



# PERSPECTIVES

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## **Clean Fuel Regulations in Canada: How to Prepare for Compliance**

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*The new clean fuel regulations in Canada aim to lessen carbon intensity of transportation fuel by 2030. This paper discusses how primary fuel suppliers can prepare and comply with the forthcoming regulations. The following information may be of particular interest to primary fossil fuel providers.*

## WHAT ARE CANADA'S NEW CLEAN FUEL REGULATIONS?

The Canadian federal government has developed the [Clean Fuel Regulations](#) (CFR) to increase incentives for the development and adoption of clean fuels, technologies, and processes with the goal of making transportation fuel (gasoline and diesel) less carbon intensive. By 2030, the carbon intensity of these fuels is set to decrease by approximately 15% below 2016 levels and, overall, will deliver up to 26 MT of GHG (greenhouse gas) reductions.

## DIFFERENCES BETWEEN THE NEW CLEAN FUEL REGULATIONS AND THE RENEWABLE FUEL REGULATIONS

The CFR will replace the current Renewable Fuel Regulations (RFR). The key difference between the CFR and RFR is a focus on lifecycle GHG emissions rather than volumetric blending requirements for renewable fuels. Low carbon fuel programs already exist in California, Oregon, Washington, and the province of British Columbia. However, the CFR is the first national low carbon fuel program in North America.

## GOVERNMENT SUPPORT FOR CFR

To support the ramp-up of the CFR, the government of Canada is providing \$1.5 billion toward a Clean Fuels Fund (the Fund). The Fund will support domestic production and adoption of low-carbon fuels such as biofuels. The federal government is

also supporting clean hydrogen production through the Fund by investing in early-stage opportunities highlighted in the [national hydrogen strategy](#).

## CFR REQUIREMENTS AND COMPLIANCE

The CFR will take a lifecycle approach to regulating GHG emissions. This involves tracking and reducing emissions at all stages of the fuel lifecycle, including extraction, processing, distribution, and use. The regulated entity will be the primary fossil fuel suppliers. This includes producers and importers. Primary suppliers will be required to reduce the carbon intensity of fuel by 3.5 gCO<sub>2</sub>e/MJ in 2023. Carbon intensity reduction requirements will increase by 1.4gCO<sub>2</sub>e/MJ per year to ultimately reach 14 gCO<sub>2</sub>e/MJ in 2030.

To provide primary suppliers with compliance flexibility, the CFR establishes a credit market. In this market, credits are awarded to companies that produce or use clean fuels, such as biodiesel or renewable natural gas. These credits can then be bought by companies to help them meet their regulatory obligations related to reducing carbon emissions. A credit market also helps to drive carbon intensity reductions at the lowest possible cost. To comply, primary suppliers must create or purchase credits. If parties have extra credits, they can bank them for future compliance or sell them to the market.

The CFR is expected to create a market signal for investment in low carbon intensity fuels and technologies such as producers of biofuels. Biofuel feedstock providers such as farmers and foresters will also see opportunities as demand for low-carbon fuels increases. However, it should be noted that not all biofuel feedstock and production processes are created equal. The feedstocks and processes that have the lowest carbon intensity will create more CFR credits and will, therefore, be more valuable to primary suppliers.

The CFR will also extend a market signal beyond just the liquid fuel supply chain. The regulation will promote advanced vehicle technologies like electric vehicles. Credits can be generated by changing network operators and charging site hosts. All revenue associated with residential and public electric vehicle charging must be reinvested back into charging infrastructure, electrical distribution infrastructure, or financial incentives for consumers.

## CLEAN FUEL REGULATIONS CREDIT CATEGORIES

The regulations establish a credit market to allow fuel suppliers the flexibility to meet carbon intensity reduction requirements in a cost-effective way. Each credit represents an emission reduction of one tonne of GHG or tCO<sub>2</sub>e.

Credits can be generated in three ways:

- **Compliance Category 1 (CC1)** credits are generated from projects that reduce the lifecycle carbon intensity of liquid fossil fuels. This includes carbon capture and storage at an oil production or processing facility. It could also include activities such as on-site renewable electricity generation or the co-processing of bio-oil at a refinery.
- **Compliance Category 2 (CC2)** credits are generated by supplying low carbon fuels such as ethanol or biodiesel.
- **Compliance Category 3 (CC3)** credits are generated by providing fuel or energy to advanced vehicle technology. This includes electric or hydrogen vehicles.

## WHAT ARE THE CURRENT REQUIREMENTS?

Beginning July 6, 2022, following the release of the final CFR, certain elements of the regulation came into force. This includes:

- Registration for primary fuel suppliers, registered credit creators, foreign fuel suppliers, and carbon intensity contributors. A primary supplier is a person that owns, leases, operates, controls, or manages a fuel production facility in Canada where gasoline and diesel is produced. A primary supplier can also be a person that imports gasoline or diesel into Canada. A registered credit creator is a person that carries out a CO<sub>2</sub>e reduction project, produces/imports low carbon fuel into Canada, or supplies fuel/energy to vehicles. A foreign supplier is the owner of a facility outside of Canada at which low carbon fuel is produced. A carbon intensity contributor is a person that applies for the approval of a carbon intensity for an activity with the intention to transfer the approved carbon intensity (typically to a registered credit creator). Parties must register according to the timelines outlined in Table 1.
- Applications for recognition of emission reduction projects.
- Application for approval of carbon intensity.
- Compliance credit creation.

