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Canada Gazette, Part I, Volume 153, Number 10: Off-road Compression-Ignition (Mobile and Stationary) and Large Spark-Ignition Engine Emission Regulations

154-196 minutos

March 9, 2019

Statutory authority
Canadian Environmental Protection Act, 1999

Sponsoring department
Department of the Environment

REGULATORY IMPACT ANALYSIS STATEMENT

(*This statement is not part of the Regulations.*)

Executive summary

Issues: Emissions of air pollutants such as nitrogen oxides (NO_x), hydrocarbons (HC), carbon monoxide (CO) and particulate matter (PM) from off-road engines contribute to environmental and human health problems. Canada committed to developing standards that improve air quality in collaboration with the United States Environmental Protection Agency (U.S. EPA).

Currently, there are regulations in Canada setting emission standards aligned with those of the U.S. EPA for mobile compression-ignition (MCI) engines. However, there are no federal regulations in Canada setting emission standards for off-road engines such as large spark-ignition (LSI) and stationary compression- ignition (SCI) engines, both of which are regulated by the U.S. EPA.

In addition, the Standing Joint Committee on the Scrutiny of Regulations (SJCSR) has identified sections within the existing *Off-Road Compression-Ignition Engine Emission Regulations* and the *Off-Road Small Spark-Ignition Engine Emission Regulations* that lack clarity or contain minor inconsistencies between the English and French text.

Description: The proposed *Off-road Compression-Ignition (Mobile and Stationary) and Large Spark-Ignition Engine Emission Regulations* (the proposed Regulations) would reduce air pollutant emissions from off-road engines and create a level playing field in the Canada–U.S. market for importers and manufacturers of these engines.

The proposed Regulations would repeal and replace the current *Off-Road Compression-Ignition Engine Emission Regulations* (which apply to MCI engines) and introduce new emission standards and requirements in alignment with the U.S. EPA's standards for LSI and SCI engines. These standards include limits for NO_x, HC, CO and, in the case of SCI, PM.

In addition, the proposed Regulations would address the SJCSR concerns regarding clarity and inconsistency and introduce consequential amendments to other vehicle and engine emission regulations.

Cost-benefit statement: From 2021 to 2035, the proposed Regulations are expected to result in cumulative emission reductions of approximately 179 500 tonnes of CO, 26 900 tonnes of NO_x, and 10 600 tonnes of volatile organic compounds (VOCs) from LSI engines as well as 19 600 tonnes of non-methane HC + NO_x and 900 tonnes of PM from SCI engines. The proposed LSI engine emission standards are also expected to result in reductions of greenhouse gas (GHG) emissions of about 133 000 tonnes of CO_2 equivalent, valued at approximately $7.8M. The estimated emission reductions are expected to contribute to the protection of human health and the environment in Canada.

It is also estimated that the proposed Regulations would result in cost savings of about $136.5 million associated with fuel savings and reductions in maintenance for LSI engines, and reductions in administrative costs for importers of LSI, SCI and MCI engines.

It is estimated that the proposed Regulations would result in incremental costs of about $75.2 million, based on the engine modifications that would be necessary to meet the proposed LSI and SCI engine emission standards, other miscellaneous

compliance requirements, and costs to the federal government.

The proposed Regulations are expected to have a net benefit of $69.1 million. This is a conservative estimate, as it does not include the monetized value of expected human health and environmental benefits related to air quality improvements.

"One-for-One" Rule and small business lens: The proposed Regulations would repeal and replace the current *Off-Road Compression-Ignition Engine Emission Regulations*; therefore, there would be no increase in the total number of regulations. Annualized administrative cost savings of $695,772 are expected to result from the proposed Regulations, which is equivalent to $210 per business. The small business lens applies to the proposed Regulations, therefore a flexible administrative option that entails reduced reporting requirements has been adopted.

Domestic and international coordination and cooperation: Alignment with U.S. air pollutant emission standards for off-road engines is consistent with the objectives of the Canada–U.S. Air Quality Agreement and the Canada–U.S. Regulatory Cooperation Council. Exchange of compliance verification and testing information between the governments of Canada and the United States is expected.

Background

The Government of Canada's Addressing Air Pollution Horizontal Initiative (AAP HI) aims to ensure that Canadians have clean air and the environment is protected. The AAP HI includes activities to address domestic and international air pollution sources including the reduction of transboundary air pollution, as agreed to under the Canada–U.S. Air Quality Agreement. Under the Ozone Annex to this agreement, Canada and the United States agreed to reduce emissions of ozone precursors that contribute to smog.

Despite improvements in air quality over the past two decades, the burden of air pollution on the health of Canadians continues to be significant. Many Canadians live in communities where outdoor levels of ground-level ozone exceed current air quality standards. The Department of Health has estimated that air pollution from industry, transportation and other human activities results in 14 400 premature deaths every year in Canada.

Off-road engines, including large spark-ignition and stationary and mobile compression-ignition engines, emit smog-forming air pollutants such as nitrogen oxides (NO_X), hydrocarbons (HC), carbon monoxide (CO), and particulate matter (PM), as well as other toxic substances listed in Schedule 1 to the *Canadian Environmental Protection Act, 1999* (CEPA). All off-road engines account for approximately 5% of the emissions of these pollutants in Canada.

To address these emissions, the Department of the Environment (the Department) has successfully introduced a range of vehicle, engine and fuel regulations in alignment with the corresponding standards of the U.S. Environmental Protection Agency (U.S. EPA), in accordance with Canada's commitment under the Canada–U.S. Air Quality Agreement.

The *Off-Road Compression-Ignition Engine Emission Regulations* (the current Regulations), published in the *Canada Gazette*, Part II, in 2005 and amended in 2011, established emission standards for mobile compression-ignition (MCI) engines powered by diesel fuel and used to power construction, mining, farming and forestry machines that align with those of the U.S. EPA.

Large spark-ignition (LSI) engines

LSI engines are not currently subject to emission standards in Canada; however, they are regulated in the United States. These engines are usually fuelled with gasoline, propane or natural gas and are used to power forklifts, generators, and many other farm, industrial and construction machines. Many of the Canadian businesses that import LSI engines also import MCI engines and thus are already subject to the current Regulations under CEPA.

There are no known manufacturers of LSI engines in Canada, therefore it is assumed that all LSI engines in the Canadian fleet are imported from the United States and other countries. Air pollutant emissions from LSI engines have been regulated in the United States under the U.S. EPA's "Tier 2" emission standards since 2007. Given that the Department estimates that about 90% of LSI engines imported are certified by the U.S. EPA, it is estimated that about 90% of LSI engines entering the Canadian market already comply with the Tier 2 standards.

The following table is a more detailed breakdown by application of the estimated population of LSI engines in Canada in 2017.

Table 1: LSI engines in the 2017 Canadian fleet, by application

Application	Count
Tractors	46 734
Forklifts	24 081

Specialty vehicle carts	22 013
Mowers	20 163
Aerial lifts	13 949
Generator sets	8 556
Other	5 518
Total	141 014

Stationary compression-ignition (SCI) engines

SCI engines are excluded from the current regulations and are not subject to any emissions standards in Canada, despite being regulated in the United States since 2006. SCI engines are usually fuelled with diesel and are mainly used in Canada in generator sets and in water pumps to provide electricity and to supply water to sprinkler systems during blackouts. A small proportion is used as the prime source of electricity in communities in remote locations, or in on-the-grid locations to produce electricity for residential or industrial use during peaking hours when electricity demands increase.

SCI engines are also used in various industries to power air compressors, to drive heating, ventilation and air conditioning (HVAC) control systems, or to provide air to power pneumatic tools. Other applications include such things as agricultural equipment, hydraulic power units, irrigation sets, and underground mining equipment.

In addition to the air pollutant emissions mentioned above, SCI engines are a source of short-lived climate pollutants (SLCP) such as black carbon, a major component of PM, which SCI engines emit due to the combustion of diesel fuel and a lack of emission control technology.

There are no known manufacturers of SCI engines in Canada; therefore, it is assumed that all SCI engines in the Canadian fleet are imported. Based on an analysis of the approximately 18 500 SCI engines imported into Canada from 2012 to 2015, 72% came from the United States, followed by 10% from the United Kingdom. Information on the Canadian fleet also suggests that about 95% of these imports already comply with the proposed SCI emission standards and that only 5% of SCI engines would be impacted by the proposed Regulations.

A summary of the estimated SCI engine fleet in Canada in 2015 is presented below.

Table 2: All SCI engines in the 2015 Canadian fleet, by application

Application	Count
Generator sets	35 453
Air compressors	9 202
Industrial pumps	6 480
Fire pumps	2 421
Other	1 166
Total	54 722

Table 2 indicates that in 2015, 65% of SCI engines were used as generator sets, 17% as air compressors, 12% as industrial pumps, 4% as fire pumps and 2% in other applications.

Issues

Emissions of air pollutants from off-road engines, including MCI, LSI and SCI engines, contribute to environmental and human health problems in Canada. These engines emit NO_x, CO, volatile organic compounds (VOCs), and PM through the combustion and evaporation of fuel, which can result in the formation of ground-level ozone and contribute to smog. Smog is a noxious mixture of air pollutants, primarily ground-level ozone and PM. It can often be seen as a haze in the air, especially over urban centres, and leads to numerous negative impacts relating to human health and the environment.

Under the Ozone Annex to the Canada–U.S. Air Quality Agreement, Canada committed to developing standards that improve air quality in collaboration with the U.S. EPA. Although emission standards already exist for MCI engines, emission standards for LSI and SCI engines are necessary to further reduce air pollutants and ensure that all manufacturers, importers and distributors operating in the highly integrated Canada–U.S. market comply with the same standards. Without these standards, there is a risk that the import of LSI and SCI engines, which emit much higher levels of air pollution, could continue. Such a scenario would result in adverse impacts on the environment and the health of Canadians.

Finally, the Standing Joint Committee on the Scrutiny of Regulations (SJCSR) has identified sections within the current Regulations and the *Off-Road Small Spark- Ignition Engine Emission Regulations* that lack clarity or contain minor inconsistencies between the English and French text.

Objectives

The purpose of the proposed Regulations is to reduce the release of air pollutants generated by the use of LSI and SCI engines in Canada, which contribute to environmental and human health problems. The proposed Regulations also aim to create a level playing field in the Canada–U.S. market for importers and manufacturers of these engines, minimize administrative costs incurred by importers, and improve the clarity and consistency of certain provisions in two other engine-related regulations.

Description

The proposed Regulations would repeal and replace the current Regulations for MCI engines and introduce new emission standards for LSI and SCI engines. Emission standards for MCI engines would remain unchanged, although some new flexibility for certain applications of MCI engines are proposed. The proposed Regulations would also include reporting requirements for MCI, LSI, and SCI engines. In addition, the Department would make minor housekeeping changes to other engine-related regulations under CEPA. Below is a summary of these requirements.

LSI engine emission standards

New emission standards for LSI engines would apply starting with the 2021 model year. The proposed Regulations would incorporate U.S. Tier 2 exhaust emission standards for HC + NO_X and CO for LSI engines. The emission standards would apply over a useful life of 5 000 hours of operation or seven years, whichever comes first.

The proposed Regulations would also introduce standards for evaporative emissions for LSI engines, in order to align with the U.S. EPA standards. Evaporative emissions are fuel vapours that are released into the atmosphere from fuel tanks, fuel lines and other components of an engine's fuel system. LSI engines that have complete fuel systems attached would have to comply with emission standards for fuel line permeation, emissions resulting from daily changes in temperature, and running losses caused from engine heat during operation over a useful life of five years.

SCI engine emission standards

New emission standards for SCI engines would apply starting with the 2021 model year. The proposed Regulations would also introduce standards for NO_X, PM, non-methane HC and CO emissions aligned with the U.S. EPA Tier 2, 3, or 4 emission standards for SCI engines. These standards would apply to new SCI engines that have a displacement of less than 30 L/cylinder.

The most stringent Tier 4 standards would apply to non-remote non-backup SCI engines of all power ranges, whereas backup SCI engines and those destined for use in remote locations would have the option to meet less stringent standards that vary by engine size. The following table illustrates the proposed emission standards that would apply:

Table 3: Applicable tiers for Canadian SCI engine imports, model year 2021 and later

Power Range	Non-Backup and Non-Remote table 3 note*	Backup or Remote
≤37 kW	Tier 4	Tier 2
>37 kW to ≤560 kW	Tier 4	Tier 3
>560 kW	Tier 4	Tier 2

Table 3 Note

Table 3 Note *

Fire pumps have separate, less stringent standards.

Return to table 3 note *referrer

Alternate compliance mechanism for SCI engines

The proposed Regulations include provisions to allow for alternative testing methods to the U.S. EPA certification procedures. These alternative testing methods must be equivalent to or more stringent than the U.S. EPA certification test procedures, which are incorporated by reference into the proposed Regulations. Allowing for alternative test methods would permit the manufacture and importation of new SCI engines that are not certified by the U.S. EPA (e.g. engines from other parts of the world), or that are certified by the U.S. EPA but not to the standards that are required by the proposed emission standards. In the latter case, lower-tier engines could be imported into Canada, if they are subsequently modified with emission control after-treatment devices and tested to ensure they comply with the U.S. EPA Tier 4 emission standards.

The Minister of the Environment (the Minister) would determine the equivalency of the alternate test procedure based on the evidence of conformity submitted to the Minister in respect of the engine.

Reporting requirements for MCI, LSI and SCI engines

The proposed Regulations would introduce the option to fulfill import declaration requirements via the Single Window Initiative of the Canada Border Services Agency (CBSA) and service providers that are qualified by the CBSA to transmit Integrated Import Declarations (IIDs). The IID integrates the Department's declaration with data submissions required by the CBSA and other government programs. When an IID is submitted, the Department will receive applicable data elements for review and retention. Therefore, importers who choose to use the IID are not required to submit separate import declarations to the Minister.

In addition, companies that import 50 or more LSI, SCI and MCI engines in a calendar year may submit a single import declaration to the Minister for each year in which they import engines. Companies that import fewer than 50 engines in a calendar year are required to submit a declaration to the Minister for each shipment of engines prior to their importation. Under the proposed Regulations, a person who is not a company that imports fewer than 10 engines in a year would not be required to submit an import declaration.

The proposed Regulations would also include record keeping and several other administrative provisions that would be necessary to administer and enforce compliance with the regulatory requirements, similar to what is required under the current Regulations. These provisions include the following:

- A national emissions mark is required on engines manufactured in Canada. A company must be authorized by the Minister to apply the mark;
- Companies are required to provide emission-related maintenance instructions;
- Companies must be able to produce evidence of conformity;
- Engines to be installed in machines in Canada would need to be accompanied by instructions for installing the engine and emission control system;
- A notice of defect must be given by the company to the Minister and each current owner of the affected products if there is a defect in the design, construction or functioning of the engine that affects or is likely to affect its compliance with a prescribed standard; and
- Companies that wish to import non-compliant engines exclusively for the purposes of demonstration, exhibition, evaluation or testing must submit a declaration under paragraph 155(1)(a) of CEPA.

Other provisions

The proposed Regulations also introduce flexibility for the following cases:

- MCI and SCI engines used in emergency situations;
- MCI and SCI engines for use in hazardous locations;
- MCI and SCI engines for use in remote locations;
- MCI engines for use at North Warning System sites;
- LSI engines with a maximum power output of 30 kW or less;
- LSI engines with a maximum power output of 250 kW or more and that run on natural gas or propane;
- MCI and LSI engines designed to operate on non- commercial fuels;
- SCI fire pump engines; and
- SCI engines used for backup power.

Minor administrative changes to other regulations

Off-Road Small Spark-Ignition Engine Emission Regulations

The proposed Regulations would include a number of consequential amendments to the *Off-Road Small Spark-Ignition Engine Emission Regulations* (the SSI Regulations), as well as some amendments to improve consistency and clarity, as requested by the SJCSR. One amendment would align the emission standards with those of the U.S. EPA applicable to

small engines used to power bicycles when the weight of the bicycle with its engine and complete fuel system weighs less than 20 kg. These amendments, otherwise, are minor in nature.

Marine Spark-Ignition Engine, Vessel and Off-road Recreational Vehicle Emission Regulations

To be consistent with the approach of the U.S. EPA, the proposed Regulations would include a consequential amendment to the *Marine Spark-Ignition Engine, Vessel and Off-road Recreational Vehicle Emission Regulations* (the MERV Regulations) to allow MCI engines used in recreational vehicles to meet the standards for either a recreational vehicle or an MCI engine, and several amendments to improve consistency and clarity.

Coming into force

The proposed Regulations would come into force six months after the day on which they are registered.

Regulatory and non-regulatory options considered

Several regulatory and non-regulatory measures have been considered, and descriptions of each are provided below.

Status quo

Under the status quo, it is estimated that around 90% of LSI engines imported annually already comply with the Tier 2 standards which are not presently mandatory in Canada. Although the proportion of compliant imports cannot be determined with the current SCI engine import data, it is estimated that 95% of the SCI engine imports already comply with the proposed emission standards. However, the option of maintaining the status quo does not take full advantage of the opportunity for reductions in emissions from LSI and SCI engines.

While the vast majority of imported engines comply with the U.S. EPA standards, every year approximately 3 000 LSI engines are imported into Canada, which emit up to 10 times more HC and NO_x compared to engines with the latest technologies. At the same time, about 200 SCI engines are imported for non-backup non-remote use, which emit up to 80% more non-methane HC + NO_x and up to 10 times more PM than similar engines destined for use in the United States. Without these standards, there is a risk that the import of higher-emitting LSI and SCI engines could continue. Maintaining the status quo would also be inconsistent with Canada's commitment, under the Canada–U.S. Air Quality Agreement, to address transboundary air pollution and the objectives of the Canada–U.S. Regulatory Cooperation Council. Thus, this option was rejected.

