

IEA-Advanced Motor Fuels ANNUAL REPORT 2025

CANADA



Canada

Drivers and Policies

Clean Fuel Regulations

The [Clean Fuel Regulations](#) (CFR) require producers and importers of gasoline or diesel to reduce the carbon intensity (CI) of the fuels they produce in, and import into, Canada for use in Canada. The regulations establish a credit market in which the annual requirement to reduce carbon intensity can be met through three main categories of credit-creating actions:

1. Undertaking projects that reduce the life-cycle carbon intensity of liquid fossil fuels,
2. Supplying low-carbon-intensity fuels, and
3. Supplying fuel or energy to advanced vehicle technology.

The annual CI reduction requirements for gasoline and diesel came into force on July 1, 2023, starting at 3.5 grams of carbon dioxide equivalent (CO₂e) per unit of energy and increasing to 14 grams in 2030. Once fully implemented, the CFR will help cut up to 26.6 million tonnes (Mt) of greenhouse gas (GHG) pollution in 2030. The CFR also requires gasoline and diesel producers and importers to incorporate a minimum of 5% low-carbon intensity fuel content in the total volume of gasoline produced and imported for use in Canada, and 2% in diesel.

The [Federal Government's Budget](#) 2025 announced targeted amendments to the CFR to support Canada's biofuel sector while maintaining the CFR's primary focus on reducing emissions from fuels while transitioning to a lower-carbon economy. The government established the [Biofuels Production Incentive](#), a time-limited program that will provide funding over 2 years (2026–2027) to support the stability and resilience of domestic producers of biodiesel and renewable diesel.

Along with this Federal policy, Canada has provincial renewable fuel and low-carbon fuel requirement regulations that prescribe specific renewable fuels volumes and carbon intensity.¹

Renewable-fuels-related Standards

[The Canadian General Standards Board](#) (CGSB) is responsible for developing fuel and renewable fuel quality standards through consensus with the public and private sectors (see Table 1).

Table 1. CGSB Renewable Fuel-Quality-Related Standards

Fuel Standard	Number
Automotive gasoline*	CAN/CGSB 3.5
Automotive ethanol fuel (E50–E85 and E20–E25)	CAN/CGSB 3.512
Denatured fuel ethanol for use in automotive spark-ignition fuels	CAN/CGSB 3.516
Diesel fuel (includes up to 5% by volume biodiesel)	CAN/CGSB 3.517
Diesel fuel containing biodiesel (B6–B20)	CAN/CGSB 3.522
Biodiesel (B100) for blending in middle distillate fuels	CAN/CGSB 3.524

* The automotive gasoline standard applies to three types of gasoline: Type A contains 1.0% to 10% (by volume) denatured fuel ethanol (E1–E10). Type B contains 11% to 15% (by volume) denatured fuel ethanol (E11–E15). Type C contains up to 0.9% (by volume) denatured fuel ethanol (E0).

Canada's Climate Plans and Targets

The 2016 Pan-Canadian Framework on Clean Growth and Climate Change ([PCF](#)) is Canada's first-ever national climate plan. The PCF was developed with provinces and territories, and in consultation with Indigenous peoples. The objective is to meet Canada's emission reduction targets, grow the economy, and build resilience to a changing climate. The plan includes a pan-Canadian approach to pricing carbon pollution and measures to achieve reductions across all sectors of the economy.

¹ Navius Research, 2025, [Biofuels in Canada 2025 Annual Report](#).

In March 2022, the Government of Canada introduced [Canada's 2030 Emissions Reduction Plan](#), which builds on the efforts of the PCF. The plan provides a sector-by-sector roadmap for Canada to reach its emissions reduction target of 40% below 2005 levels by 2030 and net-zero emissions by 2050.

[Canada's 2025 Progress Report on the 2030 Emissions Reduction Plan](#) was released and, as of 2023, transport sector emissions were reported to be similar to 2005 levels. A list of priority measures was indicated in the [2025 Progress Report, including](#) light-duty on-road vehicle emission regulations, clean fuel regulations, and heavy-duty on-road vehicle emission regulations with a total reduction potential of around 56.6 Mt in 2030 from the transportation sector.