REGULATED PARTY	COMING INTO FORCE	REGISTRATION
PRIMARY SUPPLIER	90 days from the date the Regulations are registered if requirements are triggered.	45 days from production or import of 400m <sup>3</sup> of gasoline or diesel.
REGISTERED CREATOR	60 days from the date the Regulations are registered; for credit creation for CC2 and CC3, start date to align with registration. Else, anytime.	Anytime
FOREIGN SUPPLIER	Anytime	Anytime
CARBON INTENSITY CONTRIBUTOR	Anytime	Anytime

*Table 1 - Summary of CFR registration timelines.*

## HOW IS FUEL CARBON INTENSITY DETERMINED?

Beyond certain elements of the regulation that are currently in force, regulated entities should seek to familiarize themselves with the Fuel LCA (lifecycle assessment) Model including the [Specifications for Fuel LCA Model CI Calculations](#) (which provides instructions for calculating carbon intensity values of fuels, energy sources, and material inputs for the purpose of creating credits) and [CFR Data Workbook](#) (a spreadsheet that helps convert applicant data to ensure compatibility with the Fuel LCA Model). The model allows users to calculate carbon intensity (CI) for the purposes of creating credits under the CFR. The model will be used by registered creators, foreign suppliers, and carbon-intensity contributors. There are three main components of the model:

1. **Fuel LCA Model Database:** contains a library of carbon intensity datasets and fuel pathways to develop a carbon intensity specific to a fuel or energy source.
2. **Fuel LCA Model Methodology:** describes the methodology, data sources, and assumptions that are used in the development of the Fuel LCA Model.
3. **Fuel LCA Model User Manual:** provides information on general definition and concepts related to LCA from the perspective of the LCA Model. The Manual also provides some technical guidance on how to perform basic operations in the open LCA software that is required for carbon intensity calculations.

In addition to the model, CC1 credits that are generated under the CFR must adhere to prescribed quantification methods which include:

- [Quantification Method Development Guidance Document](#)
- [Quantification Method for Low-Carbon-Intensity Electricity Integration](#)
- [Quantification Method for CO2 Capture and Permanent Storage](#)
- [Quantification Method for Enhanced Oil Recovery with CO2 Capture and Permanent Storage](#)
- [Generic Quantification Method](#)
- [Quantification Method for Co-processing in Refineries](#)

## HOW TO PREPARE FOR CFR

Experts can help assess a company's greenhouse risk exposure to understand the importance of the issue to its operations. Additionally, for businesses that supply, import, or produce fuel in Canada, here are some steps to take to prepare for the CFR:

- **Determine if the business is covered by the CFR.** The CFR applies to a wide range of fuels, including gasoline, diesel, and renewable fuels. If the business supplies, imports, or produces any of these fuels, it will be subject to the CFR.
- **Understand the performance standards.** The CFR sets performance standards for the carbon intensity of various fuels. Fuels being sold must meet these standards.
- **Measure the carbon intensity of fuels.** To comply with the CFR, it is necessary to measure the carbon intensity of fuels being sold. There are several tools and methods available to help with this.
- **Implement measures to reduce the carbon intensity of fuels.** If the carbon intensity of fuels does not meet the standards set by the CFR, it is necessary to implement measures to reduce it. This could involve switching to lower-carbon fuels, improving the efficiency of production processes, or investing in carbon capture and storage technology.
- **Keep records and report emissions.** The CFR requires businesses to keep records of their fuel sales and emissions and to report this information to the government. Systems will need to be in place to track and report this information accurately.

## CONCLUSION

The Canadian federal government has developed the CFR to reduce the carbon intensity of transportation fuel by 2030. These regulations will replace the current Renewable Fuel Regulations and focus on lifecycle GHG emissions rather than volumetric blending requirements for renewable fuels. To comply with these regulations, primary suppliers must create or purchase credits; a credit market has been established to allow fuel suppliers the flexibility to meet carbon intensity reduction requirements cost-effectively. The Clean Fuels

Fund has been created to support domestic production and adoption of low-carbon fuels, and this regulation will extend a market signal beyond just the liquid fuel supply chain to promote advanced vehicle technologies like electric vehicles. The CFR will create opportunities for biofuel feedstock providers. Those with the lowest carbon intensity will create more credits and will, therefore, be more valuable to primary suppliers. Overall, these regulations are expected to create a market signal for investment in low carbon intensity fuels and technologies and will deliver up to 26 MT of GHG reductions.

It is important to have experts assess a company's greenhouse risk exposure to understand the importance of the issue to its operations. Such experts can help set greenhouse gas targets throughout a business's operations, identify reduction and efficiency opportunities, develop economics and tracking of abatements, and deploy field sensors and automated technology to validate that actual performance meets expectations.

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