Regulatory approach unique to Canada

If Canada adopted regulatory standards that were different from those introduced by the United States, product availability would potentially be reduced in the Canadian marketplace, and engine costs would likely increase. Unique Canadian standards would require additional design, manufacturing costs and extensive development of testing and certification procedures. The higher costs would be partly passed on to consumers. In addition, there would be an increased administrative burden on companies because they would be required to submit evidence of conformity to the Minister for all products to be imported, which would carry extra costs for businesses. Furthermore, if Canada adopted less stringent emission standards than those introduced by the U.S. EPA, environmental and health benefits would not be secured.

Harmonized regulatory approach

It is estimated that the benefits associated with environmental impact reductions would be greatest when aligning with U.S. EPA standards versus those of any other country because they are currently the most progressive of any federally established air pollutant emission standards for LSI and SCI engines. The alignment of emission standards in Canada with those of the United States would allow for incremental reductions in emissions by means of preventing the import of LSI and SCI engines into Canada that do not meet the U.S. EPA's emission standards. Alignment with EPA standards therefore represents a cost-effective method for Canada to achieve important reductions in emissions from LSI and SCI engines and would be consistent with the objectives of the Canada–U.S. Regulatory Cooperation Council, and the Ozone Annex to the Canada–United States Air Quality Agreement. For these reasons, a harmonized regulatory approach was selected.

Benefits and costs

Analytical approach

An analysis of the incremental impacts (benefits and costs) was conducted using baseline and regulatory scenarios. To the extent possible, benefits and costs are quantified, monetized and expressed in 2018 Canadian dollars. Calendar years

2020 to 2035 are used as the time frame for this analysis, with 2018 being the present value base year and the more stringent standards for air pollutant emissions applying to the 2021 and later model year LSI and SCI engines. Further, the central analysis employs a 3% annual discount rate, in accordance with the *Canadian Cost-Benefit Analysis Guide: Regulatory Proposals*. When restricted by a lack of appropriate data, the impacts have been described in qualitative terms.

To provide an indication of the possible cost impacts and emission reductions that may be achieved as a result of the proposed Regulations, the following two scenarios were modelled: (1) a baseline scenario in which it is assumed that, in the absence of the proposed Regulations, around 90% of the LSI engines entering the Canadian market would continue to comply with the U.S. EPA Tier 2 standards, and 95% of the SCI engines would continue to comply with the applicable standards in the United Stated; and (2) a regulatory scenario in which 100% compliance with these standards is assumed. The assumption that 90% of imports of LSI engines are compliant with the Tier 2 standard is based on an analysis of the countries of origin of historical imports and the emission standards in those areas. For SCI engines, 95% of engines are assumed to comply with the proposed standards based on an analysis of the Canadian engine fleet. The analysis only considers the incremental costs and emission reductions projected to be generated by the proposed Regulations.

There are no expected benefits or costs associated with the minor changes to the SSI or MERV Regulations, since the proposed changes would not significantly alter the current standards or introduce requirements that deviate from what is already expected to occur in the baseline scenario. The flexibility introduced for MCI engines used in certain applications are expected to have negligible impact given that the number of these engines and the number of hours of usage is low. These changes are therefore excluded from the analysis of benefits and costs.

Summary of impacts

From 2021 to 2035, the proposed Regulations are projected to reduce air pollutant emissions from LSI engines, including reductions of about 179 500 tonnes of CO emissions, 26 900 tonnes of NO_x emissions, and 10 600 tonnes of VOC emissions. The proposed LSI emission standards would also contribute to reductions in the release of greenhouse gases, with the total estimated reductions being equivalent to the impact of 133 000 tonnes of carbon dioxide (CO_2). Air pollutant emissions from SCI engines are expected to be reduced over this same time frame, including reductions in non-methane HC + NO_x (combined) of about 19 600 tonnes, and reductions in PM emissions of about 900 tonnes. Other estimated benefits of the proposed Regulations include fuel savings for owners of LSI engines in the order of 56 million litres (ML) of gasoline and mixed fuel, 138 ML of liquefied petroleum gas, and 145 ML of natural gas. The total present value of these fuel savings is estimated to be about $110.9 million.

It is estimated that the total costs of the proposed Regulations would be around $75.2M over 2021 to 2035, which includes about $62M to domestic importers of LSI and SCI engines, $3M in additional costs to operate Tier 4 SCI engines, and costs to the federal government of about $3.5M for enforcement and $127,000 for compliance promotion activities.

Benefits

The proposed Regulations would reduce emissions of smog-forming air pollutants in Canada from LSI and SCI engines. LSI engines compliant with the Tier 2 emission standards would gradually replace existing higher- emitting engines as these older engines are removed from service, allowing for progressively greater emission reductions of air pollutants in Canada from the operation of the fleet of LSI engines. Similarly, the fleet of SCI engines would produce fewer emissions over time as higher- emitting non-backup non-remote engines are replaced by those that comply with the Tier 4 standards. Minimal near-term climate benefits are also expected given that reductions in PM, NO_x and VOCs would result in reductions in black carbon and ozone, both SLCPs.

LSI Benefits

The Department forecasted emissions from LSI engines for four reference years (2017, 2020, 2025 and 2030) using the peer-reviewed EPA NONROAD model with Canadian baseline data for the 2010 calendar year. While recognizing that the absence of a comprehensive data set which accurately captures the stock and flow of the LSI engine population in Canada increases uncertainty in forecasting, the forecast depicts an emissions trend that is reasonable and directionally representative based on existing information. The proposed Regulations would come into effect starting with model year 2021. Linear growth rates between the four reference years were applied to estimate cumulative emissions in the baseline and regulatory scenarios for the LSI emission standards. The incremental results can be interpreted as an estimate of the impacts of the proposed Regulations over the 2021 to 2035 period.

The more stringent Tier 2 standards for LSI engines would result in emission reductions of certain air pollutants, including CO, NO_x and VOCs. In particular, the proposed Regulations are projected to reduce CO emissions by about 3 000 tonnes in 2021 and by about 17 000 tonnes in 2035; NO_x emissions by approximately 435 tonnes in 2021 and by about 2 563 tonnes in 2035; and, VOC emissions by about 174 tonnes in 2021 and by approximately 1 000 tonnes in 2035. In total, the

LSI emission standards are expected to reduce CO emissions by about 179 500 tonnes, NO_x emissions by about 26 900 tonnes and VOC emissions by approximately 10 600 tonnes during the analytical time frame. The improved technologies used to meet the LSI emission standards would also reduce the release of several greenhouse gases, including CO_2, methane (CH_4), and nitrous oxide (N_2O), with the total reductions being equivalent to the impact of 133 000 tonnes of CO_2. Using the social cost of carbon, the social cost of methane, and the social cost of nitrous oxide from 2021 to 2035, the value of this co-benefit is estimated to be about $7.8M in present value.

In addition to the projected emission reductions, the proposed Regulations would provide machine owners with fuel savings from the increased fuel efficiency of LSI engines resulting from the adoption of the Tier 2 standards in Canada. From 2021 to 2035, the proposed Regulations are expected to decrease gasoline and multi-fuel use by around 56 million litres, liquefied petroleum gas use by around 138 million litres, and natural gas use by around 145 million litres. Using the 2021 to 2035 fuel price forecasts from the Department's Energy, Emissions and Economy Model for Canada (E3MC), these reductions are estimated to result in savings of about $110.9M in present value.

These substantial savings are foregone in the BAU scenario for the estimated 10% of non-compliant LSI engines, despite the relatively modest compliance costs. This reflects a phenomenon in consumer decision-making known as the energy paradox, which has several possible and complementary explanations (e.g. consumers may undervalue future savings, be overly averse to upfront costs, have incomplete information or understanding of [how to estimate] the value of savings, and/or be considering the uncertainty of future fuel prices). In the context of LSI engines in Canada, importers may lack the incentive to select machines that consume less fuel, since they do not operate the machines and would therefore not enjoy these operating cost savings.

Lastly, maintenance cost savings for LSI engines of about $480 per engine are expected from improvements in reliability and durability as a result of the fuel system upgrades necessary to meet the Tier 2 standard. Total maintenance cost savings are estimated to be approximately $9M in present value over the analytical period.

SCI benefits

The Department forecasted emission reductions for SCI engines by applying the difference in emission standards for PM and non-methane HC + NO_x in the baseline and policy scenarios to the estimated SCI engine imports from 2021 to 2035.

An estimated 8 tonnes of PM and 170 tonnes of non- methane HC + NO_x would be reduced in the first year that the more stringent Tier 4 standards come into effect for non-remote, non-backup SCI engines. The incremental emission reductions resulting from newer Tier 4 engines would be realized throughout the lifespan of the engines; therefore, emission reductions would be greater over time as more of the engine fleet transitions to Tier 4. About 108 tonnes of PM and 2 400 tonnes of non-methane HC + NO_x are expected to be reduced in 2035.

In total, from 2021 to 2035, the proposed SCI engine emission standards are expected to reduce emissions of PM by about 900 tonnes and non-methane HC + NO_x by about 28 200 tonnes. Furthermore, although there is no numerical difference in the Tier 4 CO standards compared to those in the lower tiers, reductions in CO may be a co-benefit of the proposed SCI engine emission standards, since one of the technologies that is used to achieve the necessary PM reductions might also reduce emissions of CO.

Reductions in administrative costs

The proposed Regulations are projected to result in a net decrease in administrative costs by eliminating the requirement, for most Canadian companies that import MCI engines, to submit an import declaration to the Minister, if the required declaration information is submitted to CBSA via the Single Window Initiative IID. However, this would be offset to some extent by the introduction of reporting requirements for importers of LSI and SCI engines. The present value of the administrative cost savings due to the proposed Regulations is estimated to be around $16.7 million.

Health benefits

LSI and SCI engine emissions contain air pollutants that are known to cause adverse human health impacts, through inhalation of directly emitted pollutants or via their transformation in the atmosphere to secondary PM2.5 and ground-level ozone. The health impacts of these pollutants are well documented in the scientific literature and include an increased risk of various cardiovascular and respiratory outcomes, such as an increased risk of premature mortality, asthma attacks, sick days, emergency room visits, and hospitalizations. In addition, it is recognized that there is no exposure threshold for many of these effects.

The emission reductions resulting from the proposed Regulations are small relative to overall anthropogenic emissions and, given available data, the locations of the emission reductions are estimated at the provincial level only. As a result, detailed photochemical modelling of the impact of these emission changes on Canadian air quality was not conducted. It was also

difficult to develop an alternative approach to monetize health benefits, since there is no known correlation between the imports of affected LSI and SCI engines and urban areas. For this reason, there was no credible basis on which to supplement the provincial level data with additional assumptions regarding exposure to human populations. Nevertheless, given the well-established impacts of air pollution on human health and the emissions reductions projected from LSI and SCI engines, it is expected that the proposed Regulations would have meaningful population health benefits in Canada.

As part of the development of the *Multi-Sector Air Pollutant Regulations*, Health Canada carried out an analysis of the health benefits of reducing NO_x emissions from industrial boilers and heaters. That analysis showed that an NO_x reduction from boilers and heaters of approximately 100 000 tons over a period of 20 years would provide health benefits valued at roughly $390 million in present value. In another example, as part of Health Canada's analysis of the amended *On-Road Vehicle Engine and Emission Regulations* and *Sulphur in Gasoline Regulations*, it was estimated that new vehicle and fuel standards would prevent approximately 28 000 tons of NO_x, 16 000 tons of VOCs, and 720 tons of PM2.5 from being emitted from vehicles in the year 2030. It was estimated that the health benefits associated with these emission reductions would be roughly $1.5 billion for year 2030 alone, or $1 billion in present value. These two examples illustrate that the health benefits associated with air pollution emission reductions from a regulation can be substantial.

Environmental benefits

Air pollutants such as NO_x, VOCs and CO are precursors to the formation of secondary particulate matter and ground-level ozone, which impact air quality and the environment by damaging forest ecosystems, crops and wildlife. Deposition of excess nitrogen from NO_x to surface waters may also lead to lake and stream eutrophication, which poses a threat to aquatic biota. Finally, smog and deposition of suspended particles may impair visibility and result in the soiling of surfaces, respectively, thereby reducing the welfare of residents and recreationists, and potentially increasing cleaning expenditures. Detailed modelling of the environmental benefits was not conducted as a result of the data limitations mentioned above.

Costs

LSI costs

Compliance costs per LSI engine to meet the Tier 2 emission standards are assumed to be relatively minor. These standards have been implemented in the United States since 2004, thereby giving manufacturers many years to achieve efficiencies in the manufacturing process. Furthermore, expensive after-treatment devices are not required in order to comply with the proposed Tier 2 emission limits. For this reason, input values from the U.S. Regulatory Impact Analysis were inflated to 2018 Canadian dollars to arrive at a reasonable approximation of the engine compliance costs for the proposed LSI standards. Based on this information, the undiscounted per-engine costs are therefore assumed to be approximately $1,100 for those that use gasoline and multi-fuel and $750 for those that use liquefied petroleum gas (LPG) or natural gas (NG). These incremental costs represent a relatively small proportion of total machine costs, which range from $10,000 to over $200,000. Given that 90% of LSI engine imports are assumed to comply with the Tier 2 standards in the baseline scenario, the costs of the majority of machines on the market are already expected to have these cost increases reflected in their prices.

Using import data from CBSA, these undiscounted annual costs are estimated at $2.4M in 2021, and are estimated to rise to $2.8M in 2035. In present value terms, costs are expected to decrease over time, despite an assumed growth rate in LSI engine imports, due to the effects of discounting. The engine compliance costs that would result from the proposed LSI emission standards from 2021 to 2035 are estimated to be about $29M.

SCI costs

The after-treatment devices, which are often required to meet the Tier 4 NO_x and PM limits, can significantly increase costs when compared to SCI engines of lower tiers. In order to arrive at an accurate estimate of the costs that would be incurred as a result of the proposed Regulations, the Department established a contract to obtain engine cost differentials between the tiers over a variety of power ranges. In addition to the increase in capital cost paid by Canadian importers of SCI engines, there are incremental operating costs associated with the proper use of the after-treatment devices. This includes refilling certain fluids that are used to reduce the release of NO_x, and replacing filters that are used to reduce the release of PM.

The following table presents the average per-engine undiscounted capital and operating costs that are expected to be incurred as a result of the transition to Tier 4 from the Tier 2 or Tier 3 standards.

The proposed Regulations are expected to increase engine costs by about 35% to 50% relative to their costs in the baseline scenario. Given that the purchase of machines powered by SCI engines represents a significant capital expenditure, these cost impacts are expected to be amortized over the lifespan of the machines, which is typically about

15 years.

Applying the above-mentioned per-engine cost increments to the estimated number of non-compliant imports in the first year that the proposed Regulations would come into effect yields a present value capital cost of $2.8M in 2021. The present value capital costs are estimated to be about $1.6M in 2035, with a total discounted capital cost from 2021 to 2035 of about $33M. Operating costs would be about $40,000 in 2021. Operating costs are higher in the later years of the analysis, as more Tier 4 engines are in operation over time, with about $340,000 in present value expected in 2035. In total, the discounted operating costs that would be incurred as a result of the proposed Regulations would be about $3.2M over 2021 to 2035, for a total present value cost associated with the proposed SCI emission standards of approximately $36M.

Miscellaneous costs

Importers and manufacturers of LSI and SCI engines, or the machines that use them, would also carry miscellaneous costs under the regulatory scenario. These additional costs include external testing to demonstrate compliance, and providing, updating and/or translating engine operating instructions for engine purchasers. These costs are estimated to be $6.8M over 2021 to 2035.

Government costs

The federal government would also carry some costs as a result of the proposed Regulations for compliance promotion and enforcement. With respect to enforcement costs, a one-time amount of $340,800 would be required for the training of enforcement officers and $72,600 for strategic intelligence assessment work. Additionally, the estimated annual cost of administration, coordination and analysis to support enforcement activities is $34,000. The annual enforcement costs are estimated to be about $241,900 broken down as follows: roughly $117,400 for inspections (which includes operations and maintenance costs, transportation and sampling costs) and measures to deal with alleged violations (including warnings, environmental protection compliance orders and injunctions), approximately $52,800 for investigations, and about $37,700 for prosecutions, with no additional investments expected to be required for ongoing intelligence.

Alternative test procedures for SCI engines

In contrast to Tier 4 certified SCI engines that are imported from U.S. equipment manufacturers, certain businesses specialize in the production of exhaust after-treatment units that can be added to new Tier 2 or Tier 3 engines to further reduce emissions. These products may be sold to achieve compliance with the provincial engine emissions limits in Ontario, or with the facility-level emission standards in other provinces. To provide flexibility in the demonstration of conformity for these businesses, the proposed Regulations include provisions that would allow for alternative testing to the U.S. EPA methods. Alternative methods must be equivalent or more stringent as the U.S. EPA certification test procedures as determined by the Minister.

Due to data limitations, the allowance of alternative testing methods was not factored into the central analysis.

Summary

The following is a summary of the benefits and costs that are expected to result from the implementation of the proposed Regulations.

Table 5: Summary of estimated benefits and costs, 2020 to 2035

		Total (PV)	Annualized Average
A. Quantified impacts ***(in Can$, 2018 price level)***			
Benefits			
Industry	Fuel savings	110,867,233	9,286,969
Industry	Administrative cost savings	16,666,682	1,396,111
Industry	Maintenance cost savings	8,985,335	752,671
Canadians	GHG emission reductions	7,801,853	653,535
	Total monetized benefits	*144,321,102*	*12,089,285*
Costs			
Industry	LSI engine compliance costs	29,106,079	2,438,117
Industry	SCI engine compliance costs	32,580,809	2,729,183
Industry	SCI engine operating costs	3,184,205	266,730

		Total (PV)	Annualized Average
Industry	Miscellaneous compliance costs	6,754,266	565,782
Government	Government costs	3,620,986	288,270
	Total monetized costs	*75,246,347*	*6,288,081*
	Net monetized benefits	**69,074,756**	**5,801,204**
	B. Quantified impacts (*in non-$)*		
	Positive impacts		
Canadians	CO emission reductions (t)	179,470.9	11,964.72
Canadians	NO_x emission reductions (t)	26,919.6	1,794.64
Canadians	VOC emission reductions (t)	10,601.4	706.76
Canadians	CO_2 equivalent emission reductions (t)	133,079.4	8,871.96
Canadians	Non-methane HC + NO_x emission reductions (t)	19,626.9	1,308.46
Canadians	PM2.5 emission reductions (t)	875.7	58.38
Canadians	Reduced consumption of natural gas (ML)	145.2	9.68
Canadians	Reduced consumption of propane (ML)	137.7	9.18
Canadians	Reduced consumption of gasoline and multi-fuel (ML)	56.1	3.74
	Negative impacts		
Canadians	None	0	0
	C. Qualitative impacts		
	Positive health impacts (avoided health issues) to Canadians from reductions in air pollutant emissions		

Note: A 3% discount rate was used to calculate present value.

