



Introduction to the Low Carbon Fuel Standard

Enabling low carbon transportation solutions and the transition to widespread adoption and use of low carbon fuels.

Electricity supply effective January 1, 2022

Fall 2022 Information Session



B.C. Low Carbon Fuel Standard (LCFS)

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*Greenhouse Gas Reduction
(Renewable and Low Carbon Fuel Requirements) Act*

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Renewable and Low Carbon Fuel Requirements Regulation

The Act and Regulation can be viewed online at <http://bclaws.ca> (links on our website as well)

Supporting information is available online at <http://gov.bc.ca/lowcarbonfuels>



Renewable and Low Carbon Fuel Requirements Act/Regulations

Part 3 of the Act: Low Carbon Fuels requirements

- Part 3 applies to diesel and gasoline, and their substitutes, supplied in B.C. for transportation.
- Fuel suppliers must meet annual carbon intensity (CI) targets set by the LCFS.
- Electricity can only be identified as a Part 3 fuel when it is supplied through a charging station or other equipment that is the Final Supply Equipment (FSE) used for transportation.
- Effective Jan. 1, 2022, the person providing the electricity through the FSE is considered the Part 3 Fuel Supplier and responsible for reporting.

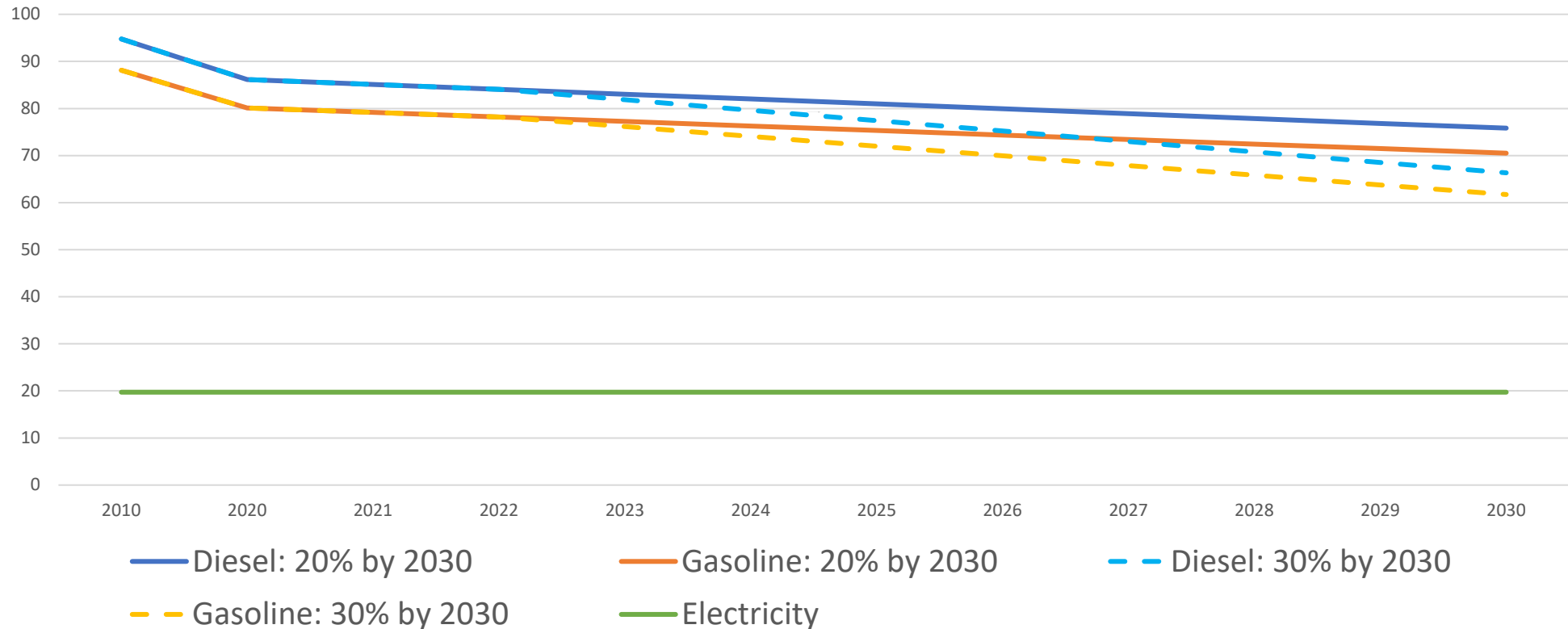


Debits and Credits

- Fuel suppliers generate credits for supplying fuels with a CI below the targets and receive debits for supplying fuels with a CI above the targets.
- At the end of each compliance period, suppliers must have a balance of zero or more credits to achieve compliance. (Those in debit will need to acquire credits to avoid penalties.)
- Credits can be traded between fuel suppliers or banked for future use.
- Credits do not expire.
- CI limit in 2022 is 84.08 gCO₂e/MJ for diesel class and 78.2 gCO₂e/MJ for gasoline class fuels.
- BC electrical grid has a CI of 19.73 gCO₂e/MJ, which means electricity is a credit generating fuel under LCFS. ([Regulation](#) sets the CI for various fuel types. See [Information Bulletin RLCF-006](#))



The carbon intensity targets (g CO₂e/MJ) reduce annually to reach 20% below 2010 levels by 2030.





