CLEAN FUEL STANDARD – LIQUID FUELS

Canadians and businesses use fuel every day – to produce and transport goods, and get from place to place. These fuels, like gasoline and diesel, help power our economy, but their extraction and combustion also represent a significant source of pollution in Canada. In fact, the largest sources of GHG emissions in Canada are from the extraction, processing and combustion of fossil fuels. As the world strives to achieve net-zero emissions by 2050, countries and businesses around the world will make a major shift to lower and non-emitting fuels. Canada is in a powerful position to be the producer of these fuels of the future, and the federal Clean Fuel Standard will help position Canada as a leading producer by driving innovation and investment.

The Clean Fuel Standard will reduce the lifecycle carbon intensity (the amount of GHGs per unit of energy) of liquid fuels used in Canada, and will support the production of cleaner fuels in Canada, including cleaner fossil fuels and lower carbon intensity biofuels. The Clean Fuel Standard complements the price on carbon pollution. While carbon pricing creates a broad incentive across the whole economy to use less energy and improve efficiency, the Clean Fuel Standard targets transformative changes in how fuels are produced and used in Canada.

These changes are crucial for long-term decarbonization and to put Canada on the path to net zero emissions by 2050. Without additional action, it is expected that emissions from Canada's transportation and oil and gas sectors would continue to increase year-over-year. The Clean Fuel Standard is an important part of exceeding Canada's 2030 climate target, and specifically to see the type of economic and environmental transformation required to meaningfully reduce emissions in the oil and gas and transportation sectors.

HOW THE CLEAN FUEL STANDARD WORKS

The Clean Fuel Standard takes a lifecycle carbon intensity approach, meaning it takes into account the emissions associated with all stages of fuel production and use – from extraction through processing, distribution, and end-use.

The proposed Regulations will require liquid fossil fuel primary suppliers (producers and importers) to reduce the carbon intensity of their fuels used in Canada from 2016 levels by 2.4 gCO_2e/MJ in 2022 increasing to a 12 gCO_2e/MJ reduction in 2030. This represents a decrease of about 13% below 2016 levels in the carbon intensity of liquid fuels used in Canada by 2030.

To achieve this, fuel producers will need to provide innovative solutions and new fuel options to consumers. To drive innovation at the lowest cost, the Clean Fuel Standard establishes a market-based credit system. Regulated parties (mainly refineries) must create or buy credits to come into compliance with the performance standard. Parties with an excess of credits can bank them for use in later years or sell them. The Clean Fuel Standard also provides opportunities for non-regulated parties to create credits.

The Clean Fuel Standard provides three ways to create credits:

1. **Compliance Category 1**: undertaking projects that reduce the lifecycle carbon intensity of fossil fuels (e.g., carbon capture and storage, on-site renewable electricity, co-processing).
2. **Compliance Category 2**: supplying customers with low carbon intensity fuels (e.g., ethanol, bio-diesel).
3. **Compliance Category 3**: investing in advanced vehicle technologies (e.g., electric or hydrogen fuel cell vehicles).

The broad range of compliance strategies allowed under the proposed Regulations will give fossil fuel suppliers the flexibility to choose the lowest cost compliance actions available. The proposed Regulations will establish a credit market, where each credit will represent a lifecycle emission reduction of one tonne of CO_2e. Each year primary suppliers will demonstrate compliance with their reduction requirement by creating credits or acquiring credits from other creators.

The Clean Fuel Standard will create economic opportunities for voluntary parties like biofuel producers and other lower-carbon fuel producers to create and sell credits. In turn, this will create opportunities for feedstock providers like farmers and foresters supporting lower-carbon fuel production. The proposed Regulations will also retain the incentive for biofuels by incorporating the volumetric requirements from the current federal Renewable Fuel Regulations (5% low carbon intensity fuel content in gasoline and 2% low carbon intensity fuel content in diesel fuel and light fuel oil).

The Clean Fuel Standard will promote the uptake of advanced vehicle technologies, like electric vehicles. To allow for a wide range of voluntary participants to have access to this economic opportunity, any party can become a credit creator for residential electric vehicle charging. Revenues from credits generated for residential electric vehicle charging must be reinvested in vehicle charging infrastructure, rebates for consumers or electricity distribution infrastructure.

All three categories of credit creation will include opportunities for hydrogen and renewable natural gas:

- **Compliance category 1**: Credits can be created for carbon capture and storage when hydrogen is used to produce fossil fuels or lower carbon intensity fuels.
- **Compliance category 2**: Credits can be created for eligible renewable natural gas and hydrogen that are used as fuels.
- **Compliance category 3**: Credits can also be created for the hydrogen supplied to fuel cell vehicles, as well as for the renewable natural gas or hydrogen supplied to natural gas powered vehicles.