The Canadian Net-Zero Emissions Accountability Act, which became law in June 2021, formalizes Canada's commitment to achieve [net-zero emissions by 2050](#). [The Net-Zero Advisory Body](#) (NZAB) engages Canadians and provides independent advice to the Minister of Environment and Climate Change with respect to achieving Canada's net-zero emissions goal.

Greenhouse Gas Emission Regulations

As a result of increasingly stringent GHG standards, the efficiency of new model-year LDVs has improved significantly since the early 2010s and contributed to a decline in emissions and improvements in fuel efficiency.

On December 20, 2023, Canada published the [Regulations Amending the Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations](#). These amendments, referred to as the [Electric Vehicle Availability Standard](#), set requirements for importers and manufacturers of light-duty vehicles to meet increasingly stringent annual zero-emission vehicle targets, including the targets specified in Canada's [2030 Emissions Reduction Plan](#) (20% for the 2026 model year, 60% by 2030, and 100% by 2035). On February 5, 2026, [the Prime Minister of Canada announced](#) that Canada will repeal the Electric Vehicle Availability Standard and instead introduce more stringent GHG emission standards for light-duty vehicles up to model year 2032. This approach will drive emission reductions in a technology-neutral manner, allowing manufacturers to use a wide array of technologies to meet the standards, while putting Canada on a path to achieve electric vehicle adoption goals of 75% by 2035 and 90% by 2040.

The [Heavy-duty Vehicle and Engine Greenhouse Gas Emission Regulations](#) set requirements for importers and manufacturers of new (2014 and later) heavy-duty on-road vehicles and engines offered for sale in Canada to meet GHG emission standards and annual compliance reporting requirements. In 2024, Environment and Climate Change Canada published a [GHG emissions performance report for 2014 to 2020 \(Phase 1\) model year heavy-duty vehicles and engines](#).

Biofuels Production Incentive

Announced in 2025, the [Biodiesel Production Incentive](#) will support domestic producers of biodiesel and renewable diesel. The incentive aims to promote the existing production of biodiesel and renewable diesel by:

- Assisting existing biodiesel and renewable producers in remaining operational, protecting jobs throughout the clean fuel supply chain,
- Stabilizing biodiesel and renewable diesel production to boost the value of Canada's clean fuels sector, and
- Reducing reliance on imports, which will help increase Canada's energy.

Coalition to Grow Carbon Markets

At the 30th United Nations Climate Change Conference (COP30), Canada joined the [Coalition to Grow Carbon Markets](#). The coalition aims to enhance demand for high-integrity carbon credits and increase private investment in GHG reduction. Canada also signed the Open Coalition declaration — a collaborative initiative aimed at creating mutual understanding of carbon pricing mechanisms. It also promotes collaboration around measurement, reporting, and verification systems; carbon accounting standards; and high-level principles for the use of carbon offsets.

Belém 4x Pledge on Sustainable Fuels

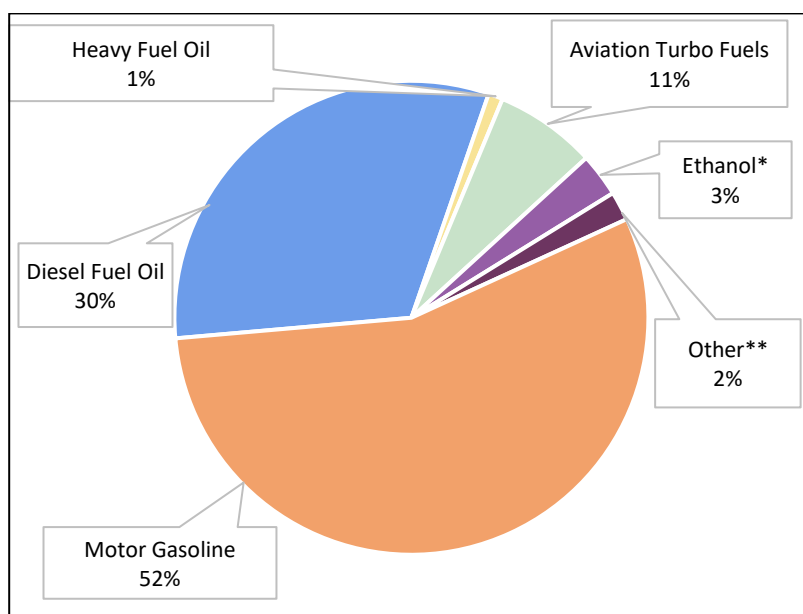
At the COP30, Canada endorsed the [Belém 4x Pledge on Sustainable Fuels](#), which is a commitment to work collectively with other nations to globally expand sustainable fuels in an environmentally and socially responsible manner.