Credit Calculation

Credit or Debit =

$$\frac{(CI \text{ class limit} * EER \text{ fuel} - CI \text{ fuel}) * EC \text{ fuel}}{1,000,000}$$

Where:

- Credit*** = tonnes of lifecycle CO₂ reduced relative to the CI class limit
- CI class limit*** = prescribed CI limit for the fuel class for the compliance period (gCO₂e/MJ)
- EER fuel*** = energy effectiveness ratio for the supplied fuel
- CI fuel*** = carbon intensity of the fuel supplied
- EC fuel*** = energy content of the fuel (energy density of the supplied fuel * **quantity of fuel supplied**)



Calculation Example (values with ***) are provided by [RLCF Regulation](#))

Credit or Debit =

$$\frac{(CI \text{ class limit} * EER \text{ fuel} - CI \text{ fuel}) * EC \text{ fuel}}{1,000,000}$$

- *CI Class limit** for Gasoline Class Fuel for 2022: 78.20 g CO₂e/MJ ✓
- *EER** for Electricity: 3.4 ✓
- *CI Fuel** for Electricity: 19.73 g CO₂e/MJ ✓
- *Energy Content Fuel*: Energy Density x Quantity of the Fuel
 - Energy Density* for Electricity: 3.6 MJ/kWh
 - Quantity of fuel supplied in 2022: 20,000 kWh (approximately 8 to 10 passenger vehicles)
 - *EC Fuel*: 3.6 MJ/kWh x 20, 000 kWh= 72,000 MJ ✓



Calculation Example

Credit or Debit =

$$\frac{(78.20g\ CO_2e/MJ * 3.4 - 19.73g\ CO_2e/MJ) * 72,000\ MJ}{1,000,000}$$

- Credit for 20,000 kWh in gasoline class = 17.7228 Credits (rounds to 18)
- Credits can be traded for monetary value to gas/diesel suppliers that are in debit
- Average credit price (Q3 2022): \$447.97
- Estimated value of 18 credits: \$8,063.46



Credit Market

- The credit market allows fuel suppliers that have credits (i.e., suppliers of electricity) to sell those credits to fuel suppliers that incur debits (i.e., suppliers of fossil fuels above the CI limit).
- Credit market reports are published on our website monthly and quarterly ([RLCF-017](#))
- Information [Bulletin RLCF-013](#) on the [LCFS website](#) includes fuel suppliers' contacts information for credit transfers

Time Period	Transfers (number)	Total Volume (credits)	Average Price (\$ per credit)	Minimum Price (\$ per credit)	Maximum Price (\$ per credit)
Q3 2022	37	364,882	\$447.97	\$400.00	\$490.00
Q2 2022	8	28,060	\$402.59	\$340.00	\$485.00
Q1 2022	27	247,755	\$467.32	\$345.00	\$497.77
Q4 2021	21	150,404	\$483.25	\$345.00	\$519.19



Reporting Requirements for Electricity Supply

As of January 1, 2022 (See [Information Bulletin RLCF-020](#))

- The supplier who reports electricity is the person who provides the electricity through the Final Supply Equipment (FSE), with the exception that the utility is considered the supplier in the following situations:
 - Vehicle charging at a residential building that includes fewer than five (5) dwelling units,
 - TransLink trains routes that were in operation on December 31, 2020, and
 - Electric trolley bus routes that were in operation on December 31, 2020



To report on electricity supply

- Register your Final Supply Equipment (FSE) by completing the FSE form on the [Electricity Page](#) of the LCFS website and sending it to lcfs@gov.bc.ca
- The supplier must be able to quantify the electricity supplied for transportation (kWh used to charge EVs).
 - ❖ The Ministry recommends that the FSE have a measurement system to ensure an accurate and reliable measurement of the quantity of electricity provided
 - Separate metering
 - EVSE with built-in data management capabilities



Compliance Reporting

- Each compliance period is the calendar year from January 1 to December 31
- Part 3 fuel suppliers must submit compliance reports, in accordance with the regulation, by March 31 following each compliance period
- Before the credits can be traded, they must be validated by the statutory Director, which is done through the submission of a Compliance Report via the online reporting tool called “Transportation Fuels Reporting System” (TFRS)