A sensitivity analysis with a 7% discount rate was also conducted. Total monetized costs would be $53,456,726 and total monetized benefits would be about $100,286,399 in present value when using a 7% discount rate. This scenario therefore implies a net benefit of $46,829,673 in present value.

“One-for-One” Rule

The “One-for-One” Rule would apply to the proposed Regulations. Since importers of LSI and SCI engines currently have no reporting requirements, the proposed Regulations would increase the administrative burden incurred due to imports of these engines by imposing reporting requirements. This increase in administrative burden is associated with learning about regulatory requirements, record keeping, and gathering and submitting information to demonstrate compliance, among other things. This increase would be more than offset by a decrease in the administrative burden incurred as a result of proposed changes associated with import declarations for MCI engines, as the proposed Regulations would eliminate the requirement for most Canadian companies that import MCI engines to submit an import declaration to the Minister if the required declaration information is submitted to CBSA via the Single Window Initiative IID. These flexible reporting options are assumed to decrease administrative burden through time savings due to reduced information retrieval, and reporting or submitting information. This corresponds with reduced labour costs to staff in administrative as well as management positions. Overall, the off-road engine and machine industry as a whole is expected to incur a net decrease in administrative burden; therefore, this proposal is an OUT.

Stakeholders familiar with the existing reporting requirements were consulted on the administrative costs associated with import declarations and report submissions. Companies that were familiar with the reporting requirements of the current Regulations were sent a questionnaire asking them to confirm the Department’s administrative burden estimates or to supply their own estimates. The Department considered their estimates when calculating the administrative burden change that would result from the proposed Regulations.

The current Regulations would be repealed and replaced with the proposed Regulations, satisfying the requirement that no additional regulatory titles be created. Using constant 2012 Canadian dollars, a 10-year time frame and a 7% discount rate, the proposed Regulations are expected to result in annualized cost savings of $695,722, which is equivalent to an annualized savings of $210 per small business.

Small business lens

For the purposes of the small business lens analysis, a proxy value was generated to estimate the number of small businesses that import MCI, LSI, and SCI engines into Canada. By analyzing information on imports into Canada for the

2016 calendar year, it was established that, in general, companies that import fewer than 21 engines in a calendar year could be classified as small businesses or “small business importers,” based on the declared values of their imports made under several transportation-related regulations administered by the Department. As a result, it is estimated that the proposed Regulations would have an impact on up to 2 652 small business importers. Using historical data on the proportion of LSI and SCI engine imports by business size, these small businesses are expected to carry incremental compliance costs of $2,096,205 in net present value, and $298,452 annualized.

Further, a small number of machine manufacturing companies that install or modify fuel systems on MCI, LSI, and SCI engines in Canada would be considered engine manufacturers under the proposed Regulations, and they would consequently be required to demonstrate compliance with the evaporative emission standards. It is assumed that, in order to demonstrate compliance, all of the small Canadian manufacturers would opt to use engine components that have already been certified by the U.S. EPA to avoid carrying the costs associated with independently conducting emission test procedures.

The proposed Regulations contain two elements that would reduce administrative burden for small businesses. First, as described above, the proposed Regulations introduce the option to fulfill import declaration requirements via the CBSA’s Single Window Initiative and service providers that are qualified to transmit IIDs. Second, businesses who are not “companies” as defined under CEPA and who also import fewer than 10 engines in a calendar year would be exempted from the requirement to submit declarations to the Minister. Using constant 2012 Canadian dollars, a 10-year time frame and a 7% discount rate, these flexible reporting options would result in annualized savings of about $1,046,170 for select small businesses, using a 10-year time frame, a 7% discount rate, and expressing values in 2012 Canadian dollars. The present value of the administrative cost savings for all businesses is estimated to be $8,984,206.

Although businesses that are not “companies,” as defined in CEPA, that import fewer than 10 engines per calendar year would not be required to submit declarations, compliance monitoring and enforcement of the regulatory requirements can be effected through the use of Harmonized System Code import data from CBSA. Therefore, this flexibility is not expected to introduce any considerable risks to human health or the environment as a result.

From December 2014 through June 2015, and in November 2017, the Department consulted five small businesses subject to the Regulations, as well as three industry associations representing small importers in Canada, in order to discuss the proposed measures to reduce administrative burden under the proposed Regulations. During these discussions, the Department proposed options for submitting importation declarations. In general, the stakeholders were supportive of the proposed option of accepting CBSA’s Integrated Import Declaration, and of not requiring submission of declarations for businesses that are not “companies” as defined by CEPA and that import fewer than 10 engines annually.

Consultation

LSI and MCI engines consultation

A preconsultation webinar invitation was sent out to approximately 90 stakeholders, consisting of a cross- section of small, medium and large business, and industry associations. The webinar took place on December 3, 2014, and there were approximately 40 attendees comprising MCI and LSI importers and manufacturers, including three associations (Association of Equipment Manufacturers, Engine Manufacturers Association, and Industrial Truck Association). These stakeholders were provided with an overview of the planned provisions for LSI engines and the regulatory changes being considered for MCI engines. Participants expressed broad support for the alignment of the proposed Regulations with the corresponding regulations in the United States and the proposed reduction in administrative burden.

A working group of MCI and LSI stakeholders was established in February 2015 to discuss certain provisions of the proposed Regulations. The working group consisted of approximately 10 industry stakeholders comprised of association representatives, engine manufacturers and Canadian importers. Two working group discussions were held in March 2015. There was broad support for the proposed approach to streamline reporting as well as other proposed administrative flexibility. Stakeholders were also supportive of aligning standards for compression-ignition (CI) engines used in off-road recreational vehicles with those of the U.S. EPA.

A working group meeting was held in April 2016 to discuss a proposed approach for the replacement engine provisions under the current Regulations. The Department presented an overview of the current replacement engine provisions in the current Regulations, the issues under consideration, and a proposed solution to be considered for the proposed Regulations. Overall, the attendees were appreciative of the opportunity to comment and expressed that Canadian provisions should more closely mirror similar provisions in the United States, minimize delays to getting replacement engines into service, and minimize reporting burden. The Department provided answers to several questions concerning administration of the current provisions and acceptable evidence of conformity.

A face-to-face meeting took place in November 2017 with 19 stakeholders, mostly representing large businesses and two

industry associations, to discuss a proposed approach to declaration and reporting requirements, and several technical topics including requirements for replacement engines, engines used in hazardous locations, and the use of emission control override devices in machines used in emergency situations. Following the discussions, industry provided additional information relevant to the discussed topics to support regulatory development activities.

Provinces and territories were consulted through the Canadian Council of Ministers of the Environment (CCME), and expressed support for alignment with the U.S. EPA and the introduction of more stringent emission standards for these products, due to the positive health and environmental benefits of these progressive standards. National Indigenous groups were informed of the proposed Regulations in meetings in June 2018 that provided an overview of the Energy and Transportation Directorate's initiatives. Discussions took place with the Department of National Defence between January and July 2018 concerning military activities that involve CI engines.

SCI engines consultation

The Department announced its plan to regulate new SCI engines through publication on Environment and Climate Change Canada's Forward Regulatory Plan website in November 2016. This announcement launched pre- *Canada Gazette*, Part I, consultations with stakeholders including other government departments, provinces and territories, manufacturers, importers, industry associations, small businesses, non-governmental representatives and national Indigenous representatives. Generally, the regulated community (importers and manufacturers) and other stakeholders supported the proposed policy direction.

The Department held eight working group meetings with SCI stakeholders between March 2017 and June 2018. Working group meetings focused on the policy directions under consideration in the proposed regulatory approach. The topics and outcomes that were deliberated during working group meetings are set out below.

Remote locations

Most stakeholders, including industry and environmental non-governmental organizations, agreed that less stringent standards for SCI engines should be allowed in remote locations due to concerns regarding the reliability of Tier 4 engines in remote locations where stationary diesel engines are often the only source of power. However, some industry members expressed that people living in remote locations should benefit from the cleanest air quality afforded by engines subject to the Tier 4 emission standards. The Department has decided that engines that are imported for use in remote areas must, at a minimum, comply with the Tier 2 or Tier 3 standards.

Backup or emergency

Most stakeholders also agreed that SCI engines intended for backup or emergency purposes should have the option of complying with the less stringent standards. The after-treatment systems used in Tier 4 engines take time to reach the operating temperatures that are necessary to efficiently reduce emissions, and the monthly maintenance testing for backup engines is not sufficient to reach these temperatures. However, some industry members questioned the flexibility given to backup or emergency engines given that this would not achieve the maximum environmental benefit. The Department has decided that, given the cost premium of Tier 4 over Tier 2 or Tier 3 engines and the limited hours of use of backup or emergency engines, these engine imports must, at a minimum, comply with the Tier 2 or Tier 3 standards.

End users

During consultations, it was brought to the Department's attention that the proposed flexibility for backup SCI engines could be abused (e.g. end users could purchase a lower cost backup SCI engine and then use it in prime power applications). Industry stakeholders expressed concern that an importer or a manufacturer would be held responsible when they have no authority over the end use of an engine. The working group agreed that the importer or manufacturer would sell the appropriate engine based on the expressed needs of the end user and that the label attached to the engine would reflect its end use.

Alternative evidence of conformity

During the development of the proposed Regulations, a stakeholder approached the Department with their technology that reduces NO_x and PM emissions in Tier 2 and Tier 3 engines, and proposed that this technology could be used to comply with the regulatory requirements for non-backup non-remote SCI engines. The use of this technology would require testing in Canada to quantify the release of engine emissions. Therefore, the stakeholder requested that the method they use to determine compliance with provincial regulations should be considered valid and included in the proposed Regulations. The Department concluded that the current test procedures performed by this stakeholder are not as rigorous as the U.S. EPA

certification procedures. However, the Department has included a clause to allow for the use of an alternative test method where it is demonstrated to be equivalent to the U.S. EPA test method.

Several other stakeholders opposed the concept of alternative test procedures and advocated for U.S. EPA test procedures in order that a level playing field be maintained for all regulatees. The Department views alternative emission test methods that are demonstrated to be equivalent or more stringent than the methods required in the proposed Regulations as having no loss in environmental benefit while breaking down barriers to trade. Therefore, the Department has moved forward with proposing provisions to allow the Minister to approve alternative emission test methods that are demonstrated to be equivalent or more stringent than the methods incorporated by reference into the proposed Regulations as requested by some industry members. These alternative standards have been included to provide another compliance pathway for stakeholders that sell post-manufacture emission reduction products.

Closing the loop

Closing the loop consultation sessions were held to provide the final regulatory approach to the broad stakeholder community in advance to the publication of the proposed Regulations in the *Canada Gazette*, Part I. A 75-day formal public comment period will follow publication of the proposed Regulations and new consultation sessions may be held if appropriate ahead of publication in the *Canada Gazette*, Part II.

Regulatory cooperation

Since the proposed Regulations would align Canadian emission standards for LSI and SCI engines with the standards in force in the United States, exchange of compliance verification and testing information between the governments of Canada and the United States is expected. Alignment with U.S. air pollutant emission standards for off-road engines is consistent with the objectives of the Canada–U.S. Air Quality Agreement and the Canada–U.S. Regulatory Cooperation Council. Notably, as a member of this council, Canada has committed to more effective approaches to regulation that enhance the economic competitiveness and well-being of the two countries, while maintaining high standards with respect to public health and safety and environmental protection.

Rationale

The Government of Canada's AAP HI aims to ensure that Canadians have clean air and the environment is protected. Under the Ozone Annex to the Canada–U.S. Air Quality Agreement, Canada committed to develop and establish emission standards from new vehicles and engines that align with the corresponding U.S. standards in order to address transboundary air pollution. This aligned regulatory approach would be consistent with Canada's commitment and the objectives of the Canada–U.S. Regulatory Cooperation Council. The proposed Regulations are consistent with this commitment and are a cost-effective alternative for Canada to achieve its chosen environmental objectives.

Establishing aligned emission standards would also ensure that all manufacturers, importers and distributors operating in the highly integrated Canada–U.S. market comply with the same standards. Without these aligned standards, there is a risk that the import of higher-emitting LSI and SCI engines could continue. Such a scenario would result in adverse impacts on the environment and the health of Canadians. Using the analytical assumptions previously discussed in this statement, it is projected that there would be quantified emission reductions to the environment over the first 15 years of implementation of about 179 500 tonnes of CO, 26 900 tonnes of NO_X, and 10 600 tonnes of VOCs from LSI engines, as well as 19 600 tonnes of non-methane HC + NO_X, and 900 tonnes of PM from SCI engines. Canadian importers of off-road engines would realize net reductions in administrative costs of $16.7M. Owners of machines powered by LSI engines are expected to save $9M on maintenance costs and an estimated $110.9M on fuel. The proposed LSI standards would also yield reductions in the release of GHGs valued at $7.1M. Importers and consumers of these engines are expected to assume capital costs of about $61.7M, an increase in operating costs of about $3.2M, and an increase in other miscellaneous costs of about $6.8M. The proposed Regulations would also impose compliance promotion and enforcement costs to the federal government of $3.6M, yielding a total present value cost of approximately $75.2M over 2020 to 2035. The expected $144.3M in benefits of the proposed Regulations therefore exceed the estimated costs, resulting in a net benefit for society.

The proposed Regulations are structured in a manner that would deliver on the objectives of reducing air pollutant emissions from LSI and SCI engines by aligning Canadian standards and test procedures with those of the U.S. EPA and of minimizing regulatory administrative burden on companies. The proposed Regulations were developed in consultation with stakeholders from industry, including engine and machine manufacturers, importers and industry associations, as well as with the provincial and territorial governments, environmental non- governmental organizations, and other federal government departments.

Strategic environmental assessment

LSI engines

The proposed Regulations have been developed under the AAP HI. A strategic environmental assessment was completed for the AAP HI and a public statement was issued in 2018. The assessment concluded that activities under the AAP HI support the Federal Sustainable Development Strategy's goal of minimizing the threats to air quality so that the air Canadians breathe is clean and supports healthy ecosystems.

SCI engines

The SCI engine portion of the proposed Regulations has been developed under the Pan-Canadian Framework. A strategic environmental assessment (SEA) for the Pan-Canadian Framework was completed in 2016. The SEA concluded that regulatory policies developed under the Pan-Canadian Framework are expected to reduce GHG emissions, black carbon in the case of the proposed Regulations, and are in line with the goals in the 2016–2019 Federal Sustainable Development Strategy of effective action on climate change and clean energy.

Implementation, enforcement and service standards

The proposed Regulations would come into force for the 2021 model year MCI, LSI and SCI engines in Canada. The Department plans to undertake various compliance promotion activities associated with the proposed Regulations, such as providing information to regulated parties concerning the requirements of the proposed Regulations, maintaining a web page related to the proposed Regulations on the CEPA Environmental Registry, distributing advisory emails and letters, and responding to inquiries. A guidance document would also be published on the Department's web page to facilitate the implementation of the proposed Regulations and to present regulatory requirements such as evidence of conformity and the procedures that should be followed when submitting required documentation to the Minister.

For compliance verification purposes, departmental enforcement officers would apply the Compliance and Enforcement Policy for CEPA to the proposed Regulations in the same manner as this policy is applied to the current Regulations. Lastly, service standards would continue to apply to the proposed Regulations in the same manner as they are applied to the current Regulations.

Performance measurement and evaluation

The expected outcome of the proposed Regulations will be reported as an indicator within the Addressing Air Pollution Horizontal Initiative. The AAP HI outcomes and performance indicators are reported annually through the Department's Departmental Results Report. The AAP HI indicators are found in the Air Quality Program Performance Information Profile within the Departmental Results Framework. The immediate outcomes of the proposed Regulations contribute to the shared ultimate program outcome: Canadians would have clean air; and the intermediate mitigation outcome: Canadian air pollutants would be reduced. The intermediate mitigation outcome is determined on the basis of two performance indicators: emissions of air pollutants from industrial and transportation sources in tonnes of fine particulate matter, sulphur oxides, NO_x, and VOCs; and emissions of air pollutants from transportation and mobile sources in tonnes of CO.

Clear and quantified performance indicators would be defined to measure the progress of compliance with federal air pollution regulations which would contribute to the AAP HI outcome. For example, these indicators would include measurements of incidences of non-compliance reported by enforcement officers, compliance with requirements for records that regulated parties must submit to the Minister and emissions testing of samples of CI and LSI engines. Compliance verification would be largely based on current programs that are carried out to verify compliance with the Regulations and other regulations related to emissions from transportation sources. Follow-up assessments would be scheduled in accordance with the Department's regulatory planning cycle.

Contacts

Matt Watkinson
Director
Regulatory Analysis and Valuation Division
Environment and Climate Change Canada
200 Sacré-Cœur Boulevard
Gatineau, Quebec
K1A 0H3
Email: ec.darv-ravd.ec@canada.ca

Stéphane Couroux
Director
Transportation Division
Environment and Climate Change Canada
351 Saint-Joseph Boulevard

Gatineau, Quebec
K1A 0H3
Email: ec.apregdevinfo-infodevregpa.ec@canada.ca

Magda Little
Acting Director
Electricity and Combustion Division
Environment and Climate Change Canada
351 Saint-Joseph Boulevard
Gatineau, Quebec
K1A 0H3
Email: ec.combustion.ec@canada.ca

PROPOSED REGULATORY TEXT

Notice is given, pursuant to subsection 332(1) of the *Canadian Environmental Protection Act, 1999*, that the Governor in Council, pursuant to sections 160 and 319 of that Act, proposes to make the annexed *Off-road Compression-Ignition (Mobile and Stationary) and Large Spark-Ignition Engine Emission Regulations*.