Hydrogen Strategy for Canada

Since 2020, Natural Resources Canada (NRCan) has engaged with stakeholders, government, and Indigenous partners to create the [Hydrogen Strategy for Canada](#), which seeks to leverage Canada's hydrogen through various pathways, including fuel for transportation. The strategy includes hydrogen end-use opportunities for LDVs, buses, trucks and equipment, rail, marine, and aviation. A [Canadian Hydrogen Codes and Standards Roadmap](#) was created to address the obstacles to widespread adoption of hydrogen technologies.

Advanced Motor Fuels Statistics

Figure 1 shows [energy use by fuel type](#) in 2022 for transportation in Canada. Table 2 lists supply and demand for ethanol and biodiesel in 2023.



*Ethanol proportion is estimated on the basis of production data.

**Includes electricity, natural gas, biodiesel fuel oil, light fuel oil, aviation gasoline, and propane.

Figure 1. Fuel Mix of the Canadian Transportation Sector, 2022

Table 2. Canadian Supply and Demand of Biofuels, 2024 (in millions of liters)

Parameter	Ethanol	Biodiesel and Renewable Diesel
Canadian production	1,756	1,119
Imports	2,500	1,446
Exports	112	490
Domestic use	4,072	1,005

Transportation GHG emissions (from passenger, freight, and other forms of transport) increased 6 from 2021 to 2023, reflecting a rebound from the pandemic. Despite the increase, transportation emissions were 7% below their pre-pandemic (2019) level.

Research and Demonstration Focus

ecoTECHNOLOGY for Vehicles (eTV) Program

The [eTV Program](#), conducted through Transport Canada's Innovation Centre, tests the safety, environmental impact, and driving performance of new technologies for passenger cars and heavy-duty trucks. The program investigates the performance of new technologies for advanced engines and transmissions, renewable fuels, hybrid and electric vehicles, hydrogen and fuel cell vehicles, and connected and automated vehicles.

Program of Energy Research and Development (PERD)

NRCan's Office of Energy R&D (OERD) manages the [PERD](#), which supports energy R&D conducted by the Federal Government and is designed to ensure a sustainable energy future for Canada. Key research areas include knowledge and technologies that will help reduce the carbon footprint of fuels, improve the efficiency of vehicles, electrify transport, and reduce emissions from transportation sources.

Energy Innovation Program — On-Road Transportation Decarbonization

NRCan's OERD also manages the Energy Innovation Program, which funds research, development, and demonstration (RD&D) projects to accelerate the development of clean energy technologies, supporting a competitive, low-carbon, and sustainable energy system for Canada. The [On-Road Transportation Decarbonization stream](#) co-funds projects focused on medium- and heavy-duty vehicles and their supporting energy infrastructure.

Electric Vehicle and Alternative Fuel Infrastructure Deployment Initiative (EVAFIDI)

Through NRCan's [EVAFIDI](#) program, funds are invested into public infrastructure to encourage the transition to low- or zero-emission vehicles. As of 2025, a total of 1,087 electric, 7 hydrogen, and 14 natural gas stations have opened in Canada.

Zero Emissions Vehicle Infrastructure Program (ZEVIP)

NRCan's [ZEVIP](#) is an initiative to address the lack of charging and refueling stations in Canada by increasing the availability of localized charging and hydrogen refueling opportunities. The program provides opportunities for owners/operators of ZEV infrastructure, delivery organizations, and Indigenous organizations.