Transportation Fuel Reporting System (TFRS)

1. Register your Final Supply Equipment (FSE) by downloading the FSE form on the [Electricity Page](#) of the LCFS website
2. Gain access to TFRS (instructions on [TFRS page](#) of the LCFS website)
 - a) Register with BCeID and have a Business BCeID account created for each company representative.
 - b) Organization lead requests access to TFRS by emailing lcfs@gov.bc.ca
3. In TFRS, report the quantity of electricity supplied
 - TFRS User Guide will be provided by the Ministry
 - Report the total quantity of the electricity supplied through the FSE in the compliance period, include an updated FSE form as a file submission along with the compliance report.



• Transportation Fuel Reporting System (TFRS)

- Only electricity usage is needed to input. Credit formula is automatically calculated for you.

FUEL IDENTIFICATION					ENERGY SUPPLI		
Fuel Type ⁱ	Fuel Class ⁱ	Provision of the Act Relied Upon to Determine Carbon Intensity ⁱ	Fuel Code or Schedule D Entry (if applicable) ⁱ	Quantity of Fuel Supplied	Units ⁱ	Carbon Intensity Limit (gCO ₂ e/MJ) ⁱ	
✓ Electricity	Gasoline	Section 6 (5) (d) (i) - Default Carbon Intensity Value		20,000	kWh	78.2	
<div style="display: flex; align-items: center;"> + Add Row ▼ </div>					Total Credit 18 Total Debit - <hr/> Net Credit or (Debit) 18		



Third-party Representation

- Credit transfers to date have generally been large quantities, but we are starting to see smaller transfers
- Suppliers may appoint an agent to act on behalf of the supplier in dealings with the Ministry
- Under the current act, a third-party representative could act on the behalf of multiple electricity fuel suppliers to negotiate a collective sale of credits with a fuel supplier in debit.



Third-party Representation

- Submit the Representation Agreement Form found on the [Credit Market page](#) of our website to lcfs@gov.bc.ca to inform the Ministry of the agreement between the agent and the supplier
- Suppliers retain all legal responsibilities associated with its compliance with the Act and Regulation
- Credits will need to be transferred individually from each customer's TFRS account



Aggregator (2022 + 2023)

For the 2022 and 2023 compliance periods we have provided Electricity Supply Aggregating Reporting Tools on the [electricity page](#) of our website, which can allow a Part 3 Fuel Supplier to be an Aggregator.

- Aggregator must be a Part 3 Fuel Supplier
- Through representation agreements with Part 3 Fuel Suppliers, the Aggregator reports on the electricity supplied for each customer by emailing lcfs@gov.bc.ca with the [Reporting Tools](#)
- The supplier's credits are transferred into the TFRS account of the Aggregator who can then transfer the credits collectively
- Suppliers retain all legal responsibilities associated with its compliance with the Act and Regulation



Aggregator (2024+)

Beginning January 1, 2024, a person can enter into an Allocation Agreement with another person that makes the other person responsible for the fuel

The person that has been allocated responsibility for electricity supply:

- Can be any person
- Will have legal responsibilities of reporting fuel transferred to them
- Can trade credits, provided they are registered in accordance with the regulations
- Can have multiple Allocation Agreements and can aggregate credits
- Must submit only one compliance report

Intended to provide a streamlined process to generate and sell credits



Representation Summary

Compliance Periods	2022 and 2023		2024 and beyond
Representative	Agent	Aggregator	Aggregator
Who can be a representative?	Anyone	Part 3 Fuel Supplier	Anyone
Who needs a TFRS account?	Each represented Part 3 Fuel Supplier (customer)	Only the Aggregator	Only the Aggregator
Reporting process	In TFRS	LCFS email	In TFRS
Compliance Reports	Each individual supplier	Each individual supplier	Only the Aggregator
Credit transfers	Individually	Collectively	Collectively
Legal responsibility to comply with the Act	Each represented Part 3 Fuel Supplier	Each represented Part 3 Fuel Supplier	The Aggregator



'Other Transport' Applications

- Over the coming months we plan to provide clarity on various applications and their coverage by LCFS
- The Ministry would welcome BC-specific data and studies to support claims that the predominant fuel for the applications in BC is diesel and/or gasoline and will consider adding areas as the evidence justifies
- Submit sector analysis in writing to lcfs@gov.bc.ca
- We will follow-up with further consultation sometime next year.



QUESTIONS?

Email: lcfs@gov.bc.ca

Website: gov.bc.ca/lowcarbonfuels