Any person may, within 75 days after the date of publication of this notice, file with the Minister of the Environment comments with respect to the proposed Regulations or, within 60 days after the date of publication of this notice, file with that Minister a notice of objection requesting that a board of review be established under section 333 of that Act and stating the reasons for the objection. All comments and notices must cite the *Canada Gazette*, Part I, and the date of publication of this notice, and be addressed to the Director, Transportation Division, Environmental Protection Branch, Department of the Environment, Gatineau, Quebec K1A 0H3 (fax: 819-938-4197; email: EC.APRegDevInfo-InfoDevRegPA.EC@canada.ca).

A person who provides information to the Minister of the Environment may submit with the information a request for confidentiality under section 313 of that Act.

Ottawa, February 28, 2019

Jurica Čapkun
Assistant Clerk of the Privy Council

Off-road Compression-Ignition (Mobile and Stationary) and Large Spark-Ignition Engine Emission Regulations

Interpretation

Definitions

1 (1) The following definitions apply in these Regulations.

- ***Act*** means the *Canadian Environmental Protection Act, 1999*. (*Loi*)
- ***adjustable parameter*** means a device, a system or an element of design that is capable of being adjusted to affect the emissions or performance of an engine during emission testing or normal in-use operation, but does not include a device, a system or an element of design that is permanently sealed by the engine manufacturer or that is inaccessible using ordinary tools. (*paramètre réglable*)
- ***CFR*** means chapter I of Title 40 of the *Code of Federal Regulations* of the United States, as amended from time to time. (*CFR*)
- ***CFR 60*** means subchapter C, part 60, of the CFR. (*CFR 60*)
- ***CFR 86*** means subchapter C, part 86, of the CFR. (*CFR 86*)
- ***CFR 89*** means subchapter C, part 89, of the CFR. (*CFR 89*)
- ***CFR 94*** means subchapter C, part 94, of the CFR. (*CFR 94*)
- ***CFR 1039*** means subchapter U, part 1039, of the CFR. (*CFR 1039*)
- ***CFR 1042*** means subchapter U, part 1042, of the CFR. (*CFR 1042*)
- ***CFR 1048*** means subchapter U, part 1048, of the CFR. (*CFR 1048*)
- ***CFR 1051*** means subchapter U, part 1051, of the CFR. (*CFR 1051*)

- ***CFR 1054*** means subchapter U, part 1054, of the CFR. (*CFR 1054*)
- ***CFR 1060*** means subchapter U, part 1060, of the CFR. (*CFR 1060*)
- ***CFR 1068*** means subchapter U, part 1068, of the CFR. (*CFR 1068*)
- ***complete fuel system*** means a fuel system that is attached to an engine and that consists of fuel lines and at least one fuel tank. (*système complet d'alimentation en carburant*)
- ***compression-ignition engine*** means an engine that operates as a reciprocating internal combustion engine other than an engine that operates under characteristics significantly similar to the theoretical Otto combustion cycle or uses a spark plug or other sparking device. (*moteur à allumage par compression*)
- ***crankcase emissions*** means substances that are emitted into the atmosphere from any portion of the crankcase ventilation or lubrication systems of an engine and that cause air pollution. (*émissions du carter*)
- ***element of design*** means, in respect of an engine,
- **(a)** any control system, including computer software, electronic control systems and computer logic;
- **(b)** any control system calibrations;
- **(c)** the results of systems interaction; or
- **(d)** any hardware items. (*élément de conception*)
- ***emergency machine*** means a machine that is designed
- **(a)** to be used exclusively for aircraft rescue or to fight fires at airports;
- **(b)** primarily to fight wildfires, including a vehicle that is designed to be equipped with an auxiliary firefighting machine; or
- **(c)** to be used exclusively in emergency situations. (*machine de première intervention*)
- ***emergency situation*** means any situation in which there is a risk of loss of human life. (*situation d'urgence*)
- ***emission control system*** means any device, system or element of design that controls or reduces the emissions from an engine. (*système antipollution*)
- ***emission family*** means,
- **(a)** in respect of a company's engines that are covered by an EPA certificate, the grouping that is specified in the EPA certificate;
- **(b)** in respect of any fuel lines and fuel tanks that form part of the complete fuel system of an engine and that are covered by one or more EPA certificates, the grouping that is specified in the EPA certificates;
- **(c)** in respect of a company's engines other than those referred to in paragraph (a), the grouping determined in accordance with,
- **(i)** in the case of mobile compression-ignition engines — other than those referred to in subparagraph (iii) — section 230, subpart C, of CFR 1039 and, if the engine conforms to the alternative standards referred to in section 14, section 645(c), subpart G, of CFR 1039,
- **(ii)** in the case of stationary compression-ignition engines that have a per-cylinder displacement of
- **(A)** more than 10 L, section 230, subpart C, of CFR 1042 or, in the case of an engine that conforms to the alternative standards referred to in subsection 16(1) or (3), section 204(a) to (c), of subpart C, of CFR 94, and
- **(B)** 10 L or less, section 230, subpart C, of CFR 1039 or, in the case of an engine that conforms to the alternative standards referred to in subsection 16(1) or (3), section 116(a) to (d), of subpart B, of CFR 89,
- **(iii)** in the case of mobile compression-ignition engines that are or will be installed in recreational vehicles, section 230, subpart C, of CFR 1051, and
- **(iv)** in the case of large spark-ignition engines, section 230, subpart C, of CFR 1048; or
- **(d)** in respect of any fuel lines and fuel tanks that form part of the complete fuel system other than those referred to in paragraph (b), the grouping determined in accordance with section 230, subpart C, of CFR 1060. (*famille d'émissions*)
- ***EPA*** means the United States Environmental Protection Agency. (*EPA*)
- ***EPA certificate*** means a certificate of conformity to United States federal standards issued by the EPA. (*certificat de l'EPA*)
- ***evaporative emissions*** means fuel compounds that are emitted into the atmosphere from an engine that is fuelled with volatile liquid fuel, other than exhaust emissions, crankcase emissions and smoke emissions. (*émissions de gaz*

d'évaporation)

- ***exhaust emissions*** means substances emitted into the atmosphere from any opening downstream from the exhaust port of an engine. (*émissions de gaz d'échappement*)
- ***fire-pump engine*** means a stationary internal combustion engine that is certified by the National Fire Protection Association and designed to be used in emergency situations to provide power to pump water for fire suppression or prevention. (*moteur de pompe à incendie*)
- ***fuel line*** means hose, tubing and primer bulbs containing or exposed to liquid fuel — including moulded hose, tubing and primer bulbs — that transport fuel to or from an engine, excluding
- **(a)** fuel tank vent lines;
- **(b)** segments of hose or tubing in which the external surface is normally exposed to liquid fuel inside the fuel tank; and
- **(c)** primer bulbs that contain liquid fuel only for priming the engine before starting. (*conduite d'alimentation en carburant*)
- ***fuel tank*** means a tank that is equipped with a cap and designed to hold fuel. (*réservoir de carburant*)
- ***hazardous location*** means any location in which an *explosive gas atmosphere* — as defined in section 18-002 of the most recent version of the Canadian Standards Association standard C22.1, *Canadian Electrical Code, Part 1* — is or may be present. (*emplacement dangereux*)
- ***large spark-ignition engine*** means an engine that
- **(a)** operates under characteristics significantly similar to the theoretical Otto combustion cycle;
- **(b)** uses a spark plug or other sparking device; and
- **(c)** develops more than 19 kW of power measured at the crankshaft, or its equivalent, when equipped only with standard accessories that are necessary for its operation. (*gros moteur à allumage commandé*)
- ***machine*** means anything that is powered by an engine. (*machine*)
- ***mobile*** means, in respect of an engine, any engine that is designed to be used in or on a machine that is designed to be mobile. (*mobile*)
- ***model year*** means the year, as determined under section 4, that is used by a manufacturer to designate a model of engine. (*année de modèle*)
- ***remote location*** means any geographic area that is not serviced by either of the following:
- **(a)** an electrical distribution network that is under the jurisdiction of the North American Electric Reliability Corporation or the main Newfoundland and Labrador electrical distribution networks; or
- **(b)** a natural gas distribution network. (*région éloignée*)
- ***replacement engine*** subject to subsection 25(2), means an engine that is manufactured to replace the engine of a machine for which no engine exists that
- **(a)** conforms to the applicable standards referred to in sections 10 to 23;
- **(b)** has the physical or performance characteristics necessary for the operation of the machine; and
- **(c)** is manufactured by the manufacturer of the original engine or the replacement engine. (*moteur de remplacement*)
- ***smoke emissions*** means substances in exhaust emissions that prevent the transmission of light. (*émissions de fumée*)
- ***stationary*** means, in respect of an engine, any engine that is designed to be used in or on a machine that is designed to be stationary. (*fixe*)
- ***transportation refrigeration unit*** means a refrigeration system that is powered by an engine — other than an engine that meets the criteria set out in any of sections 645(f)(1) to (4), subpart G, of CFR 1039 — and that is designed to control the temperature of products that are transported in rolling stock, vehicles or trailers. (*dispositif frigorifique de transport*)
- ***unique identification number*** means a number, consisting of Arabic numerals, Roman letters or both, that the manufacturer assigns to the engine for identification purposes. (*numéro d'identification unique*)
- ***useful life*** means the period of time or use in respect of which an emission standard applies to an engine, attached fuel line or attached fuel tank as set out in subsection 10(2), 11(3), 12(2), 13(2), 14(2), 15(2), 16(4), or 18(5), as the case may be. (*durée de vie utile*)
- ***volatile liquid fuel*** means any fuel that is a liquid at atmospheric pressure and has a Reid vapour pressure greater than

13.79 kPa. (*carburant liquide volatil*)

Incorporation by reference

(2) Standards that are incorporated by reference in these Regulations from the CFR are those expressly set out in the CFR and must be read as excluding

- **(a)** references to the EPA or its Administrator exercising discretion;
- **(b)** alternative standards or exceptions related to the averaging, banking and trading of emission credits, to small volume manufacturers or to financial hardship; and
- **(c)** standards or evidence of conformity of any authority other than the EPA.

Terms used in CFR

(3) For the purposes of these Regulations, a reference in the CFR to

- **(a)** “nonroad vehicle” and “nonroad equipment” is to be read as “machine”;
- **(b)** “engine family” is to be read as “emission family”; and
- **(c)** “nonroad engine” is to be read as “off-road engine”.

Interpretation of standards

(4) The standards set out in the CFR that are referred to in these Regulations are the certification, in-use and field-testing standards and the test procedures, fuels and calculation methods referred to in CFR 60, CFR 89, CFR 94, CFR 1039, CFR 1042, CFR 1048, CFR 1051, CFR 1054, CFR 1060 or CFR 1068, as the case may be, for the model year in question.

Concurrent sale

2 For the purposes of these Regulations, an engine that is sold in Canada is considered to be sold concurrently in Canada and in the United States if an engine that belongs to the same emission family — or to the same emission families in the case of an engine that is subject to evaporative emission standards that belongs to more than one emission family — is offered for sale in the United States during the 365 days preceding

- **(a)** in the case of an engine that is imported into Canada, the day on which it is imported; and
- **(b)** in the case of an engine that is manufactured in Canada,
- **(i)** the day on which the national emissions mark is applied to the engine, if known, or
- **(ii)** if the day referred to in subparagraph (i) is not known, the day on which the manufacture of the engine was completed.

Application

Prescribed engines

3 These Regulations apply in respect of the engines that are prescribed under section 5.

Model Year

Model year

4 (1) A year that is used by a manufacturer of an engine as a model year must

- **(a)** if the period of production of a model of engine does not include January 1 of a calendar year, correspond to the calendar year during which the period of production falls; or
- **(b)** if the period of production of a model of engine includes January 1 of a calendar year, correspond to that calendar year.

Limitation

(2) The period of production must not include more than one January 1.

Imported engines

(3) If an engine that is imported does not bear the engine’s date of manufacture, its model year corresponds to the calendar year during which it is imported.

Prescribed Engines

Section 149 of Act — definition *engine*

5 (1) Mobile or stationary compression-ignition engines or mobile large spark-ignition engines — including those that have a complete fuel system — are prescribed for the purposes of the definition *engine* in section 149 of the Act unless they

- **(a)** are regulated under the *On-Road Vehicle and Engine Emission Regulations*;
- **(b)** are or will be installed in a vehicle that is regulated under the *On-Road Vehicle and Engine Emission Regulations* and are intended to propel such a vehicle;
- **(c)** are or will be installed in an *auxiliary power unit*, as defined in subsection 1(1) of the *On-Road Vehicle and Engine Emission Regulations*, that is or will be installed in a tractor that is regulated under those Regulations;
- **(d)** are regulated under the *Marine Spark-ignition Engine, Vessel and Off-road Recreational Vehicle Emission Regulations*;
- **(e)** are or will be installed in a vehicle that is regulated under the *Marine Spark-ignition Engine, Vessel and Off-road Recreational Vehicle Emission Regulations* and are intended to propel such a vehicle;
- **(f)** are designed exclusively for competition and
- **(i)** have performance characteristics that are substantially superior to non-competitive engines,
- **(ii)** are not displayed for sale in any public dealership or otherwise offered for sale to the general public, and
- **(iii)** bear a label that meets the requirements set out in section 34 and
- **(A)** sets out the statement “COMPETITION ENGINE / MOTEUR DE COMPÉTITION”, or
- **(B)** meets the requirements set out in section 620, subpart G, of CFR 1039 or, in accordance with section 630, subpart G, of CFR 1048, section 620, subpart G, of CFR 1054, as the case may be;
- **(g)** are designed to be used exclusively in a military machine that is designed for use in combat or combat support during military activities only, including reconnaissance missions, rescue missions and training missions, and bear
- **(i)** a label to that effect that meets the requirements set out in section 34 and sets out the statement “THIS ENGINE IS DESIGNED TO BE USED EXCLUSIVELY IN MILITARY MACHINES DESIGNED EXCLUSIVELY FOR USE IN COMBAT OR COMBAT SUPPORT DURING MILITARY ACTIVITIES / CE MOTEUR EST CONÇU POUR ÊTRE UTILISÉ EXCLUSIVEMENT DANS DES MACHINES MILITAIRES CONÇUES EXCLUSIVEMENT POUR ÊTRE UTILISÉES DANS LE CADRE D’OPÉRATIONS MILITAIRES DE COMBAT OU D’APPUI TACTIQUE”, or
- **(ii)** the United States emission control information label referred to in section 225(e), subpart C, of CFR 1068;
- **(h)** are to be exported, will not be used or sold for use in Canada and bear a label that meets the requirements set out in section 34 and sets out the statement “FOR EXPORT, NOT FOR USE OR SALE FOR USE IN CANADA / POUR EXPORTATION, NE DOIT PAS ÊTRE UTILISÉ AU CANADA NI VENDU POUR ÊTRE UTILISÉ AU CANADA”;
- **(i)** are regulated under the *Multi-Sector Air Pollutants Regulations* and bear a label that meets the requirements set out in section 34 and sets out the statement “THIS ENGINE IS REGULATED UNDER THE *Multi-Sector Air Pollutants Regulations* AND WILL BE USED IN A FACILITY LISTED IN SUBSECTION 46(4) OF THOSE REGULATIONS / CE MOTEUR EST RÉGLEMENTÉ PAR LE *Règlement multisectoriel sur les polluants atmosphériques* ET SERA UTILISÉ DANS UNE INSTALLATION ÉNUMÉRÉE AU PARAGRAPHE 46(4) DE CE RÈGLEMENT”;
- **(j)** have a maximum displacement of 1 000 cm^3 and a maximum engine power of 30 kW and meet the requirements that are applicable under the *Off-Road Small Spark-Ignition Engine Emission Regulations* to an engine of the same model year that is designed to be used in a non-handheld machine; and
- **(k)** are compression-ignition engines and
- **(i)** have a per-cylinder displacement of less than 50 cm^3,
- **(ii)** are designed to be used in underground mines, but may also be used above ground at those mines, and are certified by
- **(A)** the Canada Centre for Mineral and Energy Technology, or
- **(B)** the Mine Safety and Health Administration of the United States in accordance with Title 30, chapter I, subchapter B, part 7, subpart E of the *Code of Federal Regulations* of the United States or Title 30, chapter I, subchapter B, part 36, of the *Code of Federal Regulations* of the United States,
- **(iii)** are designed to be installed in a vessel that has an integrated fuel, cooling or exhaust system, or
- **(iv)** are stationary, have a per-cylinder displacement of 30 L or more and bear
- **(A)** a label that meets the requirements set out in section 34 and sets out the statement “STATIONARY ENGINE WITH A DISPLACEMENT OF 30 L/CYLINDER OR MORE; NOT SUBJECT TO EMISSIONS STANDARDS UNDER THE CANADIAN REGULATIONS ENTITLED *Off-road Compression-Ignition (Mobile and Stationary) and Large Spark-Ignition Engine Emission Regulations* / MOTEUR FIXE AYANT UNE CYLINDRÉE DE 30 L OU PLUS; NON ASSUJETTI AUX

NORMES D'ÉMISSIONS PRÉVUES PAR LE RÈGLEMENT CANADIEN INTITULÉ *Règlement sur les émissions des moteurs hors route à allumage par compression (mobiles et fixes) et des gros moteurs hors route à allumage commandé*", or

- **(B)** the applicable United States emission control information label referred to in section 4210, subpart IIII, of CFR 60.

Section 152 of Act

(2) For the purposes of section 152 of the Act, the prescribed engines are those referred to in subsection (1) that are manufactured in Canada other than

- **(a)** engines that
- **(i)** are covered by an EPA certificate,
- **(ii)** are sold concurrently in Canada and the United States, and
- **(iii)** had their manufacture completed in Canada by the addition of
- **(A)** an emission control system for exhaust emissions, or part of such a system, in a manner that conforms to the certificate and the certificate holder's installation instructions, or
- **(B)** a complete fuel system, or part of such a system, in a manner that conforms to the certificate and the certificate holder's installation instructions; and
- **(b)** engines that are to be used in Canada solely for purposes of exhibition, demonstration, evaluation or testing.