NEXT STEPS FOR CANADA'S CLEAN FUEL STANDARD – FOCUSING ONLY ON LIQUID FUELS

The proposed Clean Fuel Standard regulations will be published in Canada Gazette, Part I, for a 75-day public comment period. The Government of Canada aims to publish the final version of the regulations in late 2021.

In the context of the continued increase to the carbon price and the new measures to support markets for hydrogen and biofuels, the scope of the Clean Fuel Standard has been narrowed to target only liquid fossil fuels, like gasoline, diesel and oil, which are mainly used in the transportation sector. This is a progression in the design of the Clean Fuel Standard from its initial discussion in 2016, when it was proposed that the new measure will cover liquid, gaseous and solid fuels. The Clean Fuel Standard, covering only liquid fossil fuels, will contribute to the government's goal of "exceeding 2030" by delivering more than 20 million tonnes of emissions reductions annually by 2030.

OTHER DESIGN UPDATES SINCE JUNE 2020

Several important design details have been modified since the most recent engagement with provinces/territories and stakeholders in June 2020.

COMPLIANCE CATEGORY 1 CREDITS (projects that reduce a fossil fuel's lifecycle carbon intensity)

Following feedback over the spring of 2020, the approach to determining the eligibility of these projects has been streamlined, and the length of time for which a project can generate credits has been extended. These changes will provide for more credit generation opportunities and more lead-time for capital investments.

Credits can be created as of the date of registration of the final Regulations. Projects can include an aggregation of reductions from multiple sources. The amount of credits created will be determined by a specified quantification method. ECCC will develop quantification methods for various project types, starting with the following list:

- carbon capture and storage;
- low-carbon intensity electricity integration;
- enhanced oil recovery; and
- co-processing of biocrudes in refineries and upgraders.

ECCC will also develop a generic quantification method for projects for which there is no applicable quantification method. This generic quantification method will include streamlined additionality criteria. Projects such as energy efficiency, cogeneration, electrification and methane reductions may be recognized under the generic quantification method provided they meet the additionality criteria. Primary suppliers will be able to use credits created under the generic quantification method in order to satisfy up to 10% of their annual reduction requirement.

Eligible projects must reduce the carbon intensity of a fossil fuel at any point along its lifecycle, achieve additional GHG emission reductions, and must have begun to reduce, sequester, or use CO_2e emissions on or after July 1, 2017. Projects will generate credits annually for 10 years, except for carbon capture and storage projects, which will create credits annually for 20 years. In addition, projects may be renewed a single time for an additional five years, provided an applicable quantification method still exists at the time of renewal.

LAND USE AND BIODIVERSITY CRITERIA

The Clean Fuel Standard will increase the use of biofuels in Canada and the demand for biofuel feedstock. Only biofuels made from biomass feedstock that adhere to land use and biodiversity criteria will be eligible for compliance credit creation. These criteria ensure the financial incentives created by the Regulations do not result in loss of biodiversity from growing and harvesting biofuel feedstock. These criteria apply to feedstock regardless of geographic origin.

Further to feedback over the spring of 2020, the design of the land use and biodiversity criteria has been streamlined to minimize administrative burden and expand the economic opportunity for feedstock suppliers. In the June 2020 proposal, a key criterion was no harvest from land expanded after 2008 into highly biodiverse or high carbon stock land. These lands are forests, wetlands, grasslands and riparian zones. The June 2020 proposal also required that compliance with this criterion would have to be demonstrated be each feedstock producer, that is by each farm or forest site.

In response to feedback, two changes have been made: the baseline year has been changed from 2008 to 2020, and compliance can now be demonstrated at a national level. If a country shows that there has been no net land use expansion, there will be no need for individual farmers or foresters to undertake any further action.

Other land use and biodiversity criterion in the proposed Regulations are:

- No cultivation and harvest of feedstock on protected lands;
- Cultivation and harvest of feedstock must be undertaken in manner that respect laws to protect against invasive species;
- Foresters must have forest management plans; and
- Feedstock that poses a high risk of indirect land use change is ineligible. Indirect land use change occurs when, for example, biofuel feedstock is planted on crop land displacing food crops and forest land is then converted to grow the displaced food crops. To date, only palm oil has been identified as being a high risk feedstock, and as such will be an ineligible to create credits under the Clean Fuel Standard.

