above must be shown but the following highlights the most important parts of the submission as a helpful checklist:

1. Total volume of fuel purchased in California broken out to indicate the following categories: above-the-rack no LCFS obligation, above-the-rack with LCFS obligation, and below-the-rack. Report the total quarterly volume of fuel purchased and placed into locomotive fuel tanks in California in the quarter.
2. The number of intrastate and interstate locomotives in the prior year.
3. Fuel consumption from monitored intrastate units. Railroads should collect fuel consumption data using a method to quantify fuel consumed within the State of California (e.g., Witronix GPS-enable fuel consumption data loggers) on at least 50 percent of their intrastate fleets until Dec. 31, 2017, and 2/3 of their intrastate fleets thereafter. The units chosen to be directly monitored must be a representative mix of all intrastate high and low horsepower units, including switchers, line-haul locomotives, short-haul locomotives, etc.
4. For each locomotive designated as belonging to its intrastate fleet, the railroad will specify:
 - a. How the 90-percent rule applied to that locomotive—i.e., which 90-percent rule criteria were used to categorize that locomotive as intrastate.
 - b. A summary of the data that was used to make the 90-percent rule determination.

PROHIBITION AGAINST EXEMPTING FUEL THAT IS RESOLD

The exemption described in this Regulatory Guidance only applies to fuel that is consumed in interstate locomotives. The calculation methodology for determining exempt fuel volume presented in this guidance is based on the premise that all fuel purchased by the railroad

company as reported to ARB was used for powering locomotives. The railroad company may not seek an exemption for fuel volumes if those volumes were resold.

FORCE MAJEURE

Parties shall not be responsible for failure to perform the calculations described herein when that failure is due to events or circumstances that are beyond the reasonable control of the nonperforming party, and the events or circumstances prevent a participating railroad from fully complying with the terms herein (*force majeure* events). *Force majeure* events are not limited to Acts of God and may occur at any point in the Participating Railroad's operations; they include, but are not limited to, flood, earthquake, storm, fire and other natural catastrophes, epidemic, war (whether declared or undeclared), riot, civic disturbance or disobedience, strikes, labor disputes, sabotage of facilities, any order or injunction made by a court or public agency, accommodations to the government made in connection with a state of emergency, whether or not formally declared, or the inability of a Participating Railroad to obtain or operate sufficient locomotives to meet its obligations under this Guidance). Secondary effects of *force majeure* events are also excluded under this provision. Upon becoming aware that an occurrence constitutes a *force majeure* event, the Participating Railroad must promptly notify ARB and must use its best efforts to resume performance as quickly as possible, and may suspend performance only for such period of time and to the extent necessary to return to normal operations following the occurrence of the *force majeure* event.

CONTACT INFORMATION AND STAKEHOLDERS FEEDBACK

For any questions regarding this regulatory guidance and for submitting feedback, please contact Dr. Manisha Singh, Manager, Fuels Section at (916) 327-1501 or via email at Manisha.Singh@arb.ca.gov, or Stephen d'Esterhazy, Lead Staff at (916) 323-7227, or via email at Stephen.dEsterhazy@arb.ca.gov.