Section 154 of Act

(3) The classes of engines that are prescribed for the purposes of section 154 of the Act are those that are prescribed under subsection (1).

Engine Standards

General Standards

Evaporative emission standards — application

6 The evaporative emission standards referred to in these Regulations apply in respect of engines that have a complete fuel system with non-metallic fuel lines or fuel tanks and that are fuelled with volatile liquid fuels.

Emission control system — requirements

7 (1) An emission control system that is installed on an engine to enable it to conform to the standards set out in these Regulations must not

- **(a)** in its operation, release a substance that causes air pollution and that would not have been released if the system had not been installed; or
- **(b)** in its operation or malfunction, make the engine or the machine in which the engine is installed unsafe, or endanger persons or property near the engine or machine.

Defeat device

(2) An engine must not be equipped with an auxiliary emission control device that reduces the effectiveness of the emission control system under conditions that may reasonably be expected to be encountered under normal operation of the engine unless

- **(a)** the conditions that may reasonably be expected to be encountered under normal operation of the engine are substantially included in the test procedures referred to in subsection 1(4);
- **(b)** the auxiliary emission control device is needed to protect the engine against damage or accident;
- **(c)** the auxiliary emission control device is only used to start the engine;
- **(d)** the auxiliary emission control device is installed in a compression-ignition engine that is designed to power an emergency machine and is activated during emergency response operations to maintain speed, torque or power in either of the following circumstances:
- **(i)** the emission control system is in an abnormal state, or
- **(ii)** the device acts to maintain the emission control system in a normal state; or
- **(e)** the auxiliary emission control device is installed in a compression-ignition engine other than one referred to in paragraph

(d) and the following criteria are met:

- **(i)** the auxiliary emission control device
- **(A)** is designed to prevent the operation of the emission control system only to the extent necessary to allow the engine to meet the demands of an emergency situation,
- **(B)** is accompanied by a notice in writing discouraging improper use of the auxiliary emission control device,
- **(C)** is designed so that it can only operate for a maximum of 120 hours in total before it has to be reset,
- **(D)** is designed so that it can only be reset to reestablish the time limit referred to in clause (C) by the input of a temporary code, the reconfiguration of the engine's electronic control module or the use of another secure feature that is unique to each engine, and
- **(E)** is designed so that its operation can be manually stopped, and
- **(ii)** the engine on which the auxiliary emission control device is installed is designed to electronically record the number of times the auxiliary emission control device is used.

Emission standards

(3) Subject to subsection 11(2), a compression-ignition engine that is equipped with an auxiliary emission control device referred to in subsection (2) that meets the requirements set out in paragraph (2)(d) or (e) is not required to conform to the emission standards referred to in sections 10 to 17 when the auxiliary emission control device is operating.

Adjustable parameters — requirements

8 (1) Engines equipped with adjustable parameters must conform to the applicable standards under these Regulations for any specification within the physically adjustable range.

Engines using non-commercial fuel

(2) Subsection (1) does not apply to an engine that is designed to operate using fuel that is not generally offered for sale in Canada if the engine is adjusted in accordance with the manufacturer's instructions referred to in subsection 36(2) and conforms to the applicable standards under these Regulations for those specifications.

Alternative test procedures

9 (1) Despite subsection 1(4), a company may, instead of using the test procedures set out in CFR 60 in respect of their stationary compression-ignition engines, replace one or more of those test procedures with alternative test procedures that are equivalent to or more stringent than those test procedures.

Published test procedures

(2) The alternative test procedures referred to in subsection (1) must be included in a test procedure published by

- **(a)** the government of a state or of a political subdivision of a state, or an institution of a state or of a political subdivision of a state;
- **(b)** an international organization of states or an international organization that is established by the governments of states, or an institution of any of those international organizations; or
- **(c)** an organization that develops test procedures based on consensus and that is internationally recognized as being competent to establish those test procedures.

Equivalence

(3) For the purposes of subsection (1), the equivalency of test procedures is determined by the Minister on the basis of the evidence of conformity submitted by the company.

Compression-Ignition Engine Standards

Emission Standards

Emission standards — mobile engines

10 (1) Subject to sections 12 to 15 and 22 and 23, a mobile compression-ignition engine must conform to

- **(a)** the exhaust emission standards set out in sections 101(a) to (c) and (e) and (f), subpart B, of CFR 1039;
- **(b)** the crankcase emission standards set out in section 115(a), subpart B, of CFR 1039;

- **(c)** the smoke emission standards set out in section 105, subpart B, of CFR 1039; and
- **(d)** the evaporative emission standards set out in sections 105(a), (c) and (d), subpart B, of CFR 1048 for large spark-ignition engines.

Useful life

(2) The standards referred to in subsection (1) apply for the useful life of the engine, as specified

- **(a)** in the case of the standards referred to in paragraphs (1)(a) to (c), in section 101(g), subpart B, of CFR 1039; and
- **(b)** in the case of the standards referred to in paragraph (1)(d), in section 105, subpart B, of CFR 1048.

Emission standards — stationary engines

11 (1) Subject to sections 15, 16 and 23, a stationary compression-ignition engine must conform to the emission standards set out in sections 4201(a), (c) and (e)(2), subpart IIII, of CFR 60.

Auxiliary emission control device

(2) An engine referred to in subsection (1) that is equipped with an auxiliary emission control device referred to in subsection 7(2) that meets the requirements set out in paragraph 7(2)(d) or (e) must conform to the emission standards set out in section 4210(j), subpart IIII, of CFR 60 when the auxiliary emission control device is operating.

Useful life

(3) The standards referred to in subsection (1) apply for the useful life of the engine referred to in section 104(a), subpart B, of CFR 89, section 9, subpart A, of CFR 94, section 101(g), subpart B, of CFR 1039 or section 101(e), subpart B, of CFR 1042, as specified in sections 4210(a) to (c), subpart IIII, of CFR 60.

Alternative Emission Standards for Certain Types of Engines

Mobile engines used in remote locations

12 (1) A mobile compression-ignition engine that is to be used exclusively to provide a primary source of electrical power in a remote location may, if it bears a label to that effect, instead of conforming to the emission standards set out in section 10, conform to

- **(a)** in the case of an engine that is being imported and that is of the 2007 model year or an earlier model year, the emission standards set out in Table 1 to section 112(a), subpart B, of CFR 89; or
- **(b)** in the case of an engine that is being imported and that is of the 2008 model year or a later model year or an engine that is manufactured in Canada, the emission standards set out in,
- **(i)** for engines that have a gross power of less than 37 kW, Table 2, subpart IIII, of CFR 60, and
- **(ii)** for engines that have a gross power of 37 kW or more, Table 1 to section 112(a), subpart B, of CFR 89.

Useful life

(2) The standards referred to in subsection (1) apply for the useful life of the engine referred to in section 104(a), subpart B, of CFR 89.

North Warning System sites

13 (1) A mobile compression-ignition engine that is to be used exclusively at a North Warning System site established by the North American Aerospace Defense Command may, if it bears a label to that effect, instead of conforming to the emission standards set out in section 10, conform to the emission standards set out in Table 1 to section 112(a), subpart B, of CFR 89.

Useful life

(2) The standards referred to in subsection (1) apply for the useful life of the engine referred to in section 104(a), subpart B, of CFR 89.

Transportation refrigeration unit

14 (1) A mobile compression-ignition engine that is used in a transportation refrigeration unit may, instead of conforming to the emission standards referred to in section 10, conform to the applicable standards referred to in sections 645(a), (b) and (e), subpart G, of CFR 1039, as specified in those sections.

Useful life

(2) The standards referred to in subsection (1) apply for the useful life of the engine as specified in section 101(g), subpart B, of CFR 1039.

Engines for use in hazardous location

15 (1) A compression-ignition engine that is or will be installed in a machine to be used only in a hazardous location where the maximum permissible surface temperature for the machine is 200°C or less may, if the engine or the machine bears the markings referred to in rule 18-052 of the most recent version of the Canadian Standards Association standard C22.1, *Canadian Electrical Code, Part 1*, conform to the following emission standards instead of those referred to in subsection 10(1) or 11(1), as applicable:

- **(a)** in the case of an engine that has a gross power of 19 kW or more but less than 37 kW, the applicable standards set out in Table 2 to section 102(b), subpart B, of CFR 1039; and
- **(b)** in the case of an engine that has a gross power of 37 kW or more, the applicable standards set out in Table 1 to section 112(a), subpart B, of CFR 89.

Useful life

(2) The standards referred to in subsection (1) apply for the useful life of the engine referred to in section 101(g), subpart B, of CFR 1039 or section 104(a), subpart B, of CFR 89, as the case may be.

Backup or emergency stationary engines

16 (1) A stationary compression-ignition engine that is intended to provide electrical power or mechanical work during a power outage may, instead of conforming to the emission standards referred to in subsection 11(1), conform to those set out in sections 4202(a)(1)(ii), (a)(2), (b)(2), (e)(2) and (4) and (f)(1) and (2), subpart IIII, of CFR 60.

Stationary fire-pump engines

(2) A stationary compression-ignition engine that is a fire-pump engine may, instead of conforming to the emission standards referred to in subsection 11(1), conform to those set out in section 4202(d), subpart IIII, of CFR 60.

Stationary engines used in remote locations

(3) A stationary compression-ignition engine that is to be used in a remote location may, if it bears a label to that effect, instead of conforming to the emission standards set out in subsection 11(1), conform to those set out in section 4201(f), subpart IIII, of CFR 60 or those set out in sections 4202(a)(1)(ii), (a)(2), (b)(2), (e)(2) and (4) and (f)(1) and (2), subpart IIII, of CFR 60.

Useful life

(4) The standards referred to in subsections (1) to (3) apply for the useful life of the engine referred to in subsection 11(3).

Diagnostic System Standards

Standards

17 A compression-ignition engine that is equipped with a selective catalytic reduction system that uses a reductant other than the engine's fuel must be equipped with a diagnostic system that conforms to the standards set out in,

- **(a)** in the case of mobile engines, section 110, subpart B, of CFR 1039; and
- **(b)** in the case of stationary engines, section 110, subpart B, of CFR 1039 or section 110, subpart B, of CFR 1042, as applicable.

Large Spark-Ignition Engine Standards

Emission Standards

Standards

18 (1) Subject to subsections (3) and (4) and sections 19, 22 and 23, a large spark-ignition engine must conform to

- **(a)** the exhaust emission standards set out in sections 101(a) to (c) and (e), subpart B, of CFR 1048;
- **(b)** the crankcase emission standards set out in section 115(a), subpart B, of CFR 1048; and
- **(c)** the evaporative emission standards set out in sections 105(a), (c) and (d), subpart B, of CFR 1048.

Demonstrating conformity

(2) For greater certainty, a company may demonstrate an engine's conformity to the evaporative emission standards referred to in paragraph (1)(c) as specified in section 245(e), subpart C, of CFR 1048.

Alternate exhaust emission standards

(3) An engine that meets the conditions set out in sections 101(d)(1) to (4), subpart B, of CFR 1048 may, instead of conforming to the exhaust emission standards set out in section 101(b)(2), subpart B, of CFR 1048, conform to the exhaust emission standards set out in section 101(d), subpart B, of CFR 1048.

"Blue Sky Series" emission standards

(4) An engine may, instead of conforming to the exhaust emission standards referred to in paragraph (1)(a), conform to the "Blue Sky Series" standards set out in section 140, subpart B, of CFR 1048.

Useful life

(5) The standards referred to in subsections (1), (3) and (4) apply for the useful life of the engine as specified in

- **(a)** section 101(g), subpart B, of CFR 1048, in the case of the standards referred to in paragraphs (1)(a) and (b) and subsections (3) and (4); or
- **(b)** section 105, subpart B, of CFR 1048, in the case of the standards referred to in paragraph (1)(c).

Alternate standards

19 A large spark-ignition engine that is fuelled solely by natural gas or liquefied petroleum gas and that has a maximum engine power of 250 kW or more may, instead of conforming to the standards referred to in sections 18, 20 and 21, conform to the standards referred to in sections 10 and 17, as if it were a compression-ignition engine.

Diagnostic and Torque Broadcasting System Standards

Diagnostic system

20 A large spark-ignition engine that is equipped with three-way catalysts and closed-loop control of air-fuel ratios must be equipped with a diagnostic system that conforms to the applicable standards set out in section 110, subpart B, of CFR 1048.

Torque broadcasting system

21 An electronically controlled large spark-ignition engine must be equipped with a torque broadcasting system that meets the requirements of section 115(b), subpart B, of CFR 1048.

On-Road Engines Adapted for Off-road Use

Alternate standards — engines

22 (1) A mobile compression-ignition engine or a large spark-ignition engine may, instead of conforming to the applicable standards referred to in sections 10, 12 to 15 and 17 to 21, conform to the applicable standards under the *On-Road Vehicle and Engine Emission Regulations* if

- **(a)** the engine was, before it became subject to these Regulations,
- **(i)** subject to the *On-Road Vehicle and Engine Emission Regulations*, and
- **(ii)** in conformity with the applicable standards under those Regulations; and
- **(b)** the engine was, before its sale to the first retail purchaser, altered in a manner that meets the requirements set out in section 605(d)(2), subpart G, of CFR 1039 or section 605(d)(2), subpart G, of CFR 1048, as the case may be.

Applicable standards

(2) For the purposes of subsection (1), the applicable standards under the *On-Road Vehicle and Engine Emission Regulations* are those that were applicable to the engine under those Regulations before its alteration.

Engines Covered by EPA Certificate

Certificate issued under certain parts of CFR

23 (1) Subject to subsection (2), an engine that is covered by an EPA certificate may, instead of conforming to the

applicable standards referred to in sections 10 to 22, conform to

- **(a)** in the case of an engine that has a complete fuel system and whose attached fuel lines and attached fuel tanks are covered by one or more EPA certificates, the standards referred to in each of the EPA certificates; and
- **(b)** in any other case, the standards referred to in the EPA certificate.

Certificate issued under CFR 86

(2) A mobile compression-ignition engine or a large spark-ignition engine that is covered by an EPA certificate issued under CFR 86 may, instead of conforming to the applicable standards referred to in sections 10, 12 to 15 and 17 to 21, conform to the standards referred to in the EPA certificate if the engine was, before importation or before its sale to the first retail purchaser, altered in a manner that meets the specific requirements set out in section 605(d)(2), subpart G, of CFR 1039 or section 605(d)(2), subpart G, of CFR 1048, as the case may be.

Subsection 153(3) of Act

24 (1) For the purposes of subsection 153(3) of the Act, the provisions of the CFR that are applicable under an EPA certificate to an engine referred to in subsection 23(1) or (2), or to any attached fuel lines or fuel tanks referred to in paragraph 23(1)(a), correspond to the standards referred to in sections 10 to 22.

EPA

(2) For the purposes of subsection 153(3) of the Act, the EPA is the prescribed agency.

Replacement Engines

Standards

25 (1) Despite sections 10 to 23 and subject to subsection (2), a replacement engine must, instead of conforming to the applicable standards referred to in those sections, conform to

- **(a)** if a replacement engine manufactured to the specifications of a model year subsequent to the model year of the original engine exists that has the physical or performance characteristics necessary for the operation of the machine,
- **(i)** the standards referred to in sections 10 to 23 or in paragraph 10(1)(a) or (b) of the *Off-Road Compression-Ignition Engine Emission Regulations*, as they read immediately before the coming into force of these Regulations, as the case may be, that are applicable to an engine manufactured to the specifications of the model year of the replacement engine, or a more stringent standard, or
- **(ii)** if none of the standards referred to in subparagraph (i) are applicable, the manufacturer's specifications in respect of the control of emissions; and
- **(b)** in any other case,
- **(i)** the standards referred to in sections 10 to 23 or in paragraph 10(1)(a) or (b) of the *Off-Road Compression-Ignition Engine Emission Regulations*, as they read immediately before the coming into force of these Regulations, as the case may be, that are applicable to the original engine, or a more stringent standard, or
- **(ii)** if none of the standards referred to in subparagraph (i) are applicable, the manufacturer's specifications in respect of the control of emissions.

Limitation

(2) An engine is a replacement engine only if it was manufactured to replace the engine of a machine that, on the day that the replacement engine is installed, had its manufacture completed

- **(a)** in the case of a mobile engine, 40 years ago or less; or
- **(b)** in the case of a stationary engine, less than 15 years ago.

National Emissions Mark and Label Requirements

Application for authorization

26 (1) A company that intends to apply a national emissions mark to an engine must make a request to the Minister for authorization to do so.

Required information

(2) The application must be signed by an authorized representative of the company and must include

- **(a)** the company's name and the street address of the company's head office and, if different, its mailing address;
- **(b)** the name, email address and telephone number of an authorized representative of the company;
- **(c)** the street address of the location at which the national emissions mark will be applied; and
- **(d)** information establishing that the company is capable of demonstrating that the engine conforms to the standards set out in these Regulations.

National emissions mark

27 (1) The national emissions mark is the mark set out in the schedule.

Dimensions

(2) The national emissions mark must be at least 7 mm in height and 10 mm in width.

Authorization number

(3) A company that is authorized to apply the national emissions mark must display the authorization number assigned by the Minister in figures that are at least 2 mm in height, immediately below or to the right of the national emissions mark.

Label — compression-ignition engines

28 (1) A compression-ignition engine — other than an engine that is covered by an EPA certificate, an engine that is used in a transportation refrigeration unit and that conforms to the alternative standards referred to in subsection 14(1) or a replacement engine — must bear a label that sets out

- **(a)** except in the case of a model of engine referred to in section 33, the statement "THIS ENGINE CONFORMS TO ALL APPLICABLE STANDARDS PRESCRIBED BY THE CANADIAN REGULATIONS ENTITLED *Off-road Compression-Ignition (Mobile and Stationary) and Large Spark-Ignition Engine Emission Regulations* IN EFFECT FOR MODEL YEAR [*insert model year*] / CE MOTEUR EST CONFORME AUX NORMES APPLICABLES PRÉVUES PAR LE RÈGLEMENT CANADIEN INTITULÉ *Règlement sur les émissions des moteurs hors route à allumage par compression (mobiles et fixes) et des gros moteurs hors route à allumage commandé* EN VIGUEUR POUR L'ANNÉE DE MODÈLE [*inscrire l'année de modèle*]";
- **(b)** the following statements, as applicable:
- **(i)** in the case of an engine that is to operate at a constant-speed only, "FOR USE AT CONSTANT-SPEED ONLY / POUR UTILISATION À VITESSE CONSTANTE SEULEMENT",
- **(ii)** in the case of an engine that has a gross power of more than 560 kW and meets the exhaust emission standards set out in Table 1 to section 101(b), subpart B, of CFR 1039, except those that are applicable to engines to be used in a generator set, "NOT FOR USE IN A GENERATOR SET / NE PAS UTILISER DANS UNE GÉNÉRATRICE",
- **(iii)** in the case of an engine referred to in paragraph 7(2)(d), "FOR USE IN EMERGENCY MACHINE ONLY / POUR UTILISATION DANS UNE MACHINE DE PREMIÈRE INTERVENTION SEULEMENT",
- **(iv)** in the case of an engine referred to in subsection 8(2), "THIS ENGINE IS DESIGNED TO OPERATE USING FUEL THAT IS NOT GENERALLY OFFERED FOR SALE IN CANADA. ENGINE PARAMETERS MUST BE ADJUSTED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS. / CE MOTEUR EST CONÇU POUR ÊTRE ALIMENTÉ AVEC UN CARBURANT QUI N'EST GÉNÉRALEMENT PAS MIS EN VENTE AU CANADA. LES PARAMÈTRES DU MOTEUR DOIVENT ÊTRE RÉGLÉS CONFORMÉMENT AUX INSTRUCTIONS DU FABRICANT.",
- **(v)** in the case of an engine that conforms to the emission standards referred to in section 11, "STATIONARY ENGINE / MOTEUR FIXE",
- **(vi)** in the case of an engine that conforms to the alternative emission standards referred to in section 12, "MOBILE ENGINE FOR USE IN REMOTE LOCATIONS ONLY / MOTEUR MOBILE POUR UTILISATION EN RÉGIONS ÉLOIGNÉES SEULEMENT",
- **(vii)** in the case of an engine that conforms to the alternative emission standards referred to in section 13, "MOBILE ENGINE FOR USE AT NORTH WARNING SYSTEM SITES ONLY / MOTEUR MOBILE POUR UTILISATION AUX SITES DU SYSTÈME D'ALERTE DU NORD SEULEMENT",
- **(viii)** in the case of an engine that conforms to the alternative emission standards referred to in subsection 15(1), "ENGINE FOR USE IN CLASS I HAZARDOUS LOCATIONS ONLY / MOTEUR POUR UTILISATION DANS DES EMPLACEMENTS DANGEREUX DE CLASSE I SEULEMENT",
- **(ix)** in the case of an engine that conforms to the alternative emission standards referred to in subsection 16(1),

"STATIONARY ENGINE FOR USE AS BACKUP OR EMERGENCY ENGINE / MOTEUR FIXE POUR UTILISATION COMME MOTEUR DE RÉSERVE OU D'URGENCE",

- **(x)** in the case of an engine that conforms to the alternative emission standards referred to in subsection 16(2), "STATIONARY ENGINE FOR USE AS A FIRE PUMP ENGINE ONLY / MOTEUR FIXE POUR UTILISATION COMME MOTEUR DE POMPE À INCENDIE SEULEMENT",
- **(xi)** in the case of an engine that conforms to the alternative emission standards referred to in subsection 16(3), "STATIONARY ENGINE FOR USE IN REMOTE LOCATIONS / MOTEUR FIXE POUR UTILISATION EN RÉGIONS ÉLOIGNÉES", and
- **(xii)** in the case of an engine that conforms to the alternative emission standards referred to in subsection 22(1), "ADAPTED FOR OFF-ROAD USE WITHOUT AFFECTING EMISSION CONTROLS / MODIFIÉ POUR USAGE HORS ROUTE SANS NUIRE AU CONTRÔLE DES ÉMISSIONS";
- **(c)** the model year of the engine;
- **(d)** the month and the four-digit year of manufacture of the engine, expressed as numbers separated by a non-numeric character or space, unless this information is permanently identified elsewhere on the engine;
- **(e)** the gross power or gross power category of the engine;
- **(f)** if the engine is installed in an off-road recreational vehicle, the numerical value of the exhaust emission standards to which it conforms and the applicable units of measure;
- **(g)** an identification of the emission control system, as specified in section 45(f), subpart A, of CFR 1068;
- **(h)** the name and trademark of the engine manufacturer or, if the manufacturer is authorized by another business entity to use that business entity's name and trademark, that name and trademark;
- **(i)** the engine's emission family; and
- **(j)** the engine displacement.

Label — complete fuel system

(2) Subject to subsection 34(4), a compression-ignition engine that has a complete fuel system — other than an engine that is covered by an EPA certificate, an engine that is used in a transportation refrigeration unit and that conforms to the alternative standards referred to in subsection 14(1) or a replacement engine — must bear a label that includes the following information, in addition to the information set out in subsection (1):

- **(a)** except in the case of a model of engine referred to in section 33, the statement "THIS ENGINE AND THE COMPLETE FUEL SYSTEM CONFORM TO ALL APPLICABLE STANDARDS PRESCRIBED BY THE CANADIAN REGULATIONS ENTITLED *Off-road Compression-Ignition (Mobile and Stationary) and Large Spark-Ignition Engine Emission Regulations* IN EFFECT FOR MODEL YEAR [*insert model year*] / CE MOTEUR ET LE SYSTÈME COMPLET D'ALIMENTATION EN CARBURANT SONT CONFORMES AUX NORMES APPLICABLES PRÉVUES PAR LE RÈGLEMENT CANADIEN INTITULÉ *Règlement sur les émissions des moteurs hors route à allumage par compression (mobiles et fixes) et des gros moteurs hors route à allumage commandé* EN VIGUEUR POUR L'ANNÉE DE MODÈLE [*inscrire l'année de modèle*]";
- **(b)** the name of the company that installed the complete fuel system; and
- **(c)** the emission family in respect of evaporative emissions.

Non-application

(3) Paragraphs (1)(a) and (2)(a) and (b) do not apply if a national emissions mark is affixed to the engine or to the machine in which the engine is installed.

Insufficient space on label

(4) Paragraph (1)(g) does not apply if there is insufficient space on the label to accommodate the information referred to in that paragraph and that information is included in the emissions-related maintenance instructions.

Label — large spark-ignition engines

29 (1) A large spark-ignition engine — other than an engine that is covered by an EPA certificate or a replacement engine — must bear a label that sets out

- **(a)** except in the case of a model of engine referred to in section 33, the statement "THIS ENGINE CONFORMS TO ALL APPLICABLE STANDARDS PRESCRIBED BY THE CANADIAN REGULATIONS ENTITLED *Off-road Compression-*

Ignition (Mobile and Stationary) and Large Spark-Ignition Engine Emission Regulations IN EFFECT FOR MODEL YEAR [*insert model year*] / CE MOTEUR EST CONFORME AUX NORMES APPLICABLES PRÉVUES PAR LE RÈGLEMENT CANADIEN INTITULÉ *Règlement sur les émissions des moteurs hors route à allumage par compression (mobiles et fixes) et des gros moteurs hors route à allumage commandé* EN VIGUEUR POUR L'ANNÉE DE MODÈLE [*inscrire l'année de modèle*]";

- **(b)** the following statements, as applicable:
- **(i)** in the case of an engine that is intended for use in constant-speed applications only, "USE IN CONSTANT-SPEED APPLICATIONS ONLY / UTILISEZ SEULEMENT DANS DES APPLICATIONS À VITESSE CONSTANTE",
- **(ii)** in the case of an engine that is intended for use in variable-speed applications only, "USE IN VARIABLE-SPEED APPLICATIONS ONLY / UTILISEZ SEULEMENT DANS DES APPLICATIONS À VITESSE VARIABLE",
- **(iii)** in the case of an engine that is intended for use in high-load applications only, "THIS ENGINE IS NOT INTENDED FOR OPERATION AT LESS THAN 75% OF FULL LOAD / CE MOTEUR N'EST PAS DESTINÉ À FONCTIONNER À MOINS DE 75 % DE SA CAPACITÉ MAXIMALE",
- **(iv)** in the case of an engine referred to in subsection 8(2), "THIS ENGINE IS DESIGNED TO OPERATE USING FUEL THAT IS NOT GENERALLY OFFERED FOR SALE IN CANADA. ENGINE PARAMETERS MUST BE ADJUSTED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS. / CE MOTEUR EST CONÇU POUR ÊTRE ALIMENTÉ AVEC UN CARBURANT QUI N'EST GÉNÉRALEMENT PAS MIS EN VENTE AU CANADA. LES PARAMÈTRES DU MOTEUR DOIVENT ÊTRE RÉGLÉS CONFORMÉMENT AUX INSTRUCTIONS DU FABRICANT.",
- **(v)** in the case of an engine referred to in subsection 18(3) that conforms to the alternate exhaust emission standards referred to in that subsection and that is not intended for use in high-load applications, "THIS ENGINE IS NOT INTENDED FOR OPERATION AT MORE THAN [*insert percentage of full load based on the nature of the engine protection*] OF FULL LOAD / CE MOTEUR N'EST PAS DESTINÉ À FONCTIONNER À PLUS DE [*inscrire le pourcentage de sa capacité maximale selon la nature de la protection du moteur*] DE SA CAPACITÉ MAXIMALE",
- **(vi)** in the case of an engine that conforms to the "Blue Sky Series" standards referred to in subsection 18(4), "BLUE SKY SERIES", and
- **(vii)** in the case of an engine that conforms to the alternative emission standards referred to in subsection 22(1), "ADAPTED FOR OFF-ROAD USE WITHOUT AFFECTING EMISSION CONTROLS / MODIFIÉ POUR USAGE HORS ROUTE SANS EFFET SUR LE CONTRÔLE DES ÉMISSIONS";
- **(c)** the model year of the engine;
- **(d)** the month and the four-digit year of manufacture of the engine, expressed as numbers separated by a non-numeric character or space, unless this information is permanently identified elsewhere on the engine;
- **(e)** the numerical value of the exhaust emission standards to which it complies and the applicable units of measure;
- **(f)** an identification of the emission control system, using terms and abbreviations as specified in section 45(f), subpart A, of CFR 1068;
- **(g)** an identification of any requirements for fuel and lubricants;
- **(h)** the engine accessories that must be operating and the proper transmission gear during engine maintenance;
- **(i)** the name and trademark of the engine manufacturer or, if the manufacturer is authorized by another business entity to use that business entity's name and trademark, that name and trademark;
- **(j)** the engine's emission family; and
- **(k)** the engine displacement.

Label — complete fuel system

(2) Subject to subsection 34(4), a large spark-ignition engine that has a complete fuel system — other than an engine that is covered by an EPA certificate or a replacement engine — must bear a label that includes the following information, in addition to the information set out in subsection (1):

- **(a)** except in the case of a model of engine referred to in section 33, the statement "THIS ENGINE AND THE COMPLETE FUEL SYSTEM CONFORM TO ALL APPLICABLE STANDARDS PRESCRIBED BY THE CANADIAN REGULATIONS ENTITLED *Off-road Compression-Ignition (Mobile and Stationary) and Large Spark-Ignition Engine Emission Regulations* IN EFFECT FOR MODEL YEAR [*insert model year*] / CE MOTEUR ET LE SYSTÈME COMPLET D'ALIMENTATION EN CARBURANT SONT CONFORMES AUX NORMES APPLICABLES PRÉVUES PAR LE RÈGLEMENT CANADIEN

INTITULÉ *Règlement sur les émissions des moteurs hors route à allumage par compression (mobiles et fixes) et des gros moteurs hors route à allumage commandé* EN VIGUEUR POUR L'ANNÉE DE MODÈLE [*inscrire l'année de modèle*]";

- **(b)** the name of the company that installed the complete fuel system; and
- **(c)** the emission family in respect of evaporative emissions.

National emissions mark

(3) Paragraphs (1)(a) and (2)(a) and (b) do not apply if a national emissions mark is affixed to the engine or to the machine in which the engine is installed.

Insufficient space on label

(4) Paragraph (1)(f), (g) or (h) does not apply if there is insufficient space on the label to accommodate the information referred to in one of those paragraphs and that information is included in the emissions-related maintenance instructions.

Label — transportation refrigeration unit

30 An engine that conforms to the alternative standards referred to in subsection 14(1) must bear either a label

- **(a)** that sets out
- **(i)** the statement "ENGINE TO BE USED IN A TRANSPORTATION REFRIGERATION UNIT ONLY / MOTEUR À UTILISER SEULEMENT DANS UN DISPOSITIF FRIGORIFIQUE DE TRANSPORT",
- **(ii)** the model year of the engine,
- **(iii)** the month and the four-digit year of manufacture of the engine, expressed as numbers separated by a non-numeric character or space, unless this information is permanently identified elsewhere on the engine,
- **(iv)** the gross power or gross power category of the engine,
- **(v)** an identification of the emission control system, and
- **(vi)** the name of the engine manufacturer; or
- **(b)** that meets the requirement set out in section 645(d)(1), subpart G, of CFR 1039.

Label — replacement engine

31 A replacement engine must bear a label that

- **(a)** sets out the following information:
- **(i)** in the case of a mobile engine, the statement "FOR USE AS A REPLACEMENT ENGINE ONLY — NOT FOR INSTALLATION IN A MACHINE THAT IS MORE THAN 40 YEARS OLD / POUR UTILISATION COMME MOTEUR DE REMPLACEMENT SEULEMENT — NE PEUT ÊTRE INSTALLÉ DANS UNE MACHINE DE PLUS DE 40 ANS",
- **(ii)** in the case of a stationary engine, the statement "FOR USE AS A REPLACEMENT ENGINE ONLY — NOT FOR INSTALLATION IN A MACHINE THAT IS MORE THAN 15 YEARS OLD / POUR UTILISATION COMME MOTEUR DE REMPLACEMENT SEULEMENT — NE PEUT ÊTRE INSTALLÉ DANS UNE MACHINE DE PLUS DE 15 ANS",
- **(iii)** if the engine conforms to the standards referred to in subparagraph 25(1)(a)(i) or (b)(i), the statement "TO REPLACE AN ENGINE THAT IS SUBJECT TO EMISSION STANDARDS FOR [*insert the model year(s) or "tier(s)", within the meaning of the CFR, of the engines that may be replaced*] ENGINES ONLY / POUR REMPLACEMENT D'UN MOTEUR QUI EST ASSUJETTI AUX NORMES D'ÉMISSIONS POUR LES MOTEURS DE [*inscrire l'année ou les années de modèle ou le « tier » ou les « tiers », au sens du CFR, des moteurs qui peuvent être remplacés*] SEULEMENT",
- **(iv)** the model year of the engine,
- **(v)** the month and the four-digit year of manufacture of the engine, expressed as numbers separated by a non-numeric character or space, unless this information is permanently identified elsewhere on the engine,
- **(vi)** the numerical value of the exhaust emission standards to which it conforms, if any, and the applicable units of measure,
- **(vii)** in the case of a compression-ignition engine, the gross power or gross power category of the engine,
- **(viii)** an identification of the emission control system, and
- **(ix)** the name of the engine manufacturer; or
- **(b)** meets the requirements set out in section 240(b)(5), subpart C, of CFR 1068.

United States emission control information label

32 An engine that is covered by an EPA certificate and that, as authorized by subsection 23(1) or (2), conforms to the standards referred to in the EPA certificate instead of the applicable standards referred to in sections 10 to 21, must bear a United States emission control information label that meets the requirements set out in the following provisions:

- **(a)** if the engine is a mobile compression-ignition engine,
- **(i)** in the case of an engine that is covered by an EPA certificate issued under CFR 1039, sections 135(b) to (g), subpart B, of CFR 1039, and,
- **(A)** if the engine is equipped with adjustable parameters, section 615(b)(2), subpart G, of CFR 1039, and
- **(B)** if the engine is used in a transportation refrigeration unit, section 645(d)(1), subpart G, of CFR 1039, or
- **(ii)** in the case of an engine that is covered by an EPA certificate issued under CFR 86, section 35, subpart A, of CFR 86 and section 605(d)(5), subpart G, of CFR 1039;
- **(b)** if the engine is a stationary compression-ignition engine that is covered by an EPA certificate issued under CFR 89, CFR 94, CFR 1039 or CFR 1042, section 4210(c), subpart IIII, of CFR 60 and, as applicable,
- **(i)** section 110, subpart B, of CFR 89,
- **(ii)** section 212, subpart C, of CFR 94,
- **(iii)** sections 135(b) to (g), subpart B, of CFR 1039 and, if the engine is equipped with adjustable parameters, section 615(b)(2), subpart G, of CFR 1039, or
- **(iv)** sections 135(b) to (g), subpart B, of CFR 1042;
- **(c)** if the engine is a large spark-ignition engine,
- **(i)** in the case of an engine that is covered by an EPA certificate issued under CFR 1048, sections 135(b) to (f), subpart B, of CFR 1048 and, if the engine is equipped with adjustable parameters, section 625(b)(2), subpart G, of CFR 1048, or
- **(ii)** in the case of an engine that is covered by an EPA certificate issued under CFR 86, section 35, subpart A, of CFR 86 and section 605(d)(5), subpart G, of CFR 1048; and
- **(d)** if the engine is equipped with a complete fuel system whose attached fuel line and attached fuel tank are covered by one or more EPA certificates issued under CFR 1060, sections 135(a) to (e), subpart B, of CFR 1060.

Label — exemption under section 156 of Act

33 In the case of a model of engine in respect of which the Governor in Council has, by order, granted an exemption under section 156 of the Act, the engine must bear a label that sets out, in both official languages, the standard in respect of which the exemption has been granted, as well as the Privy Council number and date of the order.

Location — national emissions mark and label

34 (1) Subject to subsection (3), the national emissions mark and any label required by these Regulations, other than a label referred to in section 35 and a United States emission control information label, must be located on the engine

- **(a)** in the case of an engine that bears a United States emission control information label, immediately next to that label; or
- **(b)** in the case of an engine that does not bear a United States emission control information label, in a visible location, whether the engine is installed in a machine or not.

United States emission control information label

(2) In the case referred to in paragraph (1)(a), the national emissions mark and the information required to be included on any label required by these Regulations may be included on the United States emission control information label, instead of appearing as specified in paragraph (1)(a).

Choice of location

(3) The information referred to in subsection 28(2) or 29(2), as the case may be, may appear on the same label as the information referred to in subsection 28(1) or 29(1), as the case may be, or on a separate label that is placed immediately next to the label on which the information referred to in subsection 28(1) or 29(1) appears, as the case may be.

Engine installed in machine

(4) If an engine referred to in subsection 28(2) or 29(2) is installed in a machine and the label referred to in that subsection is no longer visible during routine engine maintenance once the engine is installed in the machine, a duplicate of the label must be affixed on the machine.

Other requirements

(5) The national emissions mark and any label required by these Regulations, other than a United States emission control information label, must

- **(a)** be permanently applied so that any attempt to alter or remove it would damage it;
- **(b)** be resistant to or protected against any weather condition; and
- **(c)** bear inscriptions that are legible and indelible and that are indented, embossed or in a colour that contrasts with the label's background.

Unique Identification Number

Unique identification number

35 For the purposes of paragraph 153(1)(d) of the Act, a unique identification number must be affixed to every engine. It must be legible and be on a label or be engraved on, stamped on or moulded into the engine.

Instructions

Engine maintenance

36 (1) Every company must ensure that the first retail purchaser of every engine, including an engine that is installed in a machine, is provided with written instructions respecting emission-related maintenance and that the instructions are consistent with the instructions set out in

- **(a)** in the case of a mobile compression-ignition engine, section 109(a), subpart B, of CFR 89 or sections 125(a) to (d) and (f), subpart B, of CFR 1039, as the case may be;
- **(b)** in the case of a stationary compression-ignition engine, section 109(a), subpart B, of CFR 89, section 211, subpart C, of CFR 94, sections 125(a) to (d) and (f), subpart B, of CFR 1039 or sections 125(a) to (d) and (f), subpart B, of CFR 1042, as the case may be; and
- **(c)** in the case of a large spark-ignition engine, sections 125(a) to (d) and (f), subpart B, of CFR 1048.

Engines using non-commercial fuel

(2) Every company must ensure that the first retail purchaser of every engine — other than an engine referred to in subsection 40(1) — that is designed to operate using fuel that is not generally offered for sale in Canada is provided with written instructions describing how the engine's adjustable parameters are to be adjusted so that the engine conforms to the emission standards prescribed under these Regulations while the engine is operating on fuel that is not generally offered for sale in Canada.

Language

(3) The instructions must be provided in English, French or both official languages, as requested by the purchaser.

Instructions — replacement engines

37 Every company that imports or manufactures a replacement engine for which the manufacture may be completed to achieve different configurations must ensure that the engine is accompanied by written instructions for completing the manufacture of the engine to achieve those configurations and for determining the configurations that are appropriate for an engine that will be used in a given application.

Instructions — installation of emission control system

38 (1) Every company must ensure that every engine that is to be installed in or on a machine in Canada is accompanied by written instructions for installing the engine and emission control system, or the address of the place or the website where those instructions may be obtained.

Required information

(2) The instructions must contain the following information:

- **(a)** detailed installation procedures for the engine, the emission control system and any of their components; and
- **(b)** the limits on the types of use for the engine to ensure that the emission standards are conformed to and, in the case of a compression-ignition engine that is used in a transportation refrigeration unit, the information referred to in section 645(d)(2), subpart G, of CFR 1039.

Language

(3) The instructions must be provided in English, French or both official languages, as requested by the installer.

Auxiliary emission control device

39 (1) Every company must ensure that every engine that is equipped with an auxiliary emission control device described in paragraph 7(2)(e) is accompanied by written instructions for its use and how to request its reset.

Language

(2) The instructions must be provided in both official languages.

Evidence of Conformity

Engine covered by EPA certificate

40 (1) For the purposes of paragraph 153(1)(b) of the Act, an engine that is covered by an EPA certificate and that, under subsection 23(1) or (2), conforms to the standards referred to in the EPA certificate instead of the applicable standards set out in sections 10 to 22, the evidence of conformity to be obtained and produced by a company includes

- **(a)** a copy of the EPA certificate covering the engine and, if they form part of the engine's complete fuel system, the attached fuel line or attached fuel tank;
- **(b)** a copy of the records submitted to the EPA in support of each application for an EPA certificate and any amended application in respect of an engine, fuel lines or fuel tanks that form part of a complete fuel system of an engine;
- **(c)** if the engine is sold concurrently in Canada and the United States, one or both of the following:
- **(i)** a document demonstrating that the engine is sold concurrently in Canada and the United States, or
- **(ii)** a document demonstrating that the engine bears the national emissions mark;
- **(d)** a copy of the United States emission control information label referred to in section 32; and
- **(e)** for the purpose of testing the engine for conformity with exhaust emission standards, all information required to reproduce the emissions tests that generated the results contained in the records referred to in paragraph (b).

Submission

(2) If the engine does not bear the national emissions mark and is not sold concurrently in Canada and the United States, the company must submit the evidence of conformity referred to in paragraphs (1)(a) to (d) to the Minister before importing the engine or applying a national emissions mark to it.

Engine conforming to standards in sections 10 to 22 or 25

41 (1) Subject to subsection (2) and for the purposes of paragraph 153(1)(b) of the Act, in the case of an engine that conforms to the applicable standards set out in sections 10 to 22 or a replacement engine, evidence of conformity must be obtained and produced by a company in a form and manner that is satisfactory to the Minister, and must include a copy of the label referred to in section 28 or 29, paragraph 30(a) or section 31, as the case may be.

Engine altered for off-road use

(2) For the purposes of paragraph 153(1)(b) of the Act, in the case of an engine referred to in section 22 that conforms to the emission standards that were applicable to it under the *On-Road Vehicle and Engine Emission Regulations* before its alteration, evidence of conformity must be obtained and produced by a company in a form and manner that is satisfactory to the Minister.

Submission

(3) A company must submit the evidence of conformity referred to in subsections (1) and (2) to the Minister as follows:

- **(a)** in the case of the evidence of conformity referred to in subsection (1), before importing the engine or applying a national emissions mark to it; and
- **(b)** in the case of the evidence of conformity referred to in subsection (2), before applying a national emissions mark to the engine or selling it.

Subsection 153(2) of Act

42 For greater certainty, a company that imports an engine or applies a national emissions mark to it in reliance on subsection 153(2) of the Act must submit the required evidence of conformity to the Minister before the engine leaves the

possession or control of the company.

Suspension or revocation of EPA certificate

43 If an EPA certificate referred to in subsection 40(1) is suspended or revoked, the company must submit the following information to the Minister within 60 days after the day on which the certificate is suspended or revoked:

- **(a)** the company's name, street address and, if different, mailing address;
- **(b)** the name, email address and telephone number of an authorized representative of the company;
- **(c)** a copy of the EPA certificate that was suspended or revoked;
- **(d)** a copy of the EPA decision to suspend or revoke the certificate; and
- **(e)** the make, model and model year of the engines that are covered by the EPA certificate.

Declarations

Declarations Prior to Importation

Declaration — company

44 (1) For the purposes of paragraph 153(1)(b) of the Act, a company that imports an engine must make a declaration that contains the following information:

- **(a)** the company's name, street address and, if different, mailing address;
- **(b)** the name, email address and telephone number of an authorized representative of the company;
- **(c)** the business number assigned to the company by the Minister of National Revenue; and
- **(d)** in respect of the engine,
- **(i)** its expected date of importation,
- **(ii)** its unique identification number, make, model and model year and the name of the engine manufacturer,
- **(iii)** if the engine is installed in a machine, the type of machine, the name of the machine manufacturer and the machine's make and model,
- **(iv)** any applicable emission families,
- **(v)** as applicable, a statement that the engine
- **(A)** is covered by an EPA certificate,
- **(B)** belongs to an emission family that includes engines that are sold concurrently in Canada and the United States,
- **(C)** bears the national emissions mark,
- **(D)** is equipped with an auxiliary emission control device described in paragraph 7(2)(e),
- **(E)** is an engine referred to in subsection 12(1), 13(1), 14(1), 15(1) or 16(1), (2) or (3), as the case may be, and conforms to the alternative standards referred to in that subsection,
- **(F)** is a replacement engine, and
- **(G)** is a compression-ignition engine that powers an emergency machine,
- **(vi)** as applicable, a statement that the company
- **(A)** is able to provide the required evidence of conformity, or
- **(B)** has provided the required evidence of conformity, and
- **(vii)** as applicable,
- **(A)** a statement that the required evidence of conformity is retained at a place of business of the company and, if that place of business is located at a place other than the street address referred to in paragraph (a), the street address of that place of business, or
- **(B)** a statement that the required evidence of conformity is retained at a location other than a place of business of the company and the name and telephone number of a contact person at that location and the street address and, if different, the mailing address of that location.

Submission

(2) The declaration must be signed by an authorized representative of the company and be submitted to the Minister before the engine is imported, unless a declaration containing the information referred to in paragraphs (1)(a) to (d) has been submitted to the Canada Border Services Agency using the electronic declaration system made available by the Agency.

50 engines or more

(3) Despite subsection (2), a company that imports 50 engines or more during a calendar year may make the declaration referred to in subsection (1) after importation but no later than March 31 of the calendar year following the calendar year during which the engines are imported if, before importing the first of those engines, the company submits a notice to the Minister that includes the following information:

- **(a)** the company's name, street address and, if different, mailing address;
- **(b)** the name, email address and telephone number of an authorized representative of the company;
- **(c)** the business number assigned to the company by the Minister of National Revenue; and
- **(d)** a statement that the company will import 50 engines or more during the calendar year.

One-time submission

(4) The notice referred to in subsection (3) is only required to be submitted in respect of the first calendar year during which the company imports engines in reliance on that subsection.

Replacement engines

(5) Subsection (3) does not apply in respect of replacement engines.

Declaration — person that is not a company

45 (1) For the purposes of paragraph 153(1)(b) of the Act, a person that imports an engine and that is not a company must make a declaration that contains the following information:

- **(a)** the person's name, email address, telephone number, street address and, if different, mailing address;
- **(b)** the name, email address and telephone number of an authorized representative of the person, if any;
- **(c)** the business number assigned to the person by the Minister of National Revenue, if any;
- **(d)** the engine's unique identification number, make, model and model year and the name of the engine manufacturer;
- **(e)** a statement indicating whether the engine is a compression-ignition engine or a large spark-ignition engine;
- **(f)** if the engine is installed in a machine, the type of machine, the name of the machine manufacturer and the machine's make and model; and
- **(g)** a statement that the engine bears
- **(i)** the national emission mark,
- **(ii)** the label referred to in subsection 28(1) or (2) or 29(1) or (2), paragraph 30(a) or 31(a) or section 33, as applicable,
- **(iii)** the United States emission control information label referred to in paragraph 30(b) or 31(b) or section 32, as applicable, or
- **(iv)** a label showing that the engine conformed to the emission standards of the California Air Resources Board that are in effect at the time its manufacture was completed.

Submission

(2) Subject to subsection (3), the declaration must be signed by the person or by their authorized representative and be submitted to the Minister before the engine is imported, unless a declaration containing the information referred to in paragraphs (1)(a) to (g) has been submitted to the Canada Border Services Agency using the electronic declaration system made available by the Agency.

Exception

(3) A declaration in respect of each of the first through ninth engines that a person imports during a calendar year may be submitted to the Minister before the person imports a tenth engine during that calendar year, instead of before the importation of each engine. If the person does not import a tenth engine, a declaration is not required in respect of the first through ninth engines.

Subsection 153(2) of Act

46 (1) A company may only import an engine in reliance on subsection 153(2) of the Act if

- **(a)** as the case may be,
- **(i)** the engine's manufacture will be completed in Canada,
- **(ii)** the company is authorized to apply the national emissions mark to the engine and will apply it after importation, or
- **(iii)** the engine is a replacement engine and the engine that it will replace will only be identified after importation; and
- **(b)** before importing the engine, the company makes a declaration to the Minister in accordance with subsection (2).

Content of declaration

(2) The declaration must be signed by an authorized representative of the company and contain the following information:

- **(a)** the company's name, street address and, if different, mailing address;
- **(b)** the name, email address and telephone number of an authorized representative of the company;
- **(c)** the business number assigned to the company by the Minister of National Revenue;
- **(d)** the number of engines that the company intends to import in reliance on subsection 153(2) of the Act, the name of the manufacturer and the unique identification number, make, model and model year of the engines, as well the applicable emission families;
- **(e)** in the case of any engines that are installed in a machine, the name of the machine manufacturer and the make, model and type of machine;
- **(f)** for each engine, a statement, as applicable, that
- **(i)** the engine's manufacture will be completed in Canada,
- **(ii)** the company is authorized to apply the national emissions mark to the engine and will apply it at the location specified in their application under section 26, or
- **(iii)** the engine is a replacement engine;
- **(g)** if the company makes the statement referred to in subparagraph (f)(i),
- **(i)** a statement from the manufacturer of the engine that the engine will, when completed in accordance with instructions provided by the manufacturer, conform to the requirements prescribed under these Regulations, and
- **(ii)** a statement from the company that the engine will be completed in accordance with the instructions referred to in subparagraph (i);
- **(h)** if the company makes the statement referred to in subparagraph (f)(ii),
- **(i)** the authorization number assigned to it by the Minister,
- **(ii)** the street address of the location where the engine will be kept until the national emissions mark is applied to it, and
- **(iii)** a description of the measures that will be taken to ensure that the engine does not leave the company's possession or control before the national emissions mark is applied to it; and
- **(i)** if the company makes the statement referred to in subparagraph (f)(iii),
- **(i)** the street address of the location where the engine will be kept until the evidence of conformity referred to in subsection 41(1) has been submitted, and
- **(ii)** a description of the measures that will be taken to ensure that the engine does not leave the company's possession or control before the evidence of conformity is submitted.

Paragraph 155(1)(a) of Act

47 (1) For the purposes of paragraph 155(1)(a) of the Act, the declaration to be made by a person importing an engine must contain

- **(a)** the person's name, email address, telephone number, street address and, if different, mailing address;
- **(b)** the name of the person's authorized representative, if any, and their email address and telephone number;
- **(c)** the business number assigned to the person by the Minister of National Revenue, if any;
- **(d)** a statement of whether the person intends to import compression-ignition engines, large spark-ignition engines or both;

- **(e)** a written statement that the engine will be used in Canada solely for purposes of exhibition, demonstration, evaluation or testing;
- **(f)** the date on which the engine will be imported;
- **(g)** the date by which the engine will be removed from Canada or destroyed;
- **(h)** the engine's unique identification number, make, model and model year and the name of the engine manufacturer; and
- **(i)** if the engine is installed in a machine, the type of machine, the name of the machine manufacturer and the machine's make and model.

Submission

(2) The declaration must be signed by the person or by their authorized representative and be submitted to the Minister before the engine is imported. However, in the case of a person that imports more than 50 engines during a calendar year, the declaration may be submitted quarterly.

Format of Declarations

Electronic submission

48 Any declaration required under these Regulations and any declaration required under paragraph 155(1)(a) of the Act must be submitted electronically in a format provided by the Minister, but the declaration must be submitted in writing if

- **(a)** no format has been provided; or
- **(b)** it is, owing to circumstances beyond the control of the person required to submit the declaration, impracticable to submit the declaration electronically in the format provided.

Maintenance, Retention and Submission of Records

Records to be maintained

49 (1) A company must maintain records, in writing or in a readily readable electronic or optical form, that contain the following information in relation to an engine:

- **(a)** the evidence of conformity referred to in section 40 or 41, as the case may be;
- **(b)** a copy of any declaration made under subsection 44(1) or paragraph 46(1)(b) and any notice submitted under subsection 44(3);
- **(c)** if the engine's unique identification number includes characters that provide information in respect of the engine's manufacture, the means by which to interpret those characters to obtain that information; and
- **(d)** a copy of any written instructions required under sections 36 to 39.

Period of retention

(2) The records must be retained for a period of eight years beginning on any one of the following days, as applicable:

- **(a)** in the case of the information referred to in paragraphs (1)(a), (c) and (d),
- **(i)** if the engine is manufactured in Canada, the last day of the calendar year that corresponds to the model year of the engine, or
- **(ii)** if the engine is imported, the day on which it is imported; and
- **(b)** in the case of the information referred to in paragraph (1)(b), the day on which the declaration is made.

Subsection 155(6) of Act

(3) For the purposes of subsection 155(6) of the Act, the record maintained by a person who makes a declaration referred to in paragraph 155(1)(a) of the Act must include a copy of the declaration and documents evidencing the use of the engine in Canada and its disposition and must be kept as follows:

- **(a)** in the case of the declaration,
- **(i)** a copy must be kept in writing with the engine until it is disposed of, and
- **(ii)** a copy must be kept in writing or in a readily readable electronic or optical form at the person's place of business for a period of eight years beginning on the day on which the engine was disposed of; and

- **(b)** in the case of the documents evidencing the use of the engine in Canada and its disposition, a copy must be kept in writing or in a readily readable electronic or optical form at the person's place of business for a period of eight years beginning on the day on which the engine was disposed of.

Location of retention

(4) If the records referred to in subsection (1), subparagraph (3)(a)(ii) or paragraph (3)(b) are retained at a location other than a place of business of the company or person, the company or person must keep a record of the name and telephone number of a contact person at that location and the street address and, if different, the mailing address of that location.

Submission to Minister

(5) If the Minister makes a written request for a record referred to in subsection (1), the record must be submitted to the Minister in either official language

- **(a)** within 40 days after the day on which the request is made; or
- **(b)** if the record must be translated from a language other than English or French, within 60 days after the day on which the request is made.

Registration System

Auxiliary emission control device

50 (1) For the purposes of paragraph 153(1)(h) of the Act, the registration system maintained by a company in respect of the engines that it manufactures or imports must include the following information:

- **(a)** the serial number of each engine that is equipped with an auxiliary emission control device referred to in subsection 7(2) that meets the requirements set out in paragraph 7(2)(e); and
- **(b)** for each engine referred to in paragraph (a), if available,
- **(i)** the number of requests received by the company or on the company's behalf for the reset of the auxiliary emission control device and, for each request, a summary of the emergency situation in which the auxiliary emission control device was activated, based on the information provided in the request for reset, and
- **(ii)** the number of times the auxiliary emission control device has been reset.

Period of retention

(2) The information included in the registration system for an engine must be retained for a period of eight years beginning on the day on which the engine is imported or its manufacture is completed.

Rental Rate

Subsection 159(1) of Act

51 The annual rental rate to be paid to a company by the Minister under subsection 159(1) of the Act, prorated on a daily basis for each day that an engine is made available, is 12% of the manufacturer's suggested retail price for the engine.

Exemption

Application for exemption

52 A company applying under section 156 of the Act for an exemption from conformity with any standard prescribed under these Regulations must, before manufacturing or importing the engine, submit the following information in writing to the Minister:

- **(a)** the company's name and street address and, if different, mailing address;
- **(b)** the name, email address and telephone number of an authorized representative of the company;
- **(c)** the province or country under the laws of which the company is established;
- **(d)** the standards from which an exemption is sought, including a reference to the provisions of these Regulations that prescribe the standards;
- **(e)** the duration requested for the exemption;
- **(f)** the estimated number of engines for which the exemption is sought and an estimate of the changes in emissions if the

exemption is granted;

- **(g)** the reason for requesting the exemption, including technical and financial information that demonstrates in detail why conformity to the standards referred to in paragraph (d) would
- **(i)** create substantial financial hardship for the company,
- **(ii)** impede the development of new features for emission monitoring or emission control that are equivalent or superior to those that conform to prescribed standards, or
- **(iii)** impede the development of new kinds of engines or engine systems or components;
- **(h)** if the basis of the application is substantial financial hardship,
- **(i)** the world production of engines manufactured by the company or by the manufacturer that is the subject of the application in the 12-month period beginning two years before the start of the exemption period being sought, and
- **(ii)** the total number of engines manufactured for, or imported into, the Canadian market in the 12-month period beginning two years before the start of the exemption period being sought; and
- **(i)** if the company is requesting that information submitted be treated as confidential under section 313 of the Act, the reasons for the request.

Defect Information

Required information

53 (1) The notice of defect referred to in subsections 157(1) and (4) of the Act must contain the following information:

- **(a)** the name of the company giving the notice and its street address and, if different, mailing address, and the name, email address, telephone number and, if any, facsimile number of the appropriate contact person;
- **(b)** for each engine in respect of which the notice is given, its make, model and model year, the name of its manufacturer, the period during which it was manufactured and any applicable emission families;
- **(c)** the range or ranges of unique identification numbers for the engines in respect of which the notice is given, if known;
- **(d)** a description of the machine or type of machine in or on which the engine is installed or is likely to be installed;
- **(e)** the total number of engines in respect of which the notice is given or, if the total number is not known, the estimated number;
- **(f)** the estimated percentage of the potentially affected engines that contain the defect;
- **(g)** a description of the defect;
- **(h)** an evaluation of the pollution risk arising from the defect;
- **(i)** a statement of the measures to be taken to correct the defect;
- **(j)** a chronology of the principal events that led to the determination of the existence of the defect, if known; and
- **(k)** a description of the means available to the company to contact the current owner of each defective engine.

Language of notice

(2) The notice of defect must be given in writing and, when given to a person other than the Minister, must be

- **(a)** in both official languages; or
- **(b)** in the person’s official language of choice, if it is known.

Initial report

(3) A company must, within 60 days after giving a notice of defect, submit to the Minister the initial report referred to in subsection 157(7) of the Act containing

- **(a)** an update to the information referred to in subsection (1), if there have been any changes to that information;
- **(b)** if not already provided in the notice,
- **(i)** the range or ranges of unique identification numbers for the engines in respect of which the notice is given,
- **(ii)** the total number of engines in relation to which the notice of defect has been given, and
- **(iii)** a chronology of the principal events that led to the determination of the existence of the defect; and

- **(c)** copies of all notices, bulletins and other circulars issued by the company in respect of the defect, including a detailed description of the nature and physical location of the defect with diagrams and other illustrations as necessary.

Quarterly report

(4) If a company submits an initial report under subsection (3), it must submit, within 45 days after the end of each quarter, a quarterly report to the Minister respecting the defect and its correction that contains the following information:

- **(a)** the number, title or other identification assigned by the company to the notice of defect;
- **(b)** if applicable, the revised number of engines in respect of which the notice of defect was given;
- **(c)** the date on which the notice of defect was given to the current owners of the affected engines and the dates of any follow-up communications; and
- **(d)** the total number or percentage of engines repaired by or on behalf of the company, including engines requiring inspection only.

Transitional Provisions

SOR/2005-32

54 (1) The provisions of the *Off-Road Compression-Ignition Engine Emission Regulations* set out in column 1 of the table to this subsection, as they read immediately before the day on which these Regulations come into force, continue to apply to engines — other than transition engines referred to in subsection (2) — whose manufacture was completed before the day on which these Regulations come into force, instead of the provisions of these Regulations set out in column 2.

Item	Column 1 Provisions of the *Off-Road Compression-Ignition Engine Emission Regulations*	Column 2 Provisions of the *Off-road Compression-Ignition (Mobile and Stationary) and Large Spark-Ignition Engine Emission Regulations*
1	section 1	section 1
2	section 3	section 3
3	section 5	section 5
4	sections 8 to 12, 14 and 24	sections 6 to 11, 14, 16 to 25 and 28 to 34
5	sections 15 and 15.1	sections 36 to 39
6	sections 16 to 17.1	sections 40 to 42
7	section 18	section 49

Transition engines

(2) The provisions of the *Off-Road Compression-Ignition Engine Emission Regulations*, as they read immediately before the day on which these Regulations come into force, continue to apply to transition engines within the meaning of section 13 of those Regulations, instead of the provisions of these Regulations.

Related Amendments

Off-Road Small Spark-Ignition Engine Emission Regulations

55 (1) The definitions *emission family*, *engine* and *volatile liquid fuel* in subsection 1(1) of the *Off-Road Small Spark-Ignition Engine Emission Regulations* are replaced by the following:

emission family means, for the 2019 and later model years,

- **(a)** in respect of a company's engines that are covered by an EPA certificate, the grouping that is specified in the EPA certificate;
- **(b)** in respect of any fuel lines and fuel tanks that form part of the complete fuel system of an engine and that are covered by one or more EPA certificates, the grouping that is specified in the EPA certificates;

- **(c)** in respect of a company's engines other than those referred to in paragraph (a), the grouping determined in accordance with
- **(i)** in the case of a bicycle engine, section 230 of subpart C of CFR 1051, and
- **(ii)** in the case of any other engine, section 230 of subpart C of CFR 1054; and
- **(d)** in respect of any fuel lines and fuel tanks that form part of the complete fuel system of an engine other than those referred to in paragraph (b), the grouping determined in accordance with
- **(i)** in the case of a bicycle engine, section 230 of subpart C of CFR 1051, and
- **(ii)** in the case of any other engine, section 230 of subpart C of CFR 1060. (*famille d'émissions*)

engine means an off-road engine that is prescribed under subsection 5(1). (*moteur*)

volatile liquid fuel means any fuel that is a liquid at atmospheric pressure and has a Reid vapour pressure greater than 13.79 kPa. (*carburant liquide volatil*)

(2) Paragraph (c) of the definition *handheld machine* in subsection 1(1) of the Regulations is replaced by the following:

- **(c)** has a dry weight of less than 16 kg, has no more than two wheels, and is designed to be supported by the operator during its use;

(3) Paragraph (g) of the definition *handheld machine* in subsection 1(1) of the Regulations is replaced by the following:

- **(g)** is a jackhammer or compactor that is designed to be supported by the operator during its use. (*machine portative*)

(4) The portion of the definition *fuel line* in subsection 1(1) of the English version of the Regulations before paragraph (a) is replaced by the following:

fuel line means hose, tubing and primer bulbs containing or exposed to liquid fuel — including moulded hose, tubing and primer bulbs — that transport fuel to or from an engine, but does not include

(5) The portion of the definition *machine portative* in subsection 1(1) of the French version of the Regulations before paragraph (a) is replaced by the following:

machine portative Machine, à l'exclusion d'une bicyclette actionnée par un moteur de bicyclette, qui, selon le cas :

56 (1) Subsections 5(1) to (1.2) of the Regulations are replaced by the following:

5 (1) Off-road engines, including those of the 2019 and later model years that have a complete fuel system, are prescribed for the purposes of the definition *engine* in section 149 of the Act if they

- **(a)** operate under characteristics significantly similar to the theoretical Otto combustion cycle;
- **(b)** use a spark plug or other sparking device;
- **(c)** develop no more than 30 kW of power measured at the crankshaft, or its equivalent, when equipped only with standard accessories — such as oil pumps or coolant pumps — necessary for their operation; and
- **(d)** have a displacement of 1 000 cm^3 or less.

(1.1) For the purposes of these Regulations, an engine kit is considered to be an engine that has a complete fuel system.

(2) The portion of subsection 5(2) of the Regulations before paragraph (a) is replaced by the following:

(2) The engines referred to in subsection (1) do not include an engine that is

(3) Subsection 5(2) of the Regulations is amended by striking out "or" at the end of paragraph (g) and by replacing paragraph (h) with the following:

- **(h)** in conformity with the requirements of the *Off-road Compression-Ignition (Mobile and Stationary) and Large Spark-Ignition Engine Emission Regulations* and has a displacement of 1 000 cm^3 or less and a maximum engine power of more than 19 kW but less than or equal to 30 kW; or
- **(i)** in conformity with the requirements of the *Off-road Compression-Ignition (Mobile and Stationary) and Large Spark-Ignition Engine Emission Regulations* as if it were a *large spark-ignition engine*, as defined in subsection 1(1) of those Regulations, but that has a maximum engine power of 19 kW or less.

(4) Subsection 5(3) of the Regulations is replaced by the following:

(3) For the purpose of section 152 of the Act, the prescribed engines are those prescribed under subsection (1) that are manufactured in Canada, except any engine that will be used in Canada solely for purposes of exhibition, demonstration, evaluation or testing.

(4) For greater certainty, the classes of engines that are prescribed for the purposes of section 154 of the Act are those that are prescribed under subsection (1).

57 Paragraphs 12.5(1)(a) and (b) of the Regulations are replaced by the following:

- **(a)** for engines that are designed to be used in a non-handheld machine, the applicable exhaust emission standards for HC + NO_X and CO set out in paragraphs 105(a) and (c) of subpart B of CFR 1054 that are applicable to engines of the same engine class, as described in section 801 of subpart I of CFR 1054, and for the useful life of an engine set out in paragraph 105(d) of subpart B of CFR 1054;
- **(b)** for engines that are designed to be used in a handheld machine other than the engines referred to in paragraph (c), the applicable exhaust emission standards for HC + NO_X and CO set out in paragraphs 103(a) and (c) of subpart B of CFR 1054 that are applicable to engines of the same engine class, as described in section 801 of subpart I of CFR 1054, and for the useful life of an engine set out in paragraph 103(d) of subpart B of CFR 1054; and

58 Section 12.6 of the Regulations is replaced by the following:

12.6 A company may choose to exempt one or more of its wintertime engines of the 2019 and later model years from the applicable exhaust emission standards for HC + NO_X set out in section 12.5 if it includes a statement to that effect in the evidence of conformity in respect of the engines in question.

59 (1) The portion of paragraph 12.7(1)(b) of the Regulations before subparagraph (i) is replaced by the following:

- **(b)** for engines that are designed to be used in a handheld machine — other than the engines referred to in paragraph (c) — for the useful life set out in section 110 of subpart B of CFR 1054,

(2) Paragraph 12.7(1)(c) of the French version of the Regulations before subparagraph (i) is replaced by the following:

- **c)** dans le cas du moteur qui est conçu pour être utilisé dans une machine portative à fonctionnement efficace par temps froid, pour la durée de vie utile précisée à l'article 110 de la sous-partie B du CFR 1054 :

60 (1) The portion of paragraph 12.8(1)(a) of the Regulations before subparagraph (i) is replaced by the following:

- **(a)** subject to subsection (1.1), in the case of a bicycle engine with a complete fuel system,

(2) Subsection 12.8(2) of the Regulations is replaced by the following:

(1.1) If a bicycle has a dry weight of less than 20 kg when a bicycle engine with a complete fuel system is installed on it, the bicycle engine may, instead of conforming to the standards referred to in paragraph (1)(a), conform to

- **(a)** the exhaust emission standards referred to in paragraph 12.5(1)(b) for an engine that is designed to be used in a handheld machine; and
- **(b)** the evaporative emission standards referred to in subparagraph 12.7(1)(b)(iv) for an engine that is designed to be used in a handheld machine.

(2) Despite paragraph (1)(a), a bicycle engine that has a total engine displacement of 70 cm^3 or less may, instead of conforming to the exhaust emission standards referred to in paragraph (1)(a), conform to the exhaust emission standards set out in paragraph 615(b) of subpart G of CFR 1051.

61 (1) Subparagraph 16(d)(i) of the English version of the Regulations is replaced by the following:

- **(i)** for engines before the 2019 model year, section 114 of subpart B of CFR 90 or, if applicable, paragraphs 135(b) to (h) of subpart B of CFR 1054, and

(2) Subparagraphs 16(d)(ii) to (iv) of the Regulations are replaced by the following:

- **(ii)** for engines of the 2019 and later model years, paragraphs 135(b) to (h) of subpart B of CFR 1054, and
- **(A)** in the case of engines with a complete fuel system other than bicycle engines, paragraphs 135(a) to (e) of subpart B of CFR 1060, and
- **(B)** in the case of bicycle engines, paragraphs 135(b) to (e) of subpart B of CFR 1051; and

(3) Section 16 of the Regulations is amended by striking out "and" at the end of paragraph (c) and by adding the following after paragraph (d):

- **(e)** for the purpose of testing the engine for conformity with exhaust emission standards, all information required to reproduce the emissions tests that generated the results contained in the records referred to in paragraph (c).

62 Section 17.1 of the Regulations is repealed.

63 Paragraph 17.2(4)(a) of the Regulations is replaced by the following:

- **(a)** be permanently applied so that any attempt to alter or remove it would damage it;

64 Paragraph 17.4(1)(e) of the Regulations is replaced by the following:

- **(e)** the name and trademark of the engine manufacturer or, if provided in the evidence of conformity, the name and trademark of a business entity with which the manufacturer has a contractual agreement;

65 Clause 19(1)(c)(ii)(B) of the French version of the Regulations is replaced by the following:

- **(B)** une mention selon laquelle l'entreprise est en mesure de produire les éléments de justification de la conformité conformément à l'article 16 ou les a produits conformément à l'article 17;

66 Paragraph 26(1)(a) of the French version of the Regulations is replaced by the following:

- **a)** le nom de l'entreprise qui donne l'avis, son adresse municipale et, si elle est différente, son adresse postale, ainsi que les nom, adresse électronique et numéro de téléphone de la personne-ressource;

Marine Spark-ignition Engine, Vessel and Off-road Recreational Vehicle Emission Regulations

67 (1) The definition *fuel tank* in subsection 1(1) of the *Marine Spark-ignition Engine, Vessel and Off-road Recreational Vehicle Emission Regulations* is replaced by the following:

fuel tank means a fuel tank that is not portable. (*réservoir de carburant*)

(2) The portion of the definition *fuel line* in subsection 1(1) of the Regulations before paragraph (a) is replaced by the following:

fuel line means hose, tubing, and primer bulbs containing or exposed to liquid fuel, including hose or tubing that transports fuel to or from an engine or a vehicle's engine that includes

68 (1) Paragraph 5(4)(g) of the Regulations is replaced by the following:

- **(g)** a vehicle that has one or more compression-ignition engines for its propulsion, if the engines in question meet the requirements of the *Off-road Compression-Ignition (Mobile and Stationary) and Large Spark-Ignition Engine Emission Regulations*;

(2) Section 5 of the Regulations is amended by adding the following after subsection (5):

Section 154 of Act

(6) For greater certainty, the classes of engines and vehicles that are prescribed for the purposes of section 154 of the Act are those that are prescribed under subsections (1) to (3).

69 Paragraphs 19(a) and (b) of the Regulations are replaced by the following:

- **(a)** in respect of non-metallic fuel lines, the applicable permeation emission standards set out in section 102(d)(2);
- **(b)** in respect of non-metallic fuel tanks, the applicable permeation emission standards set out in section 103(b);
- **(b.1)** in respect of metallic fuel tanks, the applicable permeation emission standards set out in section 103(f); and

70 Subparagraph 33(3)(d)(i) of the Regulations is replaced by the following:

- **(i)** the name, email address, telephone number, civic address and, if different, the mailing address of the other company, and

71 Paragraph 37(1)(a) of the Regulations is replaced by the following:

- **(a)** the importer's name, email address, telephone number, civic address and, if different, their mailing address;

Repeal

72 The *Off-Road Compression-Ignition Engine Emission Regulations* are repealed.

Coming into Force

Registration

73 (1) Subject to subsection (2), these Regulations come into force on the day on which they are registered.

Six months after registration

(2) Sections 1 to 25 and 28 to 72 come into force on the day that, in the sixth month after the month in which they are registered, has the same calendar number as the day on which they are registered or, if that sixth month has no day with that number, the last day of that sixth month.

SCHEDULE

(Subsection 27(1))

National Emissions Mark