CREDITS FOR RESIDENTIAL ELECTRIC VEHICLES

The Clean Fuel Standard will encourage the uptake of EVs by allowing credits for residential EV charging to be created by network operators. In June 2020, ECCC presented a proposal for residential EV credit creation to stakeholders, which included a proposal to phase out residential EV charging credits by 2030. In response to feedback over spring 2020, credits for residential charging of electric vehicles will be phased out by 2035 for charging stations installed by the end of 2030. Any residential charging station installed after the end of 2030 will not be eligible for credits after 2030.

SPURRING NEW LOW-CARBON FUEL DEVELOPMENT IN CANADA

The proposed Regulations will work in conjunction with other federal, provincial and territorial policies to encourage the development and adoption of clean fuels and technologies and processes.

To support implementation of the Clean Fuel Standard, the government will make available $1.5 billion to grow the market for low-carbon fuels in Canada. These investments will also help implement early opportunities identified in the forthcoming Hydrogen Strategy for Canada by supporting the market for clean hydrogen. These investments will be active starting in 2021-22.

Clean fuels like hydrogen present a significant economic opportunity. The Hydrogen Strategy for Canada will outline how the country can leverage its abundant and diverse range of feedstock (e.g., natural gas, petroleum and biomass, forest by-products, agriculture, municipal and mining waste, a low-emitting electricity grid) and pace-setting clean tech companies to grow domestic production of hydrogen and facilitate its use across the economy. This domestic growth will also position Canada to become a world-leading supplier of hydrogen and hydrogen technologies, generating economic opportunities through exports and direct foreign investment.

In addition, Canada's fall economic statement announced $150 million in additional funds to accelerate the deployment of infrastructure for zero-emission vehicles, and the government's intention to continue supporting electrification of public transit systems across Canada. The fall economic statement also proposed $2.6 billion in funding for home energy retrofits. This will reduce heating costs for Atlantic Canadians, who are more reliant on home heating oil than the rest of Canada.

OTHER JURISDICTIONS' EXPERIENCES WITH CLEAN FUEL STANDARDS

RENEWABLE FUEL REQUIREMENTS – UNITED STATES

- Established in December 2005, the United States Renewable Fuel Standard (U.S. RFS) requires increasing annual volumes of renewable fuels to be blended into fossil fuels.[1] Currently, the RFS requires conventional renewable fuel to comprise 11% of transportation fuel, 3% of advanced biofuel, 2% of biomass-based diesel and <1% of cellulosic biofuel.[2]
- Seven states also have renewable fuel requirements: Louisiana, Minnesota, Missouri, Montana, Oregon, Pennsylvania, and Washington.

[1] Renewable Fuel Standard Program

[2] Renewable Fuel Standard Program: Standards for 2020 and Biomass-Based Diesel Volume for 2021 and Other Changes

FUEL CARBON INTENSITY (CI) REQUIREMENTS – BRITISH COLUMBIA, CALIFORNIA, OREGON AND THE EU

- In January 2010, British Columbia's Renewable and Low Carbon Fuel Requirements Regulation (RLCFRR) came into effect. Under the RLCFRR, the RLCFRR requires reductions in the lifecycle CI of transportation fuels supplied in a given year. In addition, at least 5% of gasoline and 4% of diesel by volume must contain renewable fuel.[3] To date, British Columbia is the only province with a low carbon fuel standard.
- In November 2020, the Ontario government adopted an increased stringency for their blending mandate. Ontario is increasing the amount of renewable content required in gasoline, from the existing 10% requirement to 11% in 2025, 13% in 2028 and 15% in 2030.
- Adopted in 2010, California's Low Carbon Fuel Standard initially required fuel suppliers to reduce the CI of transportation fuels by 10% by 2020, from a 2010 baseline.[4] In July 2020, the California Air Resource Board approved amendments to the regulation, which require fuel suppliers to reduce the CI of transportation fuels they supply by at least 20% by 2030, from a 2010 baseline.
- Oregon's Clean Fuels Program took effect in 2016 and requires a reduction in the annual average CI of Oregon's transportation fuels (gasoline and diesel) by 10% from the 2015 level by 2025.[5] It prescribes declining maximum CI limits, for each year.
- The EU also has a similar policy in place. Established in April 2009, the Fuel Quality Directive requires fuel suppliers to reduce lifecycle GHG emissions from fuels by 10% by 2020.[6] The Fuel Quality Directive works in tandem with the EU Renewable Energy Directive, which stipulates that the share of biofuels in the transportation sector should be 10% (by energy content) for each member country by 2020.[7]

[3] Renewable and Low Carbon Fuel Requirements

[4] California Low Carbon Fuel Standard

[5] Oregon Clean Fuels Program

[6] European Commission Fuel Quality Directive

[7] European Commission Renewable Energy Directive