Environment Canada Environnement Canada

ENVIRONMENT CANADA

TECHNICAL GUIDANCE DOCUMENT

MARINE SPARK-IGNITION ENGINE, VESSEL AND OFF-ROAD RECREATIONAL VEHICLE EMISSION REGULATIONS

under the

Canadian Environmental Protection Act, 1999

Disclaimer

This document provides guidance only. It does not in any way supersede or modify the *Canadian Environmental Protection Act, 1999* or the *Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations*. In the event of an inconsistency between this document and the Act and/or the Regulations, the Act and the Regulations shall prevail.

Transportation Division

Environment Canada

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Canada

1 INTRODUCTION

This guidance document provides information about the requirements of the *Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations* (the Regulations) established under the authority of Part 7, Division 5 of the *Canadian Environmental Protection Act, 1999* (CEPA 1999).

Given that the text of CEPA 1999 is not repeated in the Regulations, this guidance document cites both the Regulations and CEPA 1999 to aid in understanding the requirements of the Regulations and CEPA 1999.

Figure 1 illustrates how this document is organized. Each section includes a short description of a specific aspect of the Regulations, followed by additional details in question and answer format.

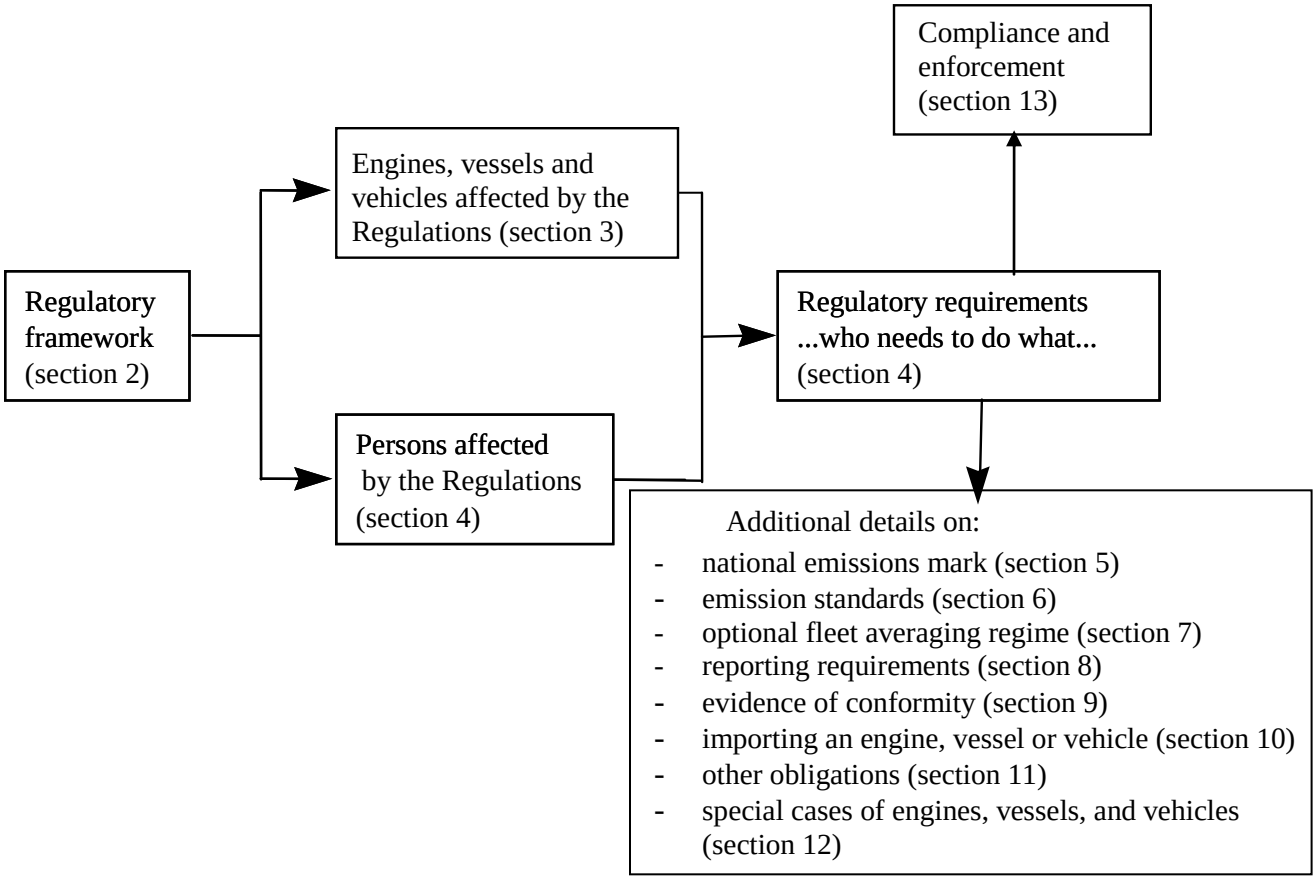


Figure 1: Structure of the guidance document

2 REGULATORY FRAMEWORK

The *Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations* establish, under the authority of CEPA 1999, Canadian emission standards aligned with those of the United States Environmental Protection Agency (EPA) for marine spark-ignition engines, vessels and off-road recreational vehicles.

The text of the Regulations can be retrieved from the CEPA Environmental Registry at http://www.ec.gc.ca/lcpe-cepa/eng/regulations/detailReg.cfm?intReg=109.

2.1 What is the *Canadian Environmental Protection Act, 1999* (CEPA 1999)?

CEPA 1999, "an Act respecting pollution prevention and the protection of the environment and human health in order to contribute to sustainable development," is Canada's principal piece of federal environmental protection legislation. Part 7, Division 5, contains the legislative authority for making regulations respecting vehicle, engine and equipment emissions. The text of CEPA 1999 can be retrieved at http://laws.justice.gc.ca/en/C-15.31/index.html or http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=26A03BFA-1.

2.2 What is the CEPA Environmental Registry?

The CEPA Environmental Registry is a comprehensive source of public information relating to activities under CEPA 1999. In addition to providing up-to-date copies of current CEPA 1999 instruments (e.g., regulations, voluntary agreements), the Registry encourages and supports public participation in environmental decision making, by facilitating access to documents arising from the administration of CEPA 1999. The Registry is accessible at http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=D44ED61E-1.

2.3 What is the Code of Federal Regulations?

The Code of Federal Regulations (CFR) is a codification of the general and permanent rules published by the U.S. federal government. In this guidance document, "CFR" refers to the following parts under Title 40, "Protection of Environment":

- Part 1045 "Control of Emissions from Spark-Ignition Propulsion Marine Engines and Vessels"
- Part 1051 "Control of Emissions from Recreational Engines and Vehicles"
- Part 1060 "Control of Evaporative Emissions from New and In-use Nonroad and Stationary Equipment"
- Part 1068 "General Compliance Provisions for Engine Programs"

The text of the CFR can be retrieved at http://ecfr.gpoaccess.gov.

The Regulations incorporate portions of the CFR by reference, including any subsequent amendments made by the EPA, in order to align the engine, vessel and vehicle emission standards of the two countries. Subsection 1(2) of the Regulations states that incorporation by reference to the CFR shall be read as **excluding**:

- references to the EPA or its Administrator exercising discretion in any way;
- alternative standards related to the averaging, banking and trading of emission credits, to small volume manufacturers or to financial hardship; and
- standards or evidence of conformity of any authority other than the EPA.

2.4 Are the Regulations identical to the EPA rules?

No. While the overall mandates of Environment Canada and the EPA are quite similar, there are differences in how their environmental protection regulations are developed and enforced. The Regulations were developed to *align* Canadian emission standards with those of the EPA. Ancillary provisions are as similar as possible, considering the different regulatory frameworks in Canada and the U.S.

2.5 Certain provisions of the Regulations state that information can be requested by or sent to the Minister. Who is the Minister?

The "Minister" is the federal Minister of the Environment. Where the Regulations require information to be submitted to the Minister, unless otherwise directed, it should be sent to:

Director, Transportation Division
Energy and Transportation Directorate
Environment Canada
351 Saint-Joseph Boulevard
Gatineau, Quebec K1A 0H3
fax: 819-953-7815
phone: 819-994-3706
email: VehicleandEngineInfo@ec.gc.ca

An official of Environment Canada may also make a request for information, under CEPA 1999 or the Regulations, on behalf of the Minister. The request will indicate if the information is to be sent to the Minister or to the official whose name appears on the notice.

3 ENGINES, VESSELS AND VEHICLES SUBJECT TO THE REGULATIONS

The Regulations prescribe emission-related standards for the different classes of marine spark-ignition engines, vessels and off-road recreational vehicles, and stipulate the requirements respecting conformity of these products with the Regulations.

The Regulations apply to engines, vessels and vehicles manufactured in Canada that are "transported within Canada" (i.e., transported between provinces and territories) and to engines, vessels and vehicles imported into Canada. They also apply to companies in the business of manufacturing, distributing or importing these engines, vessels and vehicles for sale in Canada, and to persons who import these engines, vessels and vehicles for their own use.

Section 3.4 of this document identifies the categories of engines, vessels and vehicles that are not subject to these Regulations.

3.1 What is a marine spark-ignition engine?

Outboards, inboard engines, and personal watercraft engines are classes of marine spark-ignition engines prescribed under subsection 5(1) of the Regulations. These engines are used or are capable of being used to propel a vessel. Marine spark-ignition engines operate under characteristics significantly similar to the theoretical Otto combustion cycle and use a spark plug or other sparking device.

The following terms are also useful in defining a marine spark-ignition engine:

- "Outboard" means an assembly of a spark-ignition engine and drive unit used to propel a vessel from a properly mounted position external to the hull of the vessel.

An outboard drive unit is partially submerged during operation and can be tilted out of the water when not in use.[1]

- "Personal watercraft" means a vessel with an enclosed hull of less than 4 m in length that uses an internal combustion engine powering a water-jet pump as its primary source of propulsion and that is designed to be used by one or more persons while sitting, standing or kneeling.
- "Inboard engine," in relation to a vessel, includes a stern drive (also known as an inboard/outboard engine) and a jet boat engine, but does not include a personal watercraft engine.
- "Conventional inboard engine" means an inboard that is rated at 373 kW at most.
- "High-performance inboard engine" means an inboard engine that is rated at more than 373 kW and has design features to enhance power output, such that the expected operating time until rebuild is less than 480 hours.
- "Jet boat" means a vessel in which an internal combustion engine is installed that powers a water jet pump as the vessel's primary source of propulsion, and is designed with an open area for carrying passengers.

3.2 What is a vessel?

Section 149 of CEPA 1999 defines a vessel as being a boat, ship or craft designed, used or capable of being used solely or partly for navigation in, on, through or immediately above water. Subsection 5(2) of the Regulations further specifies that the vessels subject to the Regulations are those in which a fuel line or fuel tank is installed and that are designed to be propelled by an outboard, inboard engine or personal watercraft engine.

3.3 What is an off-road recreational vehicle?

Off-road recreational vehicles consist of four classes of vehicles[2] as described in subsection 5(3) of the Regulations: off-road motorcycles, snowmobiles, all-terrain vehicles (ATVs) and utility vehicles (UVs).

- "Off-road motorcycle" means a two-wheeled vehicle that is equipped with a seat.
- "Snowmobile" means a vehicle, including a vehicle that can be converted into a snowmobile, that has a maximum width of 1.5 m and is designed primarily for travel on snow.
- "All-terrain vehicle" means a land-based or amphibious vehicle, other than a utility vehicle, that

    (a) is designed to travel on three or four low-pressure tires, is equipped with a seat designed to be straddled and with handlebars for steering, and is designed to be used by a single operator and no passengers; or

[1] The definition of outboard engine is from section 801 of CFR 1045.

[2] CEPA 1999 defines "vehicle" as any prescribed self-propelled vehicle, but does not include
(a) an aircraft as defined in subsection 3(1) of the *Aeronautics Act*;
(b) rolling stock as defined in section 6 of the *Canada Transportation Act*; or
(c) a vessel that is fitted, for the purpose of propulsion, with a marine compression-ignition engine that is rated at 37 kW or more.

(b) has three or more wheels and one or more seats, is designed for operation over rough terrain, is designed for transportation, and has a maximum vehicle speed of at least 40 km/h.

- "Utility vehicle" means a vehicle that is designed for operation over rough terrain and that

  (a) has at least four wheels and seating for at least two persons;

  (b) has an engine displacement of at most 1000 cm^3, a maximum engine brake power of at most 30 kW, and a maximum vehicle speed of at least 40 km/h; and

  (c) has either a rear payload of at least 159 kilograms (kg) or seating for at least six passengers.

3.4 Which categories of engines, vessels and vehicles are not subject to the Regulations?

As specified in subsection 5(4) of the Regulations, the engines, vessels and vehicles that are not subject to the Regulations are those that:

- are marine engines that are designed exclusively for competition and that bear a label that indicates that the engine is a competition engine. A marine engine "designed exclusively for competition" must:
  - have performance characteristics that are substantially superior to non-competitive engines, and
  - not be displayed for sale in any public dealership or otherwise offered for sale to the general public.
- are vessels in which a competition marine engine is installed;
- are off-road motorcycles that are designed exclusively for competition, bear a label referred to in paragraph (*a*) of the definition of "competition vehicle" under subsection 2(1) of the *Motor Vehicle Safety Regulations*, or a label that indicates that they are competition off-road motorcycles. An off-road motorcycle that is "designed exclusively for competition" must meet at least four of the following characteristics:
  - no headlight or other lights;
  - no spark arrestor;
  - no manufacturer's warranty;
  - suspension travel that is greater than 25.4 cm;
  - engine displacement that is greater than 50 cm^3;
  - seat surface area that is less than 195 cm^2.
- are snowmobiles and all-terrain vehicles that are designed exclusively for competition, bear a label referred to in paragraph (*a*) of the definition of "competition vehicle" under subsection 2(1) of the *Motor Vehicle Safety Regulations*, or a label that indicates that they are competition snowmobiles or all-terrain vehicles. A snowmobile or all-terrain vehicle that is "designed exclusively for competition" is one that has performance characteristics that are substantially superior to non-competitive models and that is not covered by a manufacturer's warranty;

- are engines or vehicles regulated by the *On-Road Vehicle and Engine Emission Regulations*;
- are vehicles or vessels that are propelled by power generated solely by one or more electric motors;
- are vehicles that have one or more compression-ignition engines for propulsion;
- are vehicles or vessels (and engines of vessels) that are designed exclusively for use in combat or combat support during military activities, including reconnaissance missions, rescue missions and training missions;
- are engines, vessels or vehicles being exported and that are accompanied by written evidence that establishes that they will not be sold or used in Canada; and
- are engines, of a vessel, that use natural gas as fuel and are rated at 250 kW or more.

3.5 Do all marine spark-ignition engines, vessels and off-road recreational vehicles that are subject to the Regulations have to conform to all provisions of the Regulations?

No. The engines, vessels and vehicles listed below must conform only to certain provisions of the Regulations. Additional details on these special provisions are given, as noted, in section 12 of this document:

- engines, vessels and vehicles that are imported into Canada solely for purposes of exhibition, demonstration, evaluation or testing (see section 12.1);
- engines, vessels and vehicles that are in transit through Canada, from a place outside Canada to another place outside Canada (see section 12.2);
- engines, vessels and vehicles that are being imported exclusively for use by a visitor to Canada or by a person passing through Canada to another country (see section 12.3);
- engines, vessels and vehicles that do not meet the requirements of the Regulations at importation or when leaving a factory but that will meet these requirements before they leave the possession or control of the company, such as incomplete engines, vessels or vehicles (see section 12.4);
- replacement marine engines, as this term is defined in subsection 18(1) of the Regulations (see section 12.5); and
- engines, vessels and vehicles for which the Governor-in-Council has granted an exemption (see section 12.6).

All other engines, vessels and vehicles must conform to all applicable provisions of the Regulations.

3.6 When do the Regulations come into force?

The Regulations came into force on April 5, 2011, except for the sections related to the national emissions mark, which came into force on February 4, 2011. Additional details on the national emissions mark are provided in section 5 of this document. Additional details on when various emission standards begin to apply for the different classes of engines, vessels, and vehicles are provided in section 6.12. Emission standards that start to apply to engines and

vehicles in the 2012 model year apply only to those engines that are manufactured, and vehicles that have their main assembly completed, on or after April 5, 2011.

3.7 What is a model year?

Model year is the year designated by a manufacturer of a marine engine, vessel or off-road recreational vehicle.

If the period of production of a model of engine, vessel or vehicle does not include January 1 of a calendar year, the model year corresponds to the calendar year during which the period of production falls, or corresponds to the calendar year immediately following the calendar year during which the period of production falls.

If the period of production of a model of marine engine, vessel or off-road recreational vehicle includes January 1 of a calendar year, the model year corresponds to that calendar year.

The model year can span a period of up to two calendar years less one day, but can only include one January 1. For example, a model of snowmobile that is manufactured between August 1 and November 1, 2012, could be designated as 2012 or 2013 model year. A model of snowmobile manufactured between August 1, 2012 and January 15, 2013, would be designated as 2013 model year.

4 PERSONS AFFECTED BY THE REGULATIONS

Persons affected by the regulations are the following:

- persons who fall under the definition of “company” in CEPA 1999; and
- other persons who do not fall under the definition of “company,” but who import engines, vessels or vehicles (e.g., for their own use).

In section 149 of CEPA 1999, a company is defined as a “person” who:

- is engaged in the business of manufacturing vehicles, engines or equipment in Canada;
- is engaged in the business of selling to other persons, for the purpose of resale by those persons, vehicles, engines or equipment obtained directly from a person described in paragraph (*a*) or the agent of such person; or
- imports any vehicle, engine or equipment into Canada for the purpose of sale.

To highlight that “company” under CEPA 1999 means only specific types of commercial entities, the word will be italicized throughout the rest of this document.

To summarize, four different types of persons are potentially affected by the Regulations:

- a Canadian engine, vessel or vehicle manufacturer;
- a distributor of engines, vessels or vehicles manufactured in Canada;
- an importer of engines, vessels or vehicles for the purpose of sale; and
- a person who is not a *company* but who imports an engine, vessel or vehicle.

The regulatory requirements for each type of person are summarized in section 4.5 of this document.

4.1 Who is a Canadian engine, vessel or vehicle manufacturer?

A person engaged in the business of manufacturing vehicles, engines or equipment in Canada is a *company* under CEPA 1999. Under CEPA 1999, “to manufacture” includes any process of assembling or altering any vehicle or engine before its sale to the first retail purchaser. Therefore a person who modifies an engine, vessel or vehicle before it is sold, for example by adapting a gasoline-fuelled engine to run on ethanol, would be considered to be a *company* for the purposes of the Regulations.

Engines, vessels or vehicles manufactured in Canada that are transported between provinces or territories require a national emissions mark (see section 5).

4.2 Who is a distributor of engines, vessels or vehicles?

A person who is engaged in the business of selling to other persons, for the purpose of sale by those persons, engines, vessels or vehicles obtained directly from a Canadian engine, vessel or vehicle manufacturer or its agent, is a distributor of engines, vessels or vehicles and is a *compan*y under CEPA 1999.

Engines, vessels or vehicles manufactured in Canada that are transported between provinces or territories require a national emissions mark (see section 5). Only one national emissions mark is required per engine, vessel or vehicle.

4.3 When is an importer a *company* under CEPA 1999?

Under CEPA 1999, a *company* is a person who imports engines or vehicles into Canada for the purposes of sale. Section 3 of CEPA 1999 defines to “sell” as including to offer for sale or lease, have in possession for sale or lease, or deliver for sale or lease.

A person importing engines, vessels or vehicles for a purpose other than sale is not a *company* under CEPA 1999. Therefore, an individual or commercial entity importing engines, vessels or vehicles solely for their own use is not considered to be a *company* for the purposes of the Regulations. For example, a marina directly importing a personal watercraft to be used by its employees would not be considered a *company*. However, there are regulatory requirements for this category of persons, as described in section 4.5 below.

4.4 Is a dealer a *company* under CEPA 1999?

A dealer is a *company* under CEPA 1999 if it falls under the definition of *company* in CEPA 1999. If a dealer, for example, imports into Canada an engine, vessel or vehicle for the purpose of sale, it is a *company* and must meet the associated requirements for companies under the Regulations (see section 4.5 below).

4.5 What are the regulatory requirements for each type of “person” affected by the Regulations?

Table 1 provides a summary of the requirements for the four different categories of persons affected by the Regulations. When necessary, more detailed information is provided elsewhere in this guidance document as outlined below.

Table 1: Summary of regulatory requirements

	Canadian Engine, Vessel or Vehicle Manufacturer	Canadian Engine, Vessel or Vehicle Distributor	Engine, Vessel or Vehicle Importer for the Purpose of Sale	Engine, Vessel or Vehicle Importer for Other Purposes	Section in CEPA 1999 or Regulations	Section in Guidance Document
Company under CEPA 1999?	✓	✓	✓		s. 149 of CEPA 1999	4
Affix the national emissions mark	✓	✓[a]			s. 150–152 of CEPA 1999, s. 6–7 of Regulations	5
Supply engines, vessels or vehicles that comply with standards	✓	✓	✓	[b]	s. 153–154 of CEPA 1999, s. 9–32 of Regulations	6 & 7
Maintain evidence of conformity	✓	✓	✓[c]	[b]	s. 153–154 of CEPA 1999, s. 35–36 of Regulations	9
Submit an importation declaration			✓	✓[d]	s. 153–154 of CEPA 1999, s. 37 of Regulations	10
Affix prescribed labels to engines, vessels or vehicles	✓	✓	✓	✓	s. 153–154 of CEPA 1999, s. 5, 7, 8, 18, 35, 37, 41 & 42 of Regulations	3, 9-12
Provide maintenance instructions	✓	✓	✓[c]		s. 153 of CEPA 1999, s. 34 of Regulations	11
Cause notice of defect to be given, if necessary	✓	✓	✓		s. 157 of CEPA 1999, s. 43 of Regulations	11
Affix engine, vessel or vehicle identification number	✓	✓[a]	✓[e]		s. 153–154 of CEPA 1999, s. 8 of Regulations	11
Submit end of model year report	✓	✓	✓		s. 162 of CEPA 1999, s. 33 of Regulations	8

[a] Unless already affixed by the manufacturer.
[b] The presence of the prescribed label on the engine, vessel or vehicle is considered to be evidence that the engine, vessel or vehicle conforms to the prescribed emission standards when it is imported by a person for purposes other than sale.

[c] The *company* may arrange with the engine, vessel or vehicle manufacturer that certain required information be provided by the engine, vessel or vehicle manufacturer on behalf of the *company*.
[d] A person who is not a *company* under CEPA 1999, and who imports at most 10 of any combination of engines, vessels and vehicles, is not required to submit an importation declaration.
[e] Unless already affixed by the manufacturer or distributor.

4.6 How are foreign engine, vessel and vehicle manufacturers affected by the Regulations?

Engines, vessels or vehicles produced by foreign manufacturers and imported into Canada must conform to the Regulations.

A foreign manufacturer at a location outside of Canada is not considered to be a *company* under CEPA 1999 unless it engages, in Canada, in one of the activities under the definition of *company* outlined above. Where a foreign manufacturer does not meet the definition of *company*, the responsibility for complying with the applicable provisions of the Regulations and CEPA 1999 is with the person in Canada who imports the foreign-manufactured engine, vessel or vehicle and not with the foreign manufacturer. In the event of a contravention of a provision of the Regulations or CEPA 1999 in respect of an imported engine, vessel or vehicle, the person in Canada who imports the engine, vessel or vehicle may be subject to enforcement measures under CEPA 1999.

Importers may require the assistance of a foreign engine, vessel or vehicle manufacturer to demonstrate compliance with the Regulations. In particular, the assistance of foreign engine, vessel or vehicle manufacturers may be required to ensure that engines, vessels or vehicles imported into Canada meet the prescribed standards and to provide evidence of conformity to that effect. These requirements are described in sections 6 and 9 of this document.

4.7 Are there special provisions for importers of small volumes of engines, vessels or vehicles?

Yes. As specified in subsection 33(4) of the Regulations, a *company* that imports less than 100 marine engines or off-road recreational vehicles of a particular model year may submit a simplified end of model year report. If all of those engines, vessels and vehicles that the *company* imports are covered by an EPA certificate of conformity and are sold concurrently in Canada and the United States, the *company* is not required to include the information set out in paragraphs 33(3)(*b*) and (*c*) that is otherwise ordinarily required in its end of model year report (see section 8 and Appendix B of this document for end of model year report requirements).

Also, as specified in subsection 37(2) of the Regulations, a person who is not a *company*, and who imports at most 10 of any combination of engines, vessels and vehicles in a calendar year, is not required to make the declaration to the Minister otherwise required when an engine, vessel or vehicle is imported (see section 10 of this document for importation requirements).

5 NATIONAL EMISSIONS MARK

Companies are only required to affix the national emissions mark to engines that are manufactured in Canada and to vessels or vehicles whose main assembly is completed in Canada, except for those engines, vessels and vehicles that are to be used in Canada solely for the purposes of exhibition, demonstration, evaluation or testing. Section 152 of CEPA 1999, combined with subsection 5(5) of the Regulations, prohibits a *company* from transporting

engines, vessels or vehicles manufactured in Canada between provinces or territories unless the engine, vessel or vehicle has a national emissions mark applied to it.

The national emissions mark is the symbol shown in Figure 2. Section 150 of CEPA 1999 specifies that the national emissions mark is a national trademark and establishes limitations on any person's use of the mark (or the use of any other mark in such a manner that it is likely to be mistaken for a national emissions mark). *Companies* must obtain the Minister's authorization to use the national emissions mark.

Figure 2: The national emissions mark

5.1 Are there any conditions regarding affixing a national emissions mark to an engine, vessel or vehicle?

Yes. Subsection 153(1) of CEPA 1999 prohibits a *company* from affixing the national emissions mark to any engine, vessel or vehicle or selling any engine, vessel or vehicle to which the national emissions mark has been applied, unless the requirements of subsection 153(1) of CEPA 1999 and related provisions of the Regulations are met.

5.2 When do the provisions regarding the national emissions mark come into effect?

Subsections 6(1) and (2) of the Regulations, which relate to the national emissions mark, came into effect on the day that the Regulations were registered (i.e., February 4, 2011), to allow *companies* to apply for and be granted authorization to affix the national emissions mark before the other sections of the Regulations came into effect (i.e., April 5, 2011). Under subsection 6(3), a *company* that has received authorization may affix the mark to 2012 model year engines, vessels or vehicles manufactured or assembled before the day on which that section comes into force if the engine, vessel or vehicle conforms to the standards and the *company* meets the requirements of the Regulations in respect of that engine, vessel or vehicle.

5.3 Who can affix the national emissions mark?

Under section 151 of CEPA 1999, a *company* (i.e., a manufacturer, distributor or importer), who has received an authorization from the Minister, can affix the national emissions mark to vehicles, engines or equipment. See section 4 of this document for information on who is a *company* under CEPA 1999.

5.4 How does a *company* obtain the Minister's authorization to use the national emissions mark?

A *company* must submit an application to obtain the Minister's authorization to use the national emissions mark. The information to be included in the application is set out in subsection 6(1) of the Regulations. A *company*'s application must be signed by a person who is authorized to act on behalf of the *company*.

When the Minister authorizes a *company* to use the national emissions mark, a *company* authorization number will be assigned by the Minister to the *company*. This *company* authorization number should not be confused with the engine, vessel or vehicle identification number that is required by section 8 of the Regulations and described in section 11.1 of this document.

5.5 What information could satisfy the requirement of paragraph 6(1)(*d*) of the Regulations to show that the *company* is capable of verifying compliance with the standards?

Information to show that a *company* is capable of verifying compliance with the regulatory standards may be presented in various forms, including but not limited to the following:

- Recent experience in obtaining EPA emission certification

  When applicable, a *company* may provide the following statement: "The *company* has been issued certificates of conformity by the U.S. EPA within the last five years as evidence of conformity with U.S. regulatory emission standards for engines, vessels or vehicles covered under the *Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations.*"

- Technical information

  The *company* may provide technical information to show that it is capable of verifying compliance with the standards set out in the Regulations, including, but not limited to, information describing the capabilities of the emission test facilities operated by, or on behalf of, the *company* to produce evidence that its engines, vessels or vehicles conform to the standards set out in the Regulations. This may include evidence that the emission test facility used on behalf of the *company* has produced test results used in support of a successful application to the EPA for the issuance of a certificate of conformity.

The Minister will assess the information provided to determine if the *company* meets the requirements for being authorized to affix the national emissions mark on engines, vessels or vehicles.

5.6 Do imported engines, vessels or vehicles require the national emissions mark?

No. Subsection 153(1) of CEPA 1999 directly requires that imported engines, vessels or vehicles conform to the requirements of the Regulations as a condition for their importation into Canada. Accordingly, affixing a national emissions mark to imported engines, vessels or vehicles is not required to demonstrate such conformity. Nonetheless, a *company* that is authorized by the Minister to use the national emissions mark may affix the mark to engines, vessels or vehicles that are manufactured outside of Canada, provided they conform to the requirements of the Regulations.

5.7 Are there any requirements regarding the size, location and manner of affixing the national emissions mark to an engine, vessel or vehicle?

Yes. Requirements regarding the size, location and manner of affixing the national emissions mark to engines, vessels or vehicles are addressed in section 7 of the Regulations.

The national emissions mark shall be at least 7 mm in height and 10 mm in width. The *company* authorization number assigned by the Minister to the *company* (described in section 5.4 of this document) shall be in figures that are at least 2 mm in height, immediately below or to the right of the national emissions mark.

The national emissions mark shall be located on or immediately next to the EPA emission control information label, or, if there is no such label, in a visible, readily accessible location.

The national emissions mark shall be on a label that is permanently applied, is resistant to any weather condition, and bears legible and indelible inscriptions.

6 EMISSION STANDARDS

The Regulations prescribe that engines, vessels and vehicles that are manufactured in Canada or imported into Canada conform to applicable standards and provisions for:

- emission control systems and defeat devices (section 9 of the Regulations);
- adjustable parameters (section 10 of the Regulations);
- exhaust, crankcase and evaporative emissions (sections 11–15 and 18–22 of the Regulations); and
- engine diagnostics and torque broadcasting systems (sections 16 and 17 of the Regulations).

These standards are aligned with those established by the corresponding EPA rules for marine spark-ignition engines, vessels and off-road recreational vehicles as published in the CFR.[3]

6.1 What are the options for conformity with the emission standards?

As specified in subsection 11(1) of the Regulations, engines, vessels and vehicles are required to conform to the standards, through one of the following options:

- **paragraph 11(1)(*a*)** – conforming directly to the applicable standard;
- **paragraph 11(1)(*b*)** – for engines and vehicles that are sold concurrently in Canada and the United States and that are covered by an EPA certificate of conformity, conforming to the standards or family emission limits (FELs) of that certificate;
- **paragraph 11(1)(*c*)** – for vessels and outboards that are sold concurrently in Canada and the United States and that contain fuel lines or fuel tanks that are covered by one or more EPA certificates, conforming, in respect of those fuel lines and fuel tanks, to the standards or FELs referred to in those EPA certificates; or

[3] EPA regulations for off-road recreational vehicles, marine spark-ignition engines and vessels can be found, respectively, at:
http://www.access.gpo.gov/nara/cfr/waisidx_10/40cfr1051_10.html
http://www.access.gpo.gov/nara/cfr/waisidx_10/40cfr1045_10.html
http://www.access.gpo.gov/nara/cfr/waisidx_10/40cfr1060_10.html

- **paragraph 11(1)(*d*)** – for engines and vehicles, conforming to a FEL in lieu of the standard and conforming on the basis of fleet averaging. The optional fleet averaging regime is only available for certain types of emissions and classes of engines and vehicles (see section 7.2 of this document for emission types and classes for which fleet averaging is available).

All three options for conformity with the standards (i.e., paragraphs 11(1)(*a*), (*b*) and (*d*) of the Regulations) are available for outboards and personal watercraft engines and conventional inboard engines, as well as all off-road recreational vehicles. Only the options under paragraphs 11(1)(*a*) and (*b*) are available for high-performance inboard engines. Only the options under paragraphs 11(1)(*a*) and (*c*) are available for evaporative emissions from vessels and outboards with installed fuel lines or fuel tanks (see section 7.2 of this document).

The following diagrams present the options for conformity with emission standards for the various classes of engines, vessels and vehicles.

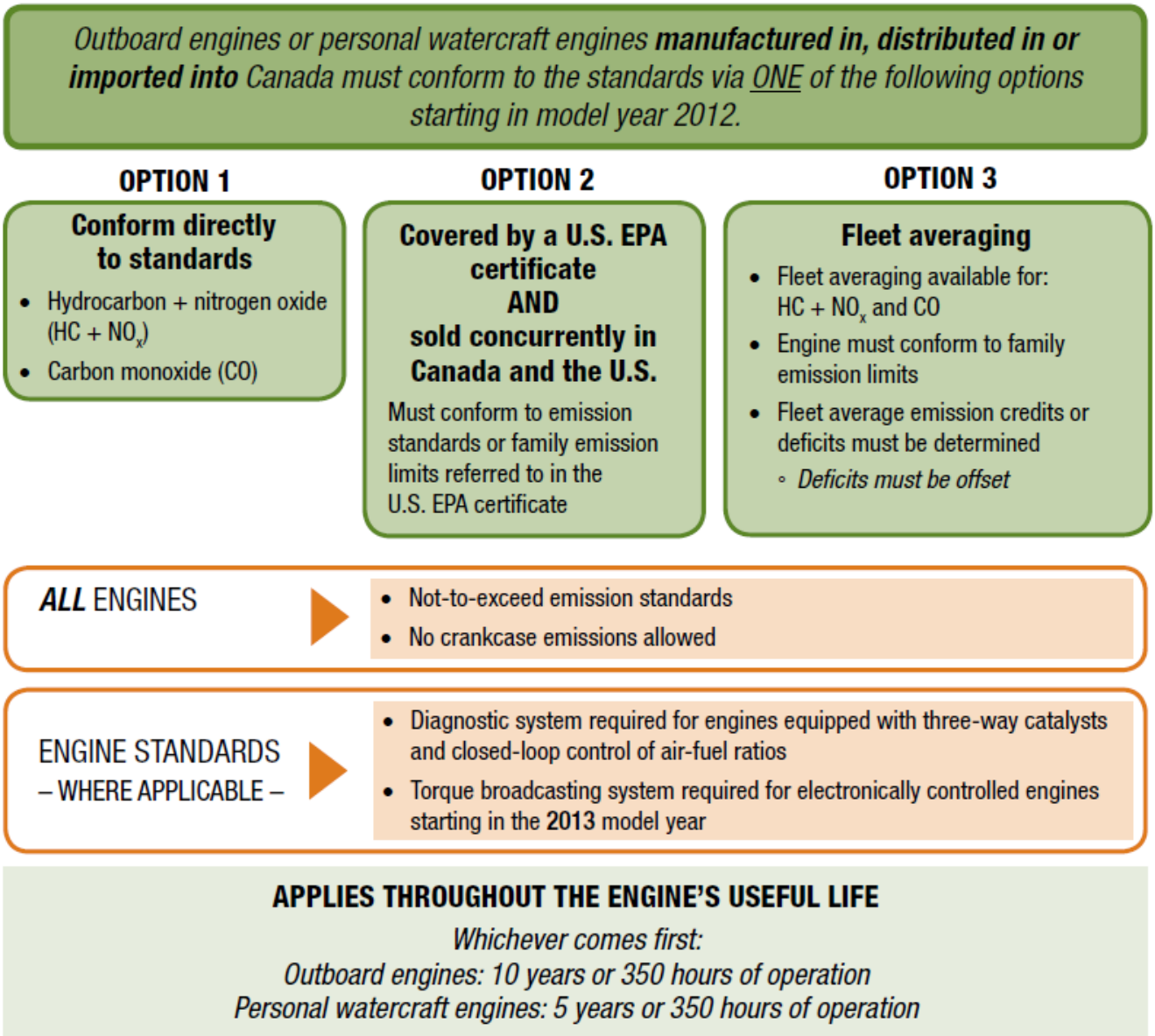


Figure 3: Overview of compliance options for outboard engines and personal watercraft engines

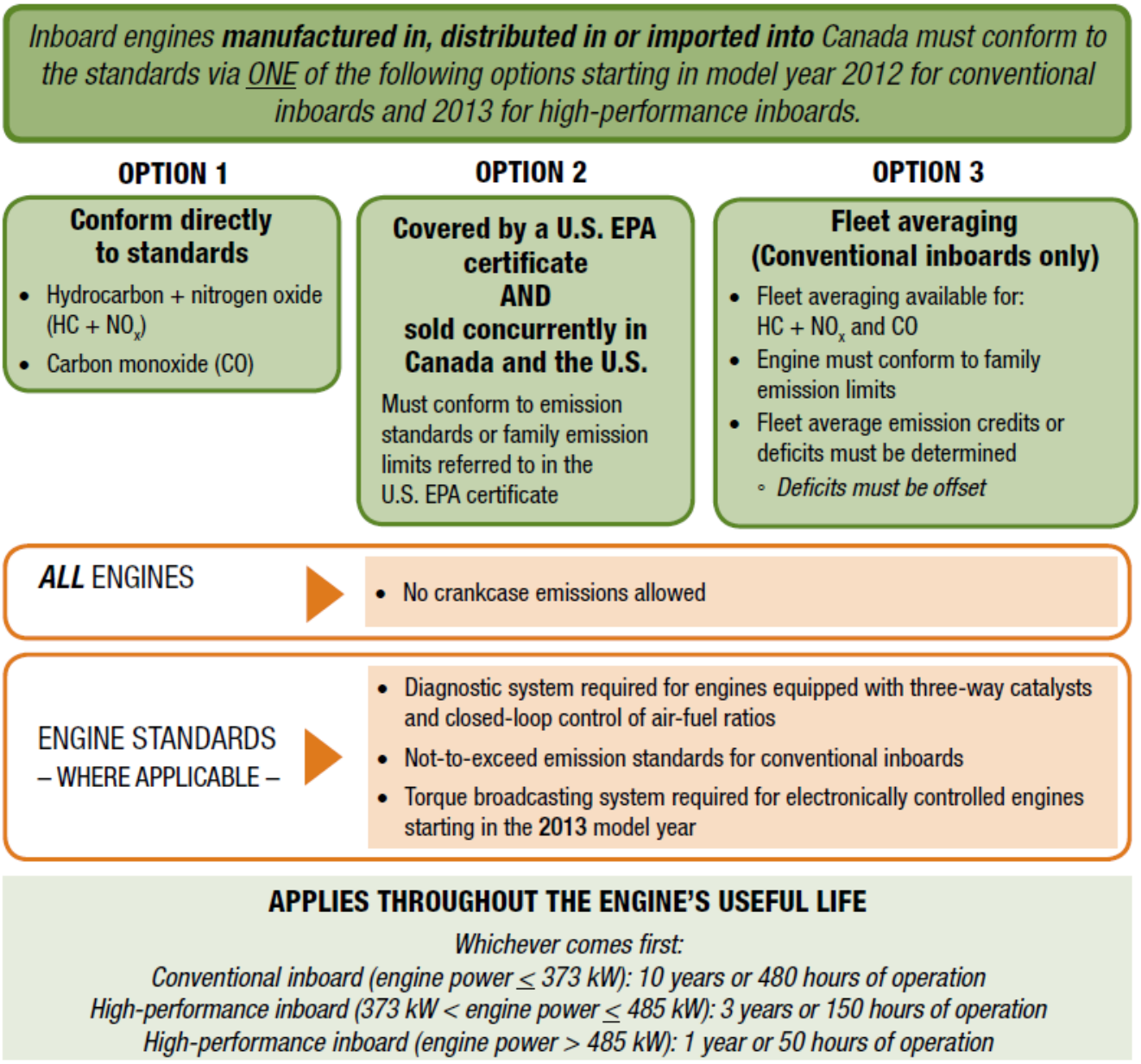


Figure 4: Overview of compliance options for inboard engines

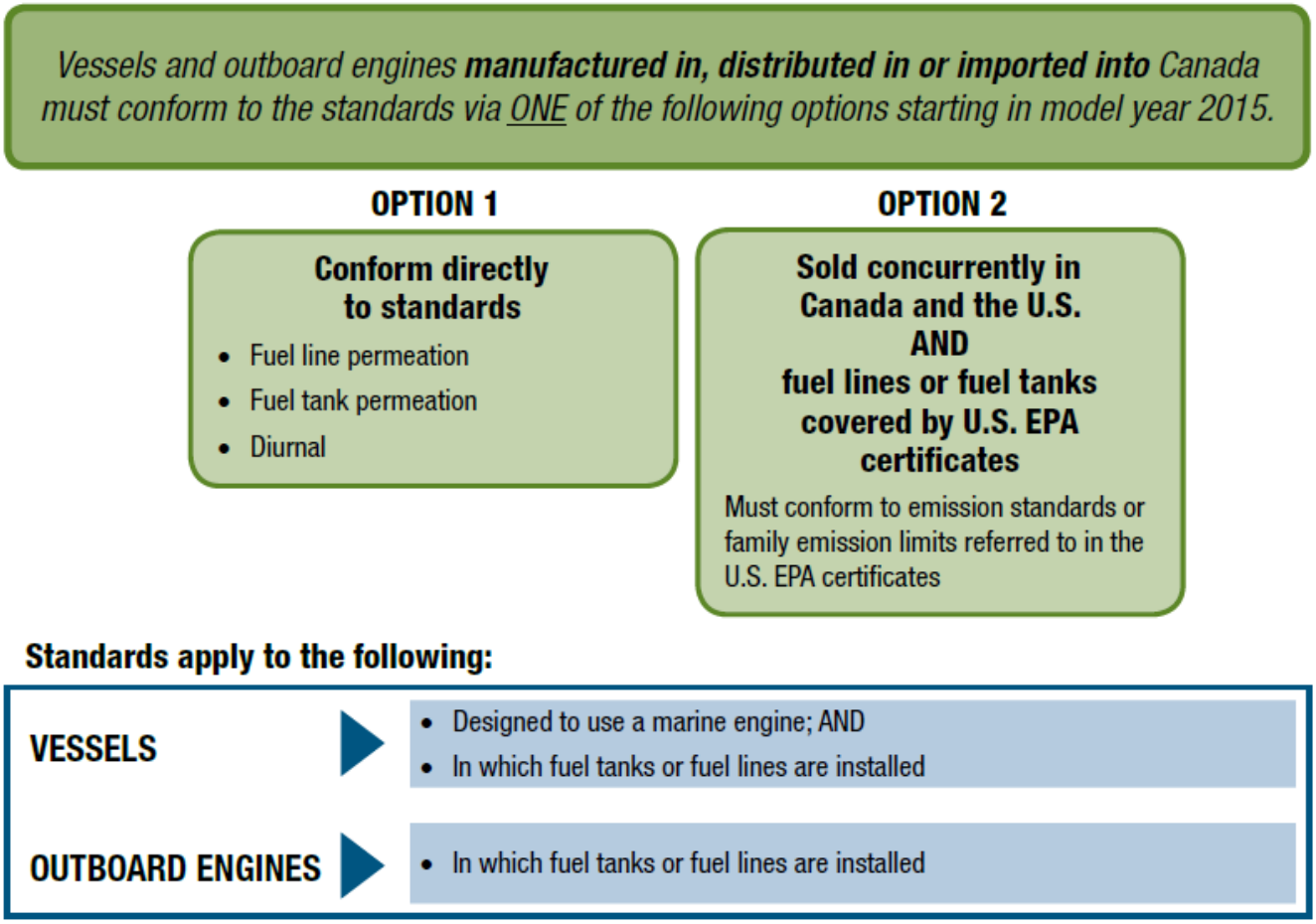


Figure 5: Overview of compliance options for vessels and outboards (evaporative emissions only)

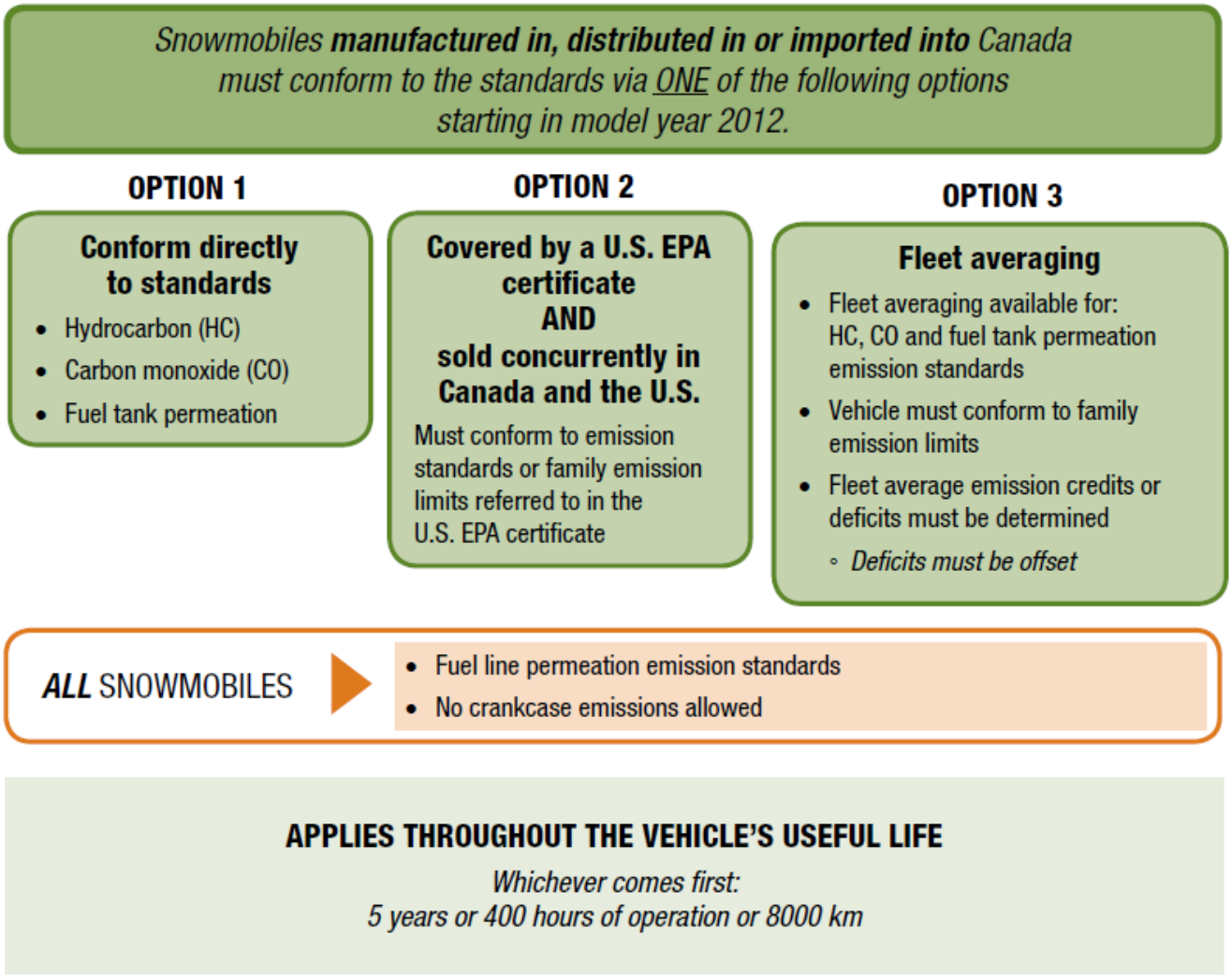


Figure 6: Overview of compliance options for snowmobiles

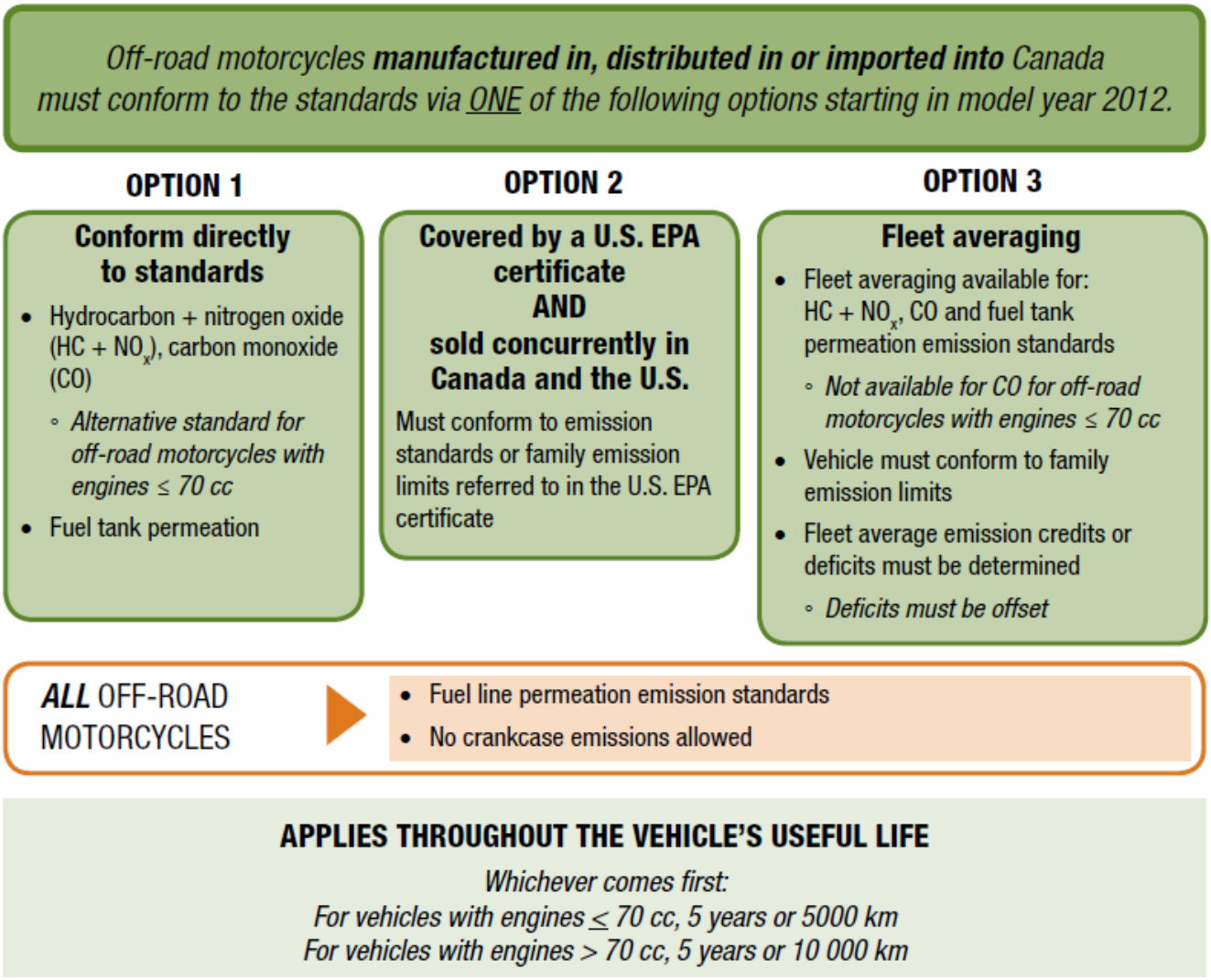


Figure 7: Overview of compliance options for off-road motorcycles

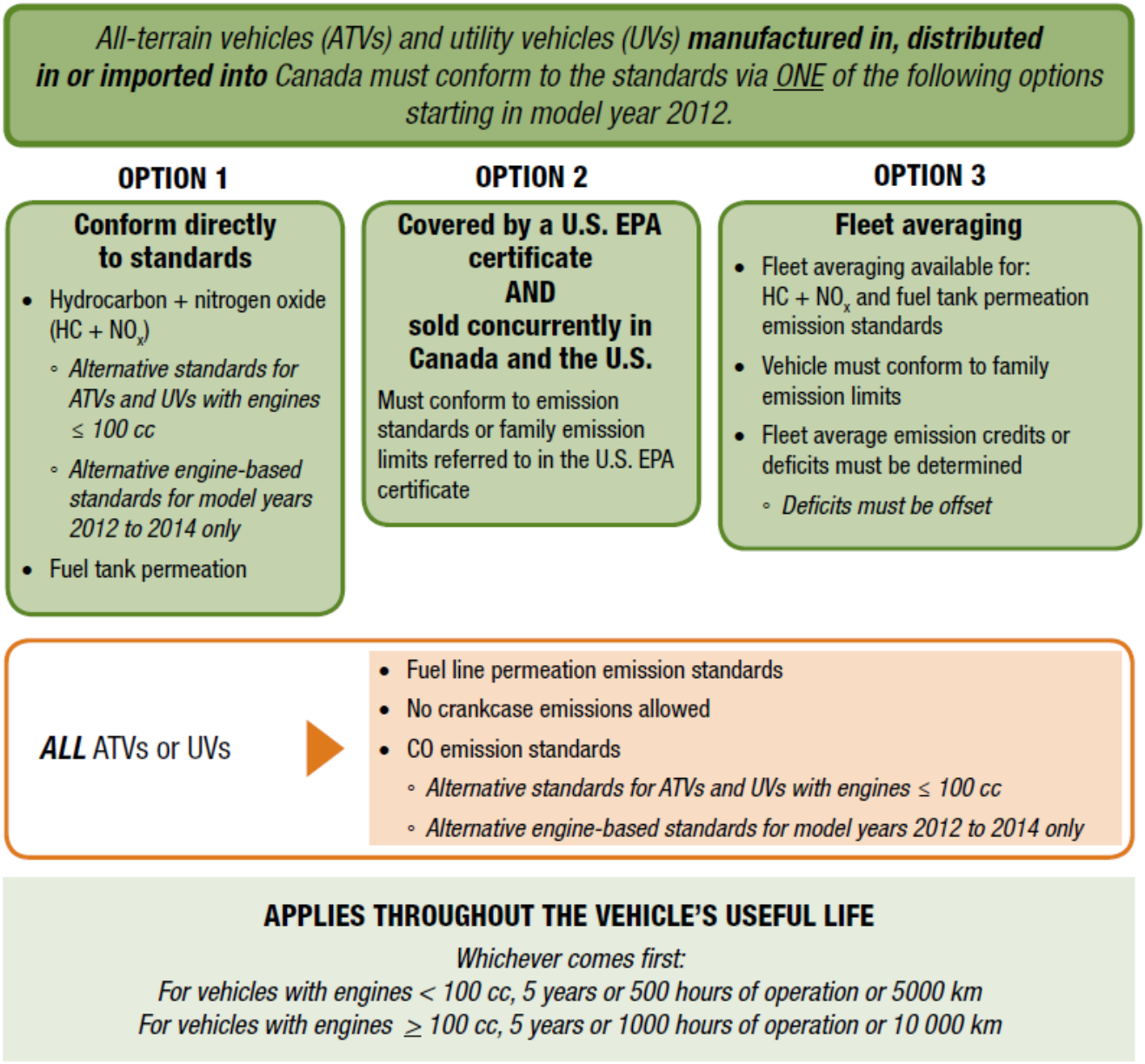


Figure 8: Overview of compliance options for all-terrain vehicles and utility vehicles

6.2 What is an emission control system?

Subsection 1(1) of the Regulations defines an emission control system as any device, system or element of design that controls or reduces the emissions from an engine, vessel or vehicle.

6.3 Are there restrictions on an emission control system installed on a prescribed engine, vessel or vehicle?

Yes. Subsection 9(1) of the Regulations prescribes that an emission control system cannot release a substance that causes air pollution that would not have been released if the

system were not installed. In addition, the emission control system cannot make the engine, vessel or vehicle unsafe, or endanger persons or property near it.

6.4 What is a defeat device?

A defeat device is 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, vessel or vehicle. An auxiliary emission control device may not be considered a defeat device if the conditions under which it reduces the effectiveness of the emission control system are included in the emission test procedures required by these Regulations, if it is needed to protect the engine, vessel or vehicle against damage or accident, or if its use does not go beyond the requirements of engine starting.

Under subsection 9(2) of the Regulations, no engine, vessel or vehicle can be equipped with a defeat device.

6.5 What is an adjustable parameter?

Subsection 10(1) of the Regulations defines an adjustable parameter as a device, system or element of design that is capable of being physically adjusted such that emissions during emission testing or normal in-use operation are affected. It does not include a device, system, or element of design that is permanently sealed by the manufacturer or that is inaccessible with the use of ordinary tools.

Engines, vessels or vehicles with adjustable parameters must comply with the applicable standards, regardless of the adjustment of these parameters. For example, if there is an adjustment screw on an engine carburetor, this engine must meet the exhaust emission standards regardless of the setting of the screw (i.e., whether it is fully, partially, or not tightened).

In the case of a vehicle with an adjustable air-fuel ratio parameter, compliance with the applicable emission standards is required if the range of air-fuel ratios is between the lean and rich air-fuel ratio limits, excluding any air-fuel ratios that do not occur during normal in-use operation of the vehicle, or if the range is established by the manufacturer based on particular engine parts. Subsections 10(4) and 10(5) of the Regulations define the lean and rich air-fuel ratio limits. Subsection 10(6) of the Regulations specifies that if carburetor jets and needles are used to define the range of adjustable air-fuel ratios, and if certain criteria are met, the manufacturer's jetting chart establishes the adjustable range for which compliance is required.

6.6 What are the exhaust emission standards?

Different exhaust emission standards exist for the different classes of engines and vehicles. The Regulations establish a maximum level of combined hydrocarbons and oxides of nitrogen ($HC+NO_x$), hydrocarbons (HC) and/or carbon monoxide (CO) emissions for each class of engine or vehicle. The Regulations also establish not-to-exceed exhaust emission standards, which are described in section 6.9 of this document.

The HC+NOx, HC and CO exhaust emission standards for engines and vehicles are aligned with those of the EPA and are set out in paragraphs 13(1)(*a*), 14(1)(*a*), 15(1)(*a*), 20(1)(*a*), 21(1)(*a*) and 22(1)(a), and subsections 21(2), 22(2) and 22(3), of the Regulations. The sections of the CFR that are incorporated by reference are indicated in those paragraphs of the Regulations. The standards are defined as mass of pollutant per unit of engine work, expressed in grams per kilowatt-hours (g/kW-hr) or in mass of pollutant per distance traveled (g/km). Table

2 and Table 3 provide a summary of the exhaust emission standards for marine engines and off-road recreational vehicles, respectively.

Table 2: Exhaust emission standards for marine engines

Maximum Engine Power (kW)	Emission Standards (g/kW-hr)		Maximum Allowable Family Emission Limits (g/kW-hr)	
	$HC+NO_x$	CO	$HC+NO_x$	CO
Outboards and Personal Watercraft Engines (2012 and later model years)				
$P \leq 4.3$	30.0		81.0	
$P > 4.3$	$2.1 + 0.09 \times (151 + 557/P^{0.9})$		$6.0 + 0.25 \times (151 + 557/P^{0.9})$	
$P \leq 40$		$500 - (5.0 \times P)$		$650 - (5.0 \times P)$
$P > 40$		300		450
Conventional Inboard Engines (2012 and later model years)				
$P \leq 373$	5.0	75.0	16.0	150
High-Performance Inboard Engines (2013 and later model years)				
$373 < P \leq 485$	16.0	350	n/a	n/a
$P > 485$	22.0	350	n/a	n/a

P: the maximum engine power rating for the emission family in kW as determined in accordance with CFR 1045.140.
n/a: fleet averaging not applicable for high-performance inboard engines.

Table 3: Exhaust emission standards for off-road recreational vehicles

Emission Standards			Maximum Allowable Family Emission Limits		
HC	$HC+NO_x$	CO	HC	$HC+NO_x$	CO
Snowmobiles (g/kW-hr) (2012 and later model years)[a]					
$[1-(HC_{std}/150)] \times 100 + [1-(CO_{std}/400)] \times 100 \geq 100$		$[1-(HC_{std}/150)] \times 100 + [1-(CO_{std}/400)] \times 100 \geq 100$	150		400
Off-Road Motorcycles (g/km) (2012 and later model years)[b]					
	2.0	25		20.0	50
All-Terrain Vehicles and Utility Vehicles (g/km) (2012 and later model years)[b]					
	1.5	35		20.0	n/a

[a] The HC and CO standards are based on the formula shown. The *company* selects the HC standard and CO standard so that the combined percent reduction from baseline emission levels is greater than or equal to 100 percent. The selected standard for HC may not exceed 75 g/kW-hr, and the selected standard for CO may not exceed 275 g/kW-hr. For further information, please consult CFR 1051.103(a)(2).

[b] Optional standards exist for off-road motorcycles, ATVs and UVs that have small displacement engines. See CFR 1051.615(b) and 1051.615(a). Temporary engine-based standards exist for each of the 2012 to 2014 model years for ATVs and UVs. See CFR 1051.145(b).

n/a: fleet averaging not applicable for CO emissions from ATVs and UVs

6.7 What are the evaporative emission standards?

Evaporative emission standards apply to snowmobiles, off-road motorcycles, ATVs and UVs, as stated in paragraphs 20(1)(*b*), 21(1)(*b*), and 22(1)(*b*) of the Regulations; and to outboards and vessels designed to be propelled by a marine engine in which fuel lines or fuel tanks are installed, as stated in section 19 of the Regulations. These standards are aligned with those of the EPA.

For off-road recreational vehicles, beginning in the 2012 model year the permeation emissions from non-metal fuel tanks must not exceed 1.5 grams per square metre per day (g/m^2/day) and the permeation emissions from non-metal fuel lines must not exceed 15 g/m^2/day.

For outboards and vessels designed to be propelled by a marine engine, in which fuel lines or fuel tanks are installed, the evaporative emission standards are summarized in Table 4.

Table 4: Evaporative emission standards[a] for 2015 and later model year outboards and vessels designed to be propelled by marine engines, in which fuel lines or fuel tanks are installed

	Emission Standards
Non-metal fuel line permeation	15 g/m^2/day
Non-metal fuel tank permeation	1.5 g/m^2/day when tested at 28°C 2.5 g/m^2/day when tested at 40°C
Non-metal fuel tank diurnal	0.40 g/gallon(gal)/day 0.16 g/gal/day when installed in non-trailerable boats

[a] Other standards exist for fuel caps, vents, carbon canisters, and refuelling. See CFR 1060.101(f)(1) and (3).

6.8 What are the crankcase emission standards?

The crankcase is the housing for the crankshaft and other related internal parts. For marine engines, the requirements outlined in paragraphs 13(1)(*c*), 14(1)(*c*) and 15(1)(*b*) of the Regulations incorporate by reference CFR 1045.115(a). For off-road recreational vehicles, the requirement outlined in paragraphs 20(1)(*c*), 21(1)(*c*) and 22(1)(*c*) of the Regulations incorporates by reference CFR 1051.115(a). The requirement states that crankcase emissions are not to be discharged directly into the atmosphere throughout the useful life of the engine or vehicle. The standard starts in the 2012 model year for outboards, personal watercraft engines and conventional inboard engines, and in the 2013 model year for high-performance inboard engines. The standard starts in the 2012 model year for all off-road recreational vehicles.

6.9 What are the not-to-exceed emission standards?

Not-to-exceed emission standards apply to outboards, personal watercraft engines and conventional inboard engines starting in the 2012 model year, as stated in paragraphs 13(1)(*b*) and 14(1)(*b*) of the Regulations. These standards are aligned with those of the EPA, and incorporate by reference CFR 1045.107. The not-to-exceed standard is determined by multiplying a factor set out in the CFR by the applicable exhaust emission standard or the

applicable FEL if fleet averaging is used to comply with the exhaust emission standards. *Companies* must ensure that exhaust emissions remain below the not-to-exceed standard across a range of expected operating conditions. See CFR 1045.107 for further details.

6.10 What are the engine diagnostic system requirements?

Section 16 of the Regulations specifies that a marine engine equipped with a three-way catalyst and closed-loop control of the air-fuel ratio must be equipped with a diagnostic system to detect malfunctions in the emission control system. This requirement is aligned with that of the EPA, and the Regulations incorporate by reference the applicable standards in CFR 1045.110.

6.11 What are the torque broadcasting system requirements?

Section 17 of the Regulations specifies that, starting with the 2013 model year, an electronically controlled marine engine must be equipped with a torque broadcasting system to broadcast speed and output shaft torque. This requirement is aligned with that of the EPA, and the Regulations incorporate by reference the applicable requirements in CFR 1045.115(b) and (c).

6.12 When do the emission standards begin to apply?

As summarized in Table 5, emission standards begin to apply in different years for the various classes of engines, vessels and vehicles, and emission types. Emission standards that start to apply to engines and vehicles in the 2012 model years apply only to those engines that are manufactured, and vehicles that have their main assembly completed, on or after April 5, 2011.

Table 5: Model year during which prescribed emission standards begin to apply

Class	Model Year	Emission Standard
Outboards and personal watercraft engines	2012	$HC+NO_x$, CO, crankcase, not-to-exceed
Outboards with installed fuel lines or fuel tanks	2015	Fuel line permeation, fuel tank permeation, diurnal
Conventional inboard engines	2012	$HC+NO_x$, CO, crankcase, not-to-exceed
High-performance inboard engines	2013	$HC+NO_x$, CO, crankcase
Snowmobiles	2012	HC, CO, fuel line permeation, fuel tank permeation, crankcase
Off-road motorcycles	2012	$HC+NO_x$, CO, fuel line permeation, fuel tank permeation, crankcase
ATVs and UVs	2012	$HC+NO_x$, CO, fuel line permeation, fuel tank permeation, crankcase
Vessels designed to be propelled by marine engines, with installed fuel lines and fuel	2015	Fuel line permeation, fuel tank permeation, diurnal

tanks		

6.13 For how long must an engine, vessel or vehicle conform to emission standards?

An engine, vessel or vehicle must conform to emission standards throughout its "useful life," which is specified in years, hours of operation, or accumulated mileage, whichever comes first. The useful life periods are incorporated by reference from the CFR and are found in CFR 1045.103(e) and 105(e), and CFR 1051.103(c), 105(c) and 107(c).

Table 6 summarizes the useful life for the different engine and vehicle classes in relation to exhaust emissions.

Table 6: Useful life[a] for marine engines and off-road recreational vehicles

Class	Engine Displacement (cm^3) or Engine Power (kW)	Years	Hours of Operation	Accumulated Mileage (km)
Outboard	All	10	350	n/a
Personal watercraft engine	All	5	350	n/a
Conventional inboard engine	≤ 373 kW	10	480	n/a
High-performance inboard engine	373 < kW ≤ 485	3	150	n/a
	> 485 kW	1	50	n/a
Snowmobile	All	5	400	8000
Off-road motorcycle	≤ 70 cm^3	5	n/a	5000
	> 70 cm^3	5	n/a	10 000
ATV and UV	< 100 cm^3	5	500	5000
	≥ 100 cm^3	5	1000	10 000

[a] Please consult CFR 1045.103(e) or 105(e), or CFR 1051.103(c), 105(c) or 107(c) for conditions under which a different useful life must be specified.
n/a: not applicable.

6.14 Are portable marine fuel tanks required to meet the regulations?

No. Portable marine fuel tanks manufactured in Canada or imported into Canada are not subject to the Regulations.

6.15 What standards are applicable to jet boat engines?

Jet boat engines are inboard engines, and, in general, the standards, maximum allowable FELs and useful life that apply to all other inboard engines also apply to jet boat engines.

Special provisions are applicable for jet boat engines that are also used in outboards or personal watercraft if they meet the criteria of CFR 1045.660(a) and (c), namely:

- the jet boat engines must be identical in all physical respects to the corresponding outboards or personal watercraft engines, but may differ slightly with respect to engine calibrations; and
- the jet boat engines must be in an engine family separate from the corresponding outboards or personal watercraft engines.

These special provisions are included to facilitate fleet averaging for these engines (see the information about the exception for jet boats in section 7.14.6 of this document). In this case,

the applicable standards are still those for inboard engines, but the maximum allowable FELs are the values of the HC+NO_X and CO **standards** for the corresponding outboards or personal watercraft engines, and the useful life is that of the corresponding outboards or personal watercraft engines. These special provisions are described in clause 11(1)(*d*)(i)(C) and subsection 14(3) of the Regulations, respectively.

6.16 What are the procedures to measure the exhaust and evaporative emissions?

Subsection 23(1) of the Regulations specifies that the standards in the Regulations that refer to the CFR include the associated test procedures, fuels and calculation methods of the CFR. The test procedures to measure exhaust and evaporative emissions from marine engines, vessels and off-road recreational vehicles are mainly referred to in Subpart F of CFR 1045, 1060 and 1051, respectively, with some test procedures located in other subparts and parts of the CFR.

6.17 What is an emission family, and is there a procedure that a *company* follows to group its engines into emission families?

An emission family is a group of engines, vessels or vehicles that are expected to have similar emission characteristics for the duration of their useful lives. The use of emission families allows *companies* to reduce the number of tests required to demonstrate conformity with emission standards.

In general, for exhaust emissions, engines or vehicles are grouped into families by taking into consideration aspects such as their combustion cycle, fuel, method of aspiration, presence and characteristics of catalytic converters, etc. For evaporative emissions, vehicles and vessels are grouped into families taking into consideration the characteristics of the fuel system components such as material, material additives, production methods, etc.

There are set procedures on how a *company* can group its products into emission families, as described in section 230 of CFRs 1045, 1051 and 1060.

7 OPTIONAL FLEET AVERAGING REGIME

7.1 Introduction to fleet averaging

The fleet averaging option is available for many types of emissions from marine engines and off-road recreational vehicles, and is consistent with similar programs established under the corresponding EPA rules.

This option provides flexibility to allow *companies* to manufacture or import engines and vehicles that emit more than otherwise allowed by the standards, as long as the increased emissions are offset, on a fleet basis, by engines or vehicles that emit less than allowed by the standards. Overall, the fleet emits less pollution than what would be allowed by the regulations if every engine or vehicle of that fleet conformed directly to the emissions standard. If this cannot be achieved directly by the fleet, it may be achieved by the use of credits previously obtained by the *company* or by the use of credits that have been transferred to the *company* from another *company*.

7.2 For which emission types and classes of engines and vehicles is fleet averaging available?

Fleet averaging is available as summarized in Table 7.

Table 7: Emission types and engine and vehicle classes for which fleet averaging is available

Class	Emission Types
Outboards and personal watercraft engines	$HC+NO_x$, CO
Conventional inboard engines	$HC+NO_x$, CO
Snowmobiles	HC, CO, fuel tank permeation
Off-road motorcycles	$HC+NO_x$, CO[a], fuel tank permeation
ATVs and UVs	$HC+NO_x$, fuel tank permeation

[a] Fleet averaging is not available for CO emissions from motorcycles that have small displacement engines of 70 cm^3 or less that conform to the standards under subsection 21(2) of the Regulations.

7.3 Who is required to comply with the fleet averaging requirements of the Regulations, including the requirements for end of model year reporting?

The fleet averaging regime is optional, and therefore the requirements only apply to a *company* who chooses to comply with the standards by using the option described in paragraph 11(1)(*d*) of the Regulations (i.e., the engines or vehicles conform to FELs in lieu of the standards and conform on the basis of fleet averaging). All *companies* must submit an end of model year report regardless of whether they choose to use fleet averaging. Environment Canada monitors compliance with fleet averaging of applicable marine engines and off-road recreational vehicles, and monitors the environmental performance of all engines, vessels and vehicles via the end of model year report, among other compliance monitoring methods.

7.4 What are the main steps for a *company* that uses fleet averaging?

If a *company* would like to use the fleet averaging provisions of the Regulations, it must:

- select the fleet averaging option of conformity (paragraph 11(1)(*d*) of the Regulations);
- establish fleets and emission families, and select appropriate FELs (paragraph 11(1)(*d*) and section 24 of the Regulations, and sections 7.5 to 7.10 of this document);
- for marine engines, calculate the family emission credits/deficits and the sum of these credits/deficits, to determine the fleet average emission credits/deficits (section 26 of the Regulations, and section 7.14 of this document);
- for recreational vehicles, calculate the fleet average emission values and fleet average emission credits/deficits (sections 29 and 30 of the Regulations, and section 7.15 of this document);
- use fleet average emission credits to offset deficits, and bank or transfer excess fleet average emission credits (section 27 of the Regulations and section 7.14 of this document for marine engines, and section 31 of the Regulations and section 7.15 of this document for off-road recreational vehicles);

- submit an end of model year report (section 33 of the Regulations, and section 8 of this document); and
- retain various associated records (section 36 of the Regulations, and section 9 of this document).

7.5 What classes of engines and vehicles can be grouped into fleets for the purpose of fleet averaging?

The following classes of engines and vehicles are to be grouped into separate fleets for the purposes of fleet averaging:

- outboards and personal watercraft engines;
- conventional inboard engines;
- snowmobiles;
- off-road motorcycles;
- UVs; and
- ATVs.

Note that a *company* may choose to group UVs and ATVs into a single fleet.

7.6 What is a family emission limit (FEL)?

As outlined in subsection 1(1) of the Regulations, a FEL means "the maximum emission level established by a *company* for an emission family for the purpose of fleet averaging."

Under paragraph 11(1)(*d*) of the Regulations, an engine or vehicle that is part of a fleet must conform to a FEL, which may be below or above the applicable standard (subject to a maximum limit) instead of conforming directly to the standard. The fleet must conform on the basis of fleet averaging.

7.7 How would a *company* determine the FEL of an engine or vehicle?

The FEL for an emission family is indicated on the EPA's certificate of conformity and the emission control information label. The manufacturer of the engine or vehicle usually establishes the FEL for the emission family. If no EPA certificate of conformity is available for the engine or vehicle, the *company* must establish the appropriate FEL, keeping in mind that the FEL becomes the upper limit of emissions that are permitted by the Regulations from any of the engines or vehicles in the family.

If a *company* has chosen to use the fleet averaging regime and an engine or vehicle in the *company*'s fleet is already certified by the EPA to an exhaust or evaporative emission standard and is not certified to a FEL, it is the *company*'s responsibility to establish the FEL for that engine or vehicle. The *company* may choose to use the value of the applicable standard as the FEL, or it may choose to establish a different FEL using the procedure referred to in section 7.8 of this document. If a *company* chooses to establish a FEL that is different from the emission standard or FEL listed on the EPA certificate of conformity, the EPA certificate of conformity for the engine or vehicle would then no longer be valid, and the *company* would be required to perform all testing and obtain and submit all necessary evidence of conformity in accordance with section 9.7.1 of this document.

7.8 Is there a procedure that a *company* must follow to establish FELs?

The engine or vehicle that is expected to have the highest emissions in an emission family is selected, and a factor is added to or multiplied by the emission rate to determine the FEL for that emission family. The emission rate of the product must be determined from tests conducted in accordance with the appropriate sections of the CFR. The factor used is typically determined from durability testing, and is intended to allow for a margin of error, similar to a safety factor, to ensure actual emissions are below the FEL.

7.9 Are all of a *company*'s marine engines and off-road recreational vehicles included in its fleets?

As indicated in section 24 of the Regulations, "fleet" refers to all of the marine engines and off-road recreational vehicles of a given model year that a *company* manufactures in Canada, or imports into Canada, for the purposes of sale in Canada to the first retail purchaser.

Also, subsection 24(4) of the Regulations specifies that a *company* has the option to exclude from its fleets its engines and vehicles that are covered by an EPA certificate and sold concurrently in Canada and the United States, if the total number of units sold in the United States exceeds the number of units sold in Canada. The consequences of this voluntary exclusion are set out in subsections 25(3) and 30(2) of the Regulations, and state that the *company* forfeits all previously obtained credits for that fleet and is not eligible to obtain any credits for that fleet in that model year.

7.10 Can engines and vehicles of the 2012 model year that were manufactured or assembled before the coming into force date of the Regulations be included in the fleets?

Yes. As stated in subsections 26(3) and 29(3) of the Regulations, a *company* may include, in the calculation of the family emission credits and deficits, all the engines of the 2012 model year that were manufactured and all the vehicles that had their main assembly completed prior to the coming into force date of the Regulations.

7.11 If a *company*'s engines or vehicles are certified to a FEL that is better than the applicable standard, can the *company* choose to not calculate the fleet average emission values, credits and deficits?

As stated in subsections 25(4) and 28(3) of the Regulations, a *company* may elect not to determine the fleet average emission credits or deficits for engines or the fleet average emission value for vehicles, for a given emission type and fleet in a model year, if **every** engine or vehicle in that fleet conforms to a FEL that is better than the applicable standard. In the case of engines, the fleet average emission credits will be deemed to be zero. In the case of vehicles, the fleet average emission value will be deemed to be equal to the applicable standard.

7.12 What happens to outstanding credits and deficits when a *company* acquires another *company* or when *companies* merge?

Subsection 32(1) of the Regulations provides that a *company* that acquires another *company*, or that results from the merger of *companies*, is responsible for offsetting any outstanding deficits from the acquired or merged *companies*.

7.13 What happens to outstanding deficits for a *company* that ceases to manufacture, import or sell vehicles or engines?

As required under subsection 32(2) of the Regulations, the *company* must, before submitting its last end of model year report, offset any outstanding emissions deficits.

7.14 Calculation of fleet average emission credits and deficits for marine engines

7.14.1 In general, how does a *company* use fleet averaging for marine engines?

Under the fleet averaging regime for marine engines, a *company* calculates its $HC+NO_x$ and CO exhaust "family emission credits or deficits" for each emission family in a given model year. Separate calculations are made in relation to the following fleets for the $HC+NO_x$ and CO exhaust emission types:

- outboards and personal watercraft engines; and
- conventional inboard engines.

The sum of these family emission credits or deficits within each fleet and emission type, referred to as "fleet average emission credits," must be greater than or equal to zero, otherwise the *company* incurs "fleet average emission deficits" that must be offset. The formula and methods of calculating the fleet average emission credits and deficits are set out in sections 26 and 27 of the Regulations, and are consistent with the methods set out in the corresponding EPA rule.

7.14.2 How are family emission credits and deficits for marine engines calculated?

The $HC+NO_x$ and CO exhaust family emission credits and deficits, in units of kg, are calculated using the following formula:

$$(S - L) \times N \times P \times U \times 0.207 \times 10^{-3}$$

where

S is the applicable exhaust emission standard, in g/kW-hr;

L is the FEL for the emission family, in g/kW-hr;

N is the number of engines in the emission family;

P is the maximum engine power for the emission family, in kW, determined in accordance with CFR 1045.140; and

U is the useful life for engines of that emission family, in hours.

A simple example calculation is presented in Appendix C.

7.14.3 Are there provisions respecting the procedures for rounding the calculated fleet average emission credits or deficits?

Yes. As specified in subsection 26(1) of the Regulations, the fleet average emission credits or deficits must be rounded to the nearest whole number of kg, and if the sum is equidistant between two whole numbers of kg, the sum is to be the higher of the two numbers.

7.14.4 When are fleet average emission credits obtained?

As specified in subsection 25(1) of the Regulations, fleet average emission credits for a specific model year are obtained when the result of the calculation for fleet average emission

credits is a positive number and when the *company* reports credits in its end of model year report.

7.14.5 How can a *company* use fleet average emission credits?

Fleet average emission credits obtained by a *company* may generally[4] be banked for use in subsequent model years by the *company*, or they may be transferred in subsequent model years to another *company*. Those credits can be used to offset deficits incurred in a future model year as long as the deficits being offset are for the same type of fleet, for the same emission type, and for the same standard expressed in the same units as the credits being used. Special exceptions exist for certain jet boat engines, as described below and in section 7.14.6 of this document.

If a *company* manufactures or imports a model of jet boat engine that is also used in its outboards or personal watercraft and that meets the criteria in CFR 1045.660(a) and (c), that *company* may bank excess family emission credits generated by outboards or personal watercraft engines in one of two ways: the excess credits may be banked separately from other emission families of outboards or personal watercraft engines, if they will be used against future deficits for the corresponding model of jet boat conventional inboard engines; or, the excess credits may be banked together with excess credits of other families of outboards and personal watercraft engines, if they will be used against future deficits for a fleet of outboards and personal watercraft engines. Credits banked in the latter manner will no longer be available for use against a future deficit for the corresponding jet boat engine model.

7.14.6 How can a *company* offset fleet average emission deficits?

As described in subsections 27(1) and 27(2) of the Regulations, fleet average emission deficits must be offset by using an equivalent number of fleet average emission credits earned by the *company* in previous model years, and/or by obtaining sufficient credits from another *company* by means of a transfer. Except as specified in subsection 27(4) of the Regulations, the credits being used must be for the same type of fleet, the same emission type, and the same standard, expressed in the same units as the deficits being offset.

The exception specified in subsection 27(4) of the Regulations is that, during a given model year, a *company* that manufactures or imports a model of jet boat engine that is also used in an outboard or personal watercraft and that meets the criteria in CFR 1045.660(a) and (c) may offset fleet average emission deficits generated by the jet boat engine with fleet average emission credits generated by those outboards or personal watercraft engines. The fleet average emission credits generated by outboards or personal watercraft engines being used to offset a *company's* fleet average emission deficit for jet boats cannot be transferred from another *company*.

Also, subsection 27(5) of the Regulations specifies that any remaining CO exhaust fleet average emission credits for a fleet of outboards and personal watercraft engines are cancelled upon receipt of the end of model year report.

[4] As described in subsection 27(5) of the Regulations, fleet average emission credits calculated for CO emissions from a fleet of outboards or personal watercraft engines may not be banked for use in a subsequent model year. Such credits are immediately cancelled upon receipt of the end of model year report.

7.14.7 Is there a deadline by which a *company* is required to offset fleet average emission deficits?

As set out in subsection 27(3) of the Regulations, any fleet average emission deficits must be offset by a *company* within a certain timeline, as follows:

- for a 2012 model year fleet, a *company* has to offset its deficits no later than the day on which its 2014 end of model year report is submitted; and
- in the case of a fleet of 2013 and later model years, the *company* must offset any deficits no later than the day on which the end of model year report is submitted for that model year.

7.15 Calculation of fleet average emission values and fleet average emission credits and deficits for off-road recreational vehicles

7.15.1 In general, how does a *company* use fleet averaging for off-road recreational vehicles?

Under the fleet averaging regime for off-road recreational vehicles, a *company* calculates its "fleet average emission value" for each type of emission (i.e., HC, HC+NO_x, and CO exhaust and fuel tank permeation emissions, as applicable) in each model year. Separate calculations are made for a *company*'s fleets of snowmobiles, off-road motorcycles, ATVs and UVs. ATVs and UVs may be combined into one fleet at the option of the *company*. If the fleet average emission value is less than the applicable standard, the *company* generates credits; if not, it incurs deficits that must be offset. The formulas and methods of calculating the fleet average emission values and fleet average emission credits are set out in sections 29 and 30 of the Regulations, and are consistent with those set out in the corresponding EPA rule.

7.15.2 How is a fleet average emission value for off-road recreational vehicles calculated?

As outlined in section 29 of the Regulations, the fleet average emission value is calculated in accordance with the formula indicated below. As specified in subsection 29(1) of the Regulations, the fleet average emission value must be expressed to one decimal place and expressed in the same units as the applicable standard set out in sections 20 to 22. A simple example calculation is presented in Appendix C to show how to use the formula.

In the case of exhaust emissions, the fleet average emission value is calculated using the following:

$$\left[\sum_{i=1}^{TOT}(W_i \times Y_i \times Z_i)\right] \div \left[\sum_{i=1}^{TOT}(Y_i \times Z_i)\right]$$

where:

TOT is the number of emission families in the fleet;

i is the i^{th} emission family in the fleet, where "i" goes from 1 to TOT;

$\mathbf{W_i}$ is the FEL corresponding to emission family "i";

$\mathbf{Y_i}$ is the number of vehicles in emission family "i"; and

$\mathbf{Z_i}$ is determined as follows for each individual fleet of vehicles:

- for snowmobiles, $\mathbf{Z_i}$ is the useful life (km) for emission family "i", multiplied by the maximum power output (kW) observed during the emissions test, divided by 30 km/h;
- for off-road motorcycles, $\mathbf{Z_i}$ is the useful life (km) for emission family "i"; and
- for ATVs or UVs:
  - for those vehicles that must conform to a FEL expressed in g/km, Z_i is the useful life (km) of emission family "i"; or
  - for those vehicles that must conform to a FEL expressed in g/kW-h, Z_i is the useful life (km) for emission family "i", multiplied by the maximum power output (kW) observed during the test and divided by 30 km/h.

In the case of vehicles that conform to a FEL expressed in g/kW-h (i.e., those vehicles that conform to CFR 1051.145(b) or CFR 1051.615(a) or (b)), and vehicles of a class that have more than one applicable standard for a specific emission type, the *company* must determine a separate fleet average emission value for those vehicles in respect of each applicable standard and emission type.

In the case of evaporative emissions, the fleet average emission value is calculated using the following:

$$\left[\sum_{i=1}^{TOT}(W_i \times Y_i \times Z_i)\right] \div \left[\sum_{i=1}^{TOT}(Y_i \times Z_i)\right]$$

where:

TOT is the number of emission families in the fleet;

i is the i^{th} emission family in the fleet, where "i" goes from 1 to TOT;

$\mathbf{W_i}$ is the FEL corresponding to emission family "i";

$\mathbf{Y_i}$ is the number of vehicles in emission family "i" multiplied by the average internal surface area of the vehicles' fuel tanks (m^2); and

$\mathbf{Z_i}$ is the useful life of the emission family "i" expressed in years, multiplied by 365.24 days/year.

7.15.3 What are fleet average emission credits and deficits?

A *company*'s fleet average emission value may be at, below or above the applicable emission standard in any given model year for a specific fleet of vehicles. Fleet average emission credits are obtained when a *company*'s fleet average emission value, in respect of a given emission type, for a given model year and a given fleet, is lower than the applicable emission standard. Similarly, fleet average emission deficits are obtained when the fleet average emission value is higher than the emission standard.

7.15.4 How are fleet average emission credits and deficits calculated for off-road recreational vehicles?

As set out in subsection 30(3) of the Regulations, the formula indicated below, expressed in grams and rounded to one decimal place, is used to calculate emission credits and deficits. If, for a given model year, the number obtained from the formula is positive, the *company* will be eligible to obtain emission credits, whereas a negative number indicates emission deficits. A zero value indicates that the *company* will obtain neither credits nor deficits.

In the case of exhaust emissions, the fleet average emission credits and deficits are calculated using the following:

$$(A - B) \times \left[\sum_{i=1}^{TOT} (Y_i \times Z_i) \right]$$

where:

A is the applicable standard in relation to that emission type and for that model year;

B is the fleet average emission value in relation to that emission type and for that model year as calculated in section 29 of the Regulations;

TOT represents the total number of emission families in the fleet;

i is the i^{th} emission family in the fleet, where "i" goes from 1 to TOT;

$\mathbf{Y_i}$ is the number of vehicles in emission family "i"; and

$\mathbf{Z_i}$ is the useful life applicable to emission family "i" as described for $\mathbf{Z_i}$ in the formula set out in subsection 29(1) of the Regulations.

As with the calculation of fleet average emission values, for those vehicles that conform to a FEL expressed in g/kW-h, calculations are to be performed separately from vehicles that conform to a FEL expressed in g/km. Similarly, calculations are to be performed separately for vehicles of a class that have more than one applicable standard for a specific emission type.

In the case of evaporative emissions, the fleet average emission credits and deficits are calculated using the following:

$$(A - B) \times \left[\sum_{i=1}^{TOT} (Y_i \times Z_i) \right]$$

where

A is the applicable standard in relation to that emission type and for that model year;

B is the fleet average emission value in relation to that emission type and for that model year as calculated in section 29 of the Regulations;

TOT represents the total number of emission families in the fleet;

i is the i^{th} emission family in the fleet, where "i" goes from 1 to TOT;

$\mathbf{Y_i}$ is the number of vehicles in emission family "i" multiplied by the average internal surface area (m^2) of the vehicles' fuel tanks; and

$\mathbf{Z_i}$ is the useful life applicable to emission family "i" as described for $\mathbf{Z_i}$ in the formula set out in subsection 29(1) of the Regulations.

7.15.5 Are there provisions respecting the procedures for rounding the calculated fleet average emission credits or deficits?

Yes. As specified in subsection 30(4) of the Regulations, if the calculation of fleet average emission credits or deficits results in a fraction, the fraction is to be expressed in decimal form and rounded to one decimal place. The digit in the first decimal place must be increased by one if the digit in the second decimal place is 5 or more.

7.15.6 When are fleet average emission credits obtained?

As specified in subsection 30(1) of the Regulations, fleet average emission credits for a specific model year are obtained when the fleet average emission value is less than the applicable standard and when the *company* reports credits in its end of model year report.

7.15.7 How can a *company* use fleet average emission credits?

Fleet average emission credits obtained by a *company* may be banked for use in subsequent model years by the *company* or may be transferred to another *company*. Those credits can be used to offset deficits incurred in a future model year, if the deficits being offset are for the same type of fleet, the same emission type and the same standard, expressed in the same units as the credits being used.

7.15.8 How can a *company* offset fleet average emission deficits?

Subsection 31(2) of the Regulations provides that deficits can be offset with an equivalent number of fleet average emission credits obtained by the *company* in previous model years, or by obtaining sufficient credits from another *company* by means of a transfer. The credits must be in respect of the same type of fleet, the same emission type and the same standard, expressed in the same units.

7.15.9 Is there a deadline by which a *company* is required to offset fleet average emission deficits?

Yes. As set out in subsection 31(4) of the Regulations for off-road vehicles, any fleet average emission deficits must be offset by a *company* within a certain timeline, as follows:

- In the case of a fleet of the 2012 model year and in relation to exhaust and fuel tank permeation emissions, the *company* must offset its deficits no later than the day on which the *company* submits its 2014 end of model year report.
- In the case of a fleet of 2013 and later model years, the *company* must offset its deficits in relation to exhaust and fuel tank permeation emissions no later than the day on which the *company* submits its end of model year report for that model year.

8 END OF MODEL YEAR REPORT

The Regulations require each *company* to submit to Environment Canada an end of model year report that contains detailed information concerning the *company's* engines, vessels and vehicles for each model year.

8.1 Is there a deadline for *companies* to submit an end of model year report?

Yes. Under subsection 33(1) of the Regulations, all *companies* must submit an end of model year report no later than June 1 of the calendar year after the year that corresponds to the model year. For example, an end of model year report for the 2012 model year must be submitted no later than June 1, 2013.

8.2 To whom should the end of model year reports be submitted?

Subsection 33(1) of the Regulations indicates that end of model year reports are to be submitted to the Minister of the Environment. Section 2.5 of this document explains that the Director of the Transportation Division administers the Regulations on behalf of the Minister. Accordingly, end of model year reports should be submitted to:

Director, Transportation Division

Energy and Transportation Directorate
Environment Canada
351 Saint-Joseph Boulevard
Gatineau, Quebec K1A 0H3

8.3 What information must be included in the end of model year report?

The end of model year report must contain detailed information concerning a *company*'s engines, vessels and vehicles for each model year. The required information is set out in section 33 of the Regulations. Appendices A and B of this document contain a sample cover letter and a template containing the required information, and explanatory notes to assist a *company* in its preparation of the report.

8.4 Who is required to sign the *company*'s end of model year report?

The end of model year report must be signed by a person who is authorized to act on behalf of the *company*, as required by subsection 33(1) of the Regulations.

8.5 Do end of model year reports have to be submitted in a specific format?

No. The Regulations do not specify a mandatory format for end of model year reports. *Companies* can submit the reports in a form that is convenient, provided that the reports contain all of the information required under the Regulations.

8.6 Is there a recommended template for the end of model year reports?

Yes. Environment Canada has developed a recommended template for the preparation of end of model year reports, intended to facilitate the preparation and review of such reports. The template consists of:

- a sample cover letter (presented in Appendix A); and
- a recommended format for the report (presented in Appendix B).

Companies are not obligated to use the template, but may choose to do so or use it as a guide in the preparation of their own version of end of model year reports.

9 EVIDENCE OF CONFORMITY AND RECORDS

Section 35 of the Regulations describes the evidence of conformity required for engines, vessels and vehicles. Section 36 of the Regulations identifies additional records and establishes requirements for the maintenance and retention of the evidence of conformity and the other records.

9.1 What is the evidence of conformity for engines or vehicles referred to in paragraph 11(1)(*b*) or vessels or outboards referred to in paragraph 11(1)(*c*) of the Regulations?

For engines or vehicles referred to in paragraph 11(1)(*b*) or vessels or outboards referred to in paragraph 11(1)(*c*) of the Regulations (i.e., covered by one or more EPA certificates of conformity and sold concurrently in Canada and the United States), the evidence of conformity is the following:

- a copy of the EPA certificates of conformity covering the engine, the vehicle, or the fuel lines and fuel tanks installed in the vessel or outboard;

- a document demonstrating that the engine, vessel or vehicle is sold concurrently in Canada and the United States (see section 9.3 of this document);
- a copy of the records submitted to the EPA in support of the application, and any amended application, for the issuance of those EPA certificates; and
- the EPA emission control information label affixed to the engine, vessel or vehicle.

9.2 What is the evidence of conformity for engines, vessels or vehicles referred to in paragraph 11(1)(*a*) or engines or vehicles referred to in paragraph 11(1)(*d*) of the Regulations?

For engines, vessels or vehicles referred to in paragraph 11(1)(*a*) or engines or vehicles referred to in paragraph 11(1)(*d*), subsection 35(2) specifies that the evidence of conformity must be obtained and produced by the *company* in a form and manner that is satisfactory to the Minister. Please refer to section 9.7 of this document for guidance on evidence of conformity for these products.

9.3 What records could satisfy the requirement of demonstrating that an engine, vessel or vehicle is sold concurrently in Canada and the United States?

Paragraph 35(1)(*b*) of the Regulations requires a document demonstrating that an engine, vessel or vehicle covered by an EPA certificate is sold concurrently in Canada and the United States. Examples of the required evidence include:

- a copy of an invoice for the sale of an engine, vessel or vehicle to a person in the United States; or
- other evidence sufficient to demonstrate concurrent sales of engines, vessels or vehicles in the United States and Canada.

9.4 What other records must a *company* maintain?

In addition to the evidence of conformity (referred to in section 35 of the Regulations) that a *company* is required to maintain, a *company* must also maintain the following:

- the end of model year report;
- for each engine and vehicle of each of a *company*'s fleets:
    - the model and emission family;
    - the name and civil address of the plant where the engine or vehicle was manufactured;
    - the engine or vehicle identification number;
    - the FEL to which the engine or vehicle conforms;
    - the name and civil address, or mailing address, of the first retail purchaser of the engine or vehicle in Canada; and
    - for a *company* that uses the voluntary exclusion in subsection 24(4) of the Regulations, a document that demonstrates that the number of engines or vehicles sold in the United States during a given period that are covered by an EPA certificate exceeds the number of those engines or vehicles sold in Canada during that period that are covered by the same EPA certificate.

- the number of engines or vehicles imported if the *company* imports less than 100 engines or vehicles in a given model year and uses the provisions of subsection 33(4); and
- if records are retained on the *company*'s behalf, the name and civic address and, if different, the mailing address of the person who retains the records.

9.5 How long must a *company* retain evidence of conformity and other records?

Under section 36 of the Regulations, a *company* must maintain and retain evidence of conformity referred to in subsections 35(1) and (2) for a period of eight years after the manufacture of an engine is complete or the main assembly of the vessel or vehicle is complete.

A copy of the end of model year report referred to in paragraph 36(1)(*a*) must be kept for eight years after the end of the model year. The records referred to in paragraph 36(1)(*c*) relating to every engine and vehicle of a *company*'s fleets must also be kept for eight years after the end of the model year.

A *company* that imports less than 100 engines or vehicles in a given model year, and that uses the provisions of subsection 33(4), must keep a record of the number of engines or vehicles imported for a period of eight years after the model year.

9.6 When must the evidence of conformity and other records be submitted?

For engines, vessels or vehicles referred to in paragraph 11(1)(*a*) of the Regulations or engines or vehicles referred to in paragraph 11(1)(*d*) of the Regulations, subsection 35(3) requires that the *company* submit the evidence of conformity referred to in subsection 35(2) to the Minister prior to importing the engine, vessel or vehicle, or prior to affixing the national emissions mark in the case of engines, vessels and vehicles that have their manufacturing or assembly completed in Canada. Alternatively, under subsection 153(2) of CEPA 1999, a *company* may submit the evidence of conformity before the engine, vessel or vehicle leaves possession or control of the *company* and in the case of a vehicle before it is presented for registration under the laws of a province or Aboriginal government. A *company* choosing to submit the evidence of conformity in this manner must submit to the Minister a declaration, under section 39 of the Regulations, prior to importation (see section 12.4 of this document).

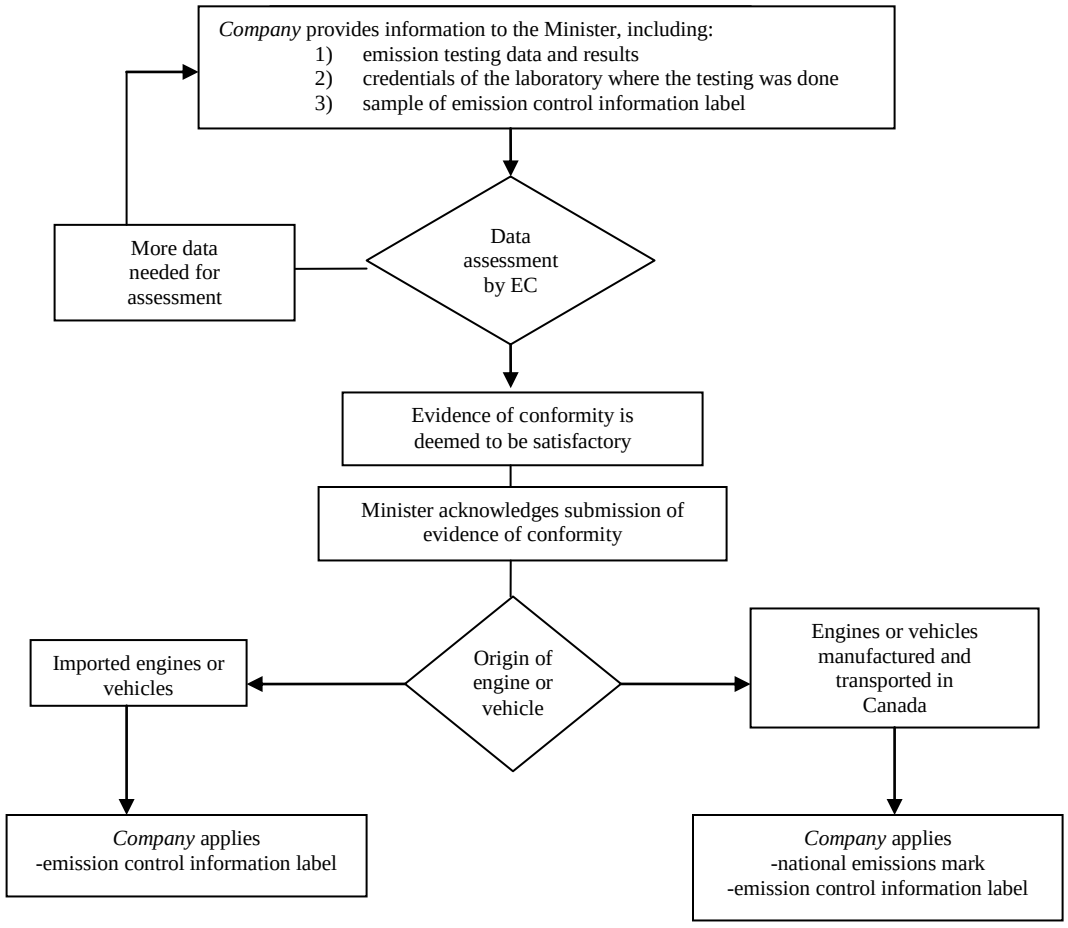
For engines or vehicles referred to in paragraph 11(1)(*b*) or vessels or outboards referred to in paragraph 11(1)(*c*) of the Regulations, subsection 36(3) requires the *company* to provide the evidence of conformity referred to in subsection 35(1) upon written request by the Minister. The evidence of conformity must be provided in either official language within 40 days after the request is made to the *company*. If the evidence of conformity must be translated from a language other than French or English, the *company* has 60 days to provide the evidence.

9.7 What is the procedure to provide evidence of conformity "in a form and manner satisfactory to the Minister" for the engines, vessels or vehicles referred to in subsection 35(2) of the Regulations?

9.7.1 General procedure for providing evidence of conformity for engines, vessels and vehicles referred to in subsection 35(2) of the Regulations

Subsection 35(2) of the Regulations states that evidence of conformity must be obtained and produced in a form and manner satisfactory to the Minister for engines, vessels or vehicles referred to in paragraph 11(1)(*a*) or engines or vehicles referred to in paragraph 11(1)(*d*). Figure

9 illustrates the general procedure to provide evidence of conformity “in a form and manner satisfactory to the Minister.”



Note: *Company* must be authorized to apply the national emissions mark

Figure 9: Sample procedure for engines, vessels or vehicles referred to in paragraph 11(1)(*a*) or engines or vehicles referred to in paragraph 11(1)(*d*)

The evidence of conformity submission must contain an original letter signed by an authorized officer of the *company* and contain an unconditional statement of compliance with the *Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations*. Submissions or questions related to this provision should be sent to Emission-Verification@ec.gc.ca.

Companies must obtain and produce evidence of conformity that is comparable to that specified in paragraphs 35(1)(*c*) and (*d*) (i.e., evidence of conformity comparable to information specified in the following sections of the CFR: 1045.205 for marine engines, 1060.205 for

vessels and outboards of the 2015 and later model years with installed fuel lines or fuel tanks, and 1051.205 for recreational vehicles). A *company* must therefore obtain and produce the following evidence:

- results of the emissions testing of the engine, vessel or vehicle obtained using the applicable procedures set out in the CFR;
- data required to repeat this testing (i.e., information specified in CFR 1045.205, 1060.205 and 1051.205);
- credentials of the laboratory where the testing was performed, in particular its experience in obtaining test results used in support of certification by the EPA; and
- a sample of an emission control information label.

Test results and data required to repeat the testing may be presented in the same format used when applying to the EPA for a certificate of conformity.

Under the Regulations, an emission control information label must be affixed in the location specified in paragraph 35(1)(*d*) of the Regulations. The label must include:

- a statement of compliance, such as “This engine conforms to all applicable standards under the Canadian *Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations* for [XXXX] model year” or the national emissions mark if the *company* has been authorized to affix it; and
- the name of the *company*, the model year, the date of manufacture, and sufficient information to identify the engine, vessel or vehicle as belonging to an emission family for which the evidence of conformity has been assessed to be satisfactory. The date of manufacture may be omitted if it is stamped or engraved elsewhere on the engine, vessel or vehicle.

On the label, a *company* may use the code system shown in Table 8 instead of providing in full the information listed under the second point indicated above. This code is based on the engine family identification developed by the EPA.

Table 8: Identification code for engines, vessels[5] or vehicles

Number of characters	Columns	Description
1	1	**Model year.** Model year 2012 identified by the letter "C," model year 2013 as "D," etc., excluding the letters I, O, Q, U, W, X and Z.
3	2–4	**Code identifying the *company***. A *company* may use: a) the *company* authorization number assigned by the Minister if authorized to affix the national emissions mark; b) the character sequence used by the EPA to identify the *company*, if applicable; or c) if the *company* cannot use a) or b), a sequence of three characters subject to approval by Environment Canada.
1	5	**Industry sector code**. M: marine spark-ignition engines and vessels X: off-road motorcycles, ATVs, and UVs Y: snowmobiles
4	6–9	**Engine displacement**. Engine displacement in litres for snowmobiles, in litres or cubic inches for marine spark-ignition engines, and in litres or cubic centimetres for off-road motorcycles, ATVs and UVs. Litres are to be expressed as XX.X or .XXX (e.g., 05.7, where a leading zero and the decimal point each count as a character in the four character spaces allotted to engine displacement). Cubic inches and cubic centimetres are to be expressed as XXXX (e.g., 0350, 0097). In all cases, the displacement will be read in litres if a decimal point is entered, and in cubic inches or cubic centimetres if there is no decimal point.
3	10–12	**Sequence characters**. Use any combination of characters to provide a unique identification for the engine family name.

9.7.2 Alternate requirements for evidence of conformity for engines, vessels or vehicles covered by valid EPA certificates

Several compliance options are available under the Regulations. Under some circumstances, *companies* can demonstrate compliance with the standards by using the options referred to in paragraphs 11(1)(*a*) or (*d*) of the Regulations, even though the products are covered by valid EPA certificates.

Although all engines, vessels or vehicles described in Table 9 must follow the procedure specified in section 9.7.1 of this document, the evidence of conformity described in that section may be replaced by the evidence of conformity summarized in Table 9. For engines, vessels or vehicles described in the first row of Table 9, no additional labels have to be applied if these products are already labelled in accordance with the specifications of the EPA.

[5] The identification code for evaporative emission families is available in an EPA compliance guidance letter issued in 2007 entitled "2007-03: EPA Standardized Naming Conventions for Model Year 2009 and Later Engine Family and Test Group Names, Evaporative/Refueling Family Names, and Permeation Family Names," available at http://www.epa.gov/otaq/cert/dearmfr/dearmfr.htm.

Table 9: Evidence of conformity for certain engines, vessels and vehicles referred to in subsection 35(2) of the Regulations

Product description	Required Evidence of Conformity
The engine, vessel or vehicle is EPA-certified* and sold concurrently (eligible for compliance via paragraph 11(1)(*b*) or (*c*)); however, the *company* selects a different compliance option (either paragraph 11(1)(*a*) or (*d*) if applicable). *Note that if a *company* wishes to use a different standard or FEL than that listed on the EPA certificate, then the EPA certificate is no longer valid, and full evidence of conformity must be submitted to Environment Canada as is the case for any other product that is not covered by an EPA certificate and sold concurrently in Canada and the United States. In this case, please refer to section 9.7.1 of this document for the required evidence of conformity.	The evidence of conformity specified in subsection 35(1) of the Regulations could be requested at a later date. Therefore, the *company* must be able to produce this material upon request.
Vessels or outboards that are not sold concurrently in Canada and the United States but that use **only** EPA-certified fuel system components that are sold concurrently in Canada and the United States. These vessels or outboards must comply with the standards by the option described in paragraph 11(1)(*a*) of the Regulations. Note that fuel tanks that have been certified by the EPA using the Averaging, Banking and Trading provisions available to vessel or outboard manufacturers in the United States may not be included in any vessel or outboard complying by the option described in paragraph 11(1)(a) unless the FEL is at or below the applicable standard.	Prior to the product leaving the possession of the *company*, or prior to importation for imported products, submit: • the vessel or outboard make and model; • the part numbers and make and model of all fuel system components, along with a copy of the applicable EPA certificates; and • the unconditional statement of compliance described in section 9.7.1 of this document. As with products actually complying by paragraph 11(1)(*b*) or (*c*), the evidence of conformity specified in subsection 35(1) of the Regulations could be requested at a later date. Therefore, the *company* must be able to produce this material upon request.
Vessels or outboards that are not sold concurrently in Canada and the United States, that use EPA-certified fuel system components which are sold concurrently in Canada and the United States, but that contain **at least one** component that is not certified by the EPA. These vessels or outboards must comply with the standards by the option described in paragraph 11(1)(*a*) of the Regulations.	Prior to the product leaving the possession of the *company*, or prior to importation for imported products, submit: • the vessel or outboard make and model; • for all fuel system components that are covered by an EPA certificate and sold concurrently in Canada and the United States, the part numbers and make and

Note that fuel tanks that have been certified by the EPA using the Averaging, Banking and Trading provisions available to vessel or outboard manufacturers in the United States may not be included in any vessel or outboard complying by the option described in paragraph 11(1)(*a*) unless the FEL is at or below the applicable standard.	model of the components, along with a copy of the applicable EPA certificates; • for all other fuel system components, the part numbers and make and model of the components, along with all the evidence of conformity specified in section 9.7.1 of this document; and • the unconditional statement of compliance described in section 9.7.1 of this document. As with products actually complying by paragraph 11(1)(*b*) or (*c*), the evidence of conformity specified in subsection 35(1) of the Regulations could be requested at a later date for those fuel system components that are covered by an EPA certificate and sold concurrently in Canada and the United States. Therefore, the *company* must be able to produce this material upon request.

10 IMPORTING AN ENGINE, VESSEL OR VEHICLE

Only engines, vessels or vehicles that comply with the Regulations are eligible for importation. Under section 37 of the Regulations, any person importing an engine, vessel or vehicle must submit a signed declaration to the Minister prior to importing the engine, vessel or vehicle. Subsection 37(2) of the Regulations provides that persons who are not *companies* under CEPA 1999, and who import at most 10 of any combination of engines, vessels and vehicles, are not required to submit the declaration referred to in subsection 37(1) of the Regulations.

10.1 What information must be provided in the importations declaration?

Subsection 37(1) of the Regulations sets out the information that must be included in the importation declaration. This declaration must contain the following:

- the importer's name and civic address and, if different, their mailing address;
- the manufacturer's name, the number of engines, vessels or vehicles being imported, and the applicable make, model, model year and class of each of those engines, vessels and vehicles; and
- the day on which the engine, vessel or vehicle is expected to be imported.

Under paragraph 37(1)(*d*) of the Regulations, if the importer is a *company*, the declaration must also include the following:

- the business number assigned to the *company* by the Minister of National Revenue; and
- a statement that:
    - each of the engines, vessels or vehicles bear the national emissions mark; or

- the *company* is able to produce the evidence of conformity referred to in subsection 35(1) or has produced the evidence of conformity in accordance with subsection 35(2) of the Regulations.

Under paragraph 37(1)(*e*) of the Regulations, if the importer is not a *company*, the declaration must also include one of the following two statements:

1) A statement that the engine, vessel or vehicle bears one of the following three labels:
   - the national emissions mark;
   - the emission control information label referred to in paragraph 35(1)(*d*), which indicates one of the following three situations:
     - (I) the engine conformed to the emission standards of the EPA in effect at the time that the manufacture of the engine was completed;
     - (II) the fuel lines and fuel tanks installed in the vessel or of the outboard conformed to the emission standards of the EPA in effect at the time of the completion of its main assembly;
     - (III) the vehicle conformed to the emission standards of the EPA in effect at the time of the completion of its main assembly;
   - a label indicating that the engine conformed to the emission standards of the California Air Resources Board (CARB) in effect at the time of its manufacture, or that the vehicle conformed to the emission standards of CARB in effect at the time of the completion of its main assembly.
2) A statement from the manufacturer or its authorized representative that:
   - the engine conformed to the standards set out in the Regulations or the EPA or CARB standards referred to above at the time the manufacture of the engine was completed;
   - the fuel lines and fuel tanks installed in the vessel or outboard conformed to the standards set out in the Regulations, or to the EPA standards referred to above, at the time that the main assembly of the vessel or the manufacture of the outboard was completed; or
   - the vehicle conformed to the standards set out in the Regulations or to the EPA standards referred to above, at the time that the main assembly of the vehicle was completed.

10.2 Is there a special form for the importation declaration specified in section 37 of the Regulations?

The Regulations set out the information that must be contained in the declaration and do not prescribe a special form. The information contained in the declaration can be provided in any format, as long as the prescribed information is included in a signed declaration that is submitted to the Minister prior to importation. In addition, *companies* may wish to take note of the following:

- A recommended importation declaration form is available to download from the CEPA Registry website at http://www.ec.gc.ca/lcpe-cepa/eng/regulations/detailReg.cfm?intReg=109.

- If the information provided on the commercial invoice required at importation otherwise corresponds to the requirements of the Regulations, a *company* may add the statement of conformity required under subparagraph 37(1)(*d*)(ii) of the Regulations to their commercial invoice.
- If eligible, a *company* may provide the bulk declaration referred to in subsection 37(3) of the Regulations and section 10.6 of this document.
- A person may submit the declaration as a separate document in a format that they choose, if all information requirements for importation are met.

10.3 What is the business number required in subparagraph 37(1)(*d*)(i) of the Regulations?

The business number is assigned by the Canada Revenue Agency to uniquely identify business entities, and must be provided on customs documents. It is part of a numbering system that simplifies and streamlines the manner in which businesses deal with the federal government.

Further information on business numbers is available at http://www.cra-arc.gc.ca/tx/bsnss/tpcs/bn-ne/menu-eng.html.

10.4 Is there any suggested wording for the statement under subparagraph 37(1)(*d*)(ii) of the Regulations?

Subparagraph 37(1)(*d*)(ii) of the Regulations requires that a *company* submit a statement indicating that each of the engines, vessels or vehicles bears the national emissions mark, or that the *company* is able to produce the evidence of conformity referred to in subsection 35(1) or has produced the evidence of conformity in accordance with subsection 35(2).

For a statement referring to the evidence of conformity of subsection 35(1), a *company* may use wording such as “The *company* is able to produce evidence of conformity under the Canadian *Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations*.” For a statement referring to the evidence of conformity of subsection 35(2), a *company* may use wording such as “The *company* has submitted the evidence of conformity indicating that all engines, vessels and vehicles in this shipment conform to the Canadian *Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations*.” A statement such as “All engines, vessels and vehicles in this shipment conform to the Canadian *Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations*” is also acceptable.

10.5 Who is eligible to sign the import declaration as the “duly authorized representative” of the *company*?

“Duly authorized representative” means a person with written authority to act on behalf of the *company*. An authorized employee of the *company* or a separate commercial entity under contract with the *company*, such as a customs broker, can sign documents as the duly authorized representative of the *company*.

10.6 What is the procedure to provide bulk declarations of imported engines, vessels or vehicles in a "form and manner satisfactory to the Minister," as referred to in subsection 37(3)?

Subsection 37(3) of the Regulations specifies that any *company* that imports at least 500 of any combination of marine engines, vessels or off-road recreational vehicles in a calendar year may provide the importation information required under subsection 37(1) "in a form and manner that is satisfactory to the Minister."

It may be convenient for a *company* to choose to submit bulk declaration reports to Environment Canada. If choosing this option, a *company* must send a notice to the Director of the Transportation Division (see section 2.5 of this document) to inform Environment Canada of its intention to use bulk declarations.

The notice must contain the following information:

- *company* name;
- business number;
- classes of engines, vessels or vehicles to be imported into Canada, as well as the applicable models;
- estimated annual quantity of engines, vessels or vehicles to be imported into Canada;
- estimated frequency of importations (e.g., 1 shipment/year, 1 shipment/month) and estimated period of importation for each class of engines, vessels or vehicles (e.g., January to May, April to September, or throughout the year); and
- desired frequency of bulk declarations.

A *company* that has received acknowledgement from Environment Canada indicating that bulk declarations are appropriate may then submit reports at the frequency stated in the acknowledgement.

There is no specified printed form for the bulk declarations. Subsection 37(1) of the Regulations specifies the required information.

11 OTHER OBLIGATIONS

11.1 Engine, vessel or vehicle identification number

Section 8 of the Regulations requires that each marine engine, vessel and off-road recreational vehicle has a unique identification number. The engine, vessel or vehicle identification number can be engraved or stamped on the engine, vessel or vehicle, or included on a label that meets the requirements in subsections 7(3) and (4) of the Regulations. This engine, vessel or vehicle identification number should not be confused with the *company* authorization number that is assigned by the Minister to a *company* in relation to the national emissions mark, as required by sections 6 and 7 of the Regulations and described in section 5 of this document.

11.2 Obligation to provide emission-related maintenance instructions

Under section 34 of the Regulations, a *company* must ensure that written instructions for emission-related maintenance are provided to the first retail purchaser of every engine, vessel or vehicle. The content of the written instructions should be consistent with the content of the

maintenance instructions set out in CFR 1045.125 and CFR 1051.125. The instructions must be provided in English, French or both official languages, as requested by the purchaser.

11.3 Notice of defect

Given the complexity of the assembly process and the extensive supply chain for parts and components for engines and vehicles, there is always a possibility of a defect in the design, construction or functioning of the vehicle or engine that may affect its compliance with emission standards. The notice of defect provisions in section 157 of CEPA 1999 and section 43 of the Regulations require *companies* to issue a notice of defect on becoming aware of a defect in the design, construction or functioning of the engine, vessel or vehicle that affects or is likely to affect its compliance with a prescribed standard set out in the Regulations. A defect trend can be established from many sources, including, but not limited to: audits, emissions test results, assembly line reports, reports from users, warranty claims, or other information received from government agencies. There is no minimum threshold quantity of occurrences.

Subsection 43(1) of the Regulations describes the information that must be provided in the notice of defect, as follows:

- the name of the *company* giving the notice;
- the description of each engine, vessel or vehicle in respect of which the notice is given, including the make, model, identification number, model year, period of production and, if applicable, the EPA emission families;
- the estimated percentage of the potentially affected engines, vessels or vehicles that contain the defect;
- a description of the defect;
- an evaluation of the pollution risk arising from the defect;
- a statement of the measures to be taken to correct the defect; and
- a description of the means available to the *company* to contact the current owner of each affected engine, vessel or vehicle.

As specified in subsection 157(1) of CEPA 1999, the notice must be given to the Minister, to each person who has obtained from the *company* an engine, vessel or vehicle with the defect, and to each current owner of an engine, vessel or vehicle with the defect. Subsection 157(2) of CEPA 1999 provides methods of determining current owners of engines, vessels and vehicles. If the Minister is satisfied that the name of the current owner cannot reasonably be determined, subsection 157(4) of CEPA 1999 specifies that the Minister may order that the notice be provided by publication in daily newspapers or through an alternative medium, or may order that the current owners need not be notified.

Subsection 157(7) of CEPA 1999 specifies that every *company* that causes notice of defect to be given must submit an initial report and subsequent regular reports. Within 60 days after a notice of defect has been given, the *company* must submit to the Minister an initial report containing the information described in subsection 43(2) of the Regulations. The *company* must also submit subsequent regular reports (i.e., follow-up reports) to the Minister for a period of two years after the day on which the notice of defect was given, unless the *company* is instructed otherwise by the Minister. In the case of a marine engine, a follow-up report is to be submitted within 12 months of the initial report or a previous follow-up report; in the case of a vessel or off-road