Strategic Innovation Fund (SIF)

The [SIF](#), managed by Innovation, Science and Economic Development Canada, provides support to Canadian businesses investing in innovation and to industry efforts to accelerate the production of low- and zero-emission vehicles and improve the battery supply chain.

Canada's Aviation Climate Action Plan

[Canada's Aviation Climate Action Plan](#) includes R&D to support Canada's commitments to achieve net-zero emissions by 2050. More than 60 airlines operating in Canada participate in the Canadian Council for Sustainable Aviation Fuels, which brings together industry and government to develop a competitive roadmap for Canadian-made sustainable aviation fuels (SAF). In addition, the Canada Centre for Mineral and Energy Technology (CanmetENERGY) is conducting [a project aimed at developing a low-carbon SAF and renewable diesel from bio-mass-derived intermediates](#). With an anticipated end date in 2028, the project will provide technical information to support Canadian companies in their efforts to scale up SAF and renewable diesel technologies.

Biofuels for Industry and Transportation

CanmetENERGY's [Biofuels for Industry and Transportation](#) project aims to advance biomass conversion into biofuels for industry and transportation by developing, assessing, and optimizing cutting-edge technologies. The information developed from this project will guide policy decisions, support industry innovation, and contribute to a more sustainable future by reducing emissions and supporting Canada's goal of achieving net-zero emissions by 2050.

Green Freight Program (GFP)

[The GFP](#), funded through NRCan, will help fleets reduce their fuel consumption and GHG emissions through fleet energy assessments, fleet retrofits, engine repowers, logistical best-practice

implementation, and the purchase of low-carbon vehicles. Fleet modernization is a component of the program and includes vehicle repowering, purchases of low-carbon alternative-fuel vehicles, and implementation of logistical best practices.

The Green Shipping Corridor Program (GSCP)

Transport Canada's [GSCP](#) provides funding for projects that contribute to the establishment of green shipping corridors and the decarbonization of Canada's marine sector. One area of focus is building the capacity of Canadian vessel owners/operators to identify, plan, and incorporate next-generation low-carbon and zero-emission ship technology and marine fuels into their vessel operations.

Low-carbon Fuel Procurement Program (LCFPP)

Within the Greening Government Fund, the [LCFPP](#) will provide funding to federal air and marine fleet departments for the purchase of low-carbon fuels. This program supports the purchase of approximately 200 million litres of low-carbon fuels by the end of fiscal year 2030–31.

Outlook

As depicted in [Table 3](#), the Canadian transportation sector comprises several distinct subsectors, each exhibiting different trends during the projected period. GHG emissions from cars, trucks, and motorcycles are projected to decrease by 10 Mt between 2005 and 2030, while those for heavy-duty trucks and rail are projected to increase by 14 Mt.

Table 3. Transportation: GHG Emissions (Mt CO₂e)

Transportation Subsector	2005	2020	2030	Δ 2005 to 2030
Passenger Transport	90	80	82	-8
Cars, light trucks, and motorcycles	82	73	72	-10
Bus, rail, and domestic aviation	8	6	10	2
Freight Transport	60	70	71	11
Heavy-duty trucks, rail	54	66	68	14
Domestic aviation and marine	5	5	5	0
Other: recreational, commercial, and residential off-road transportation	10	9	10	0
Total	160	159	163	3

This table includes projections with additional measures using Environment and Climate Change Canada's Energy, Emissions, and Economy Model for Canada.

Biofuels in Canada 2025 Annual Report

[Advanced Biofuels Canada](#) has engaged Navius Research to produce the annual [Biofuels in Canada report](#). The report will be a comprehensive document describing all of Canada's implemented policies that aim to cut transportation GHG emissions. Some key findings include the increase of renewable fuel consumption in Canada by 11% in 2024, on top of the 28% increase in 2023. The GHG impact of clean fuel consumption in Canada reached a new high of 13.3 MtCO₂/year in 2024 — more than double the impact in 2020 — because of stronger clean fuel policies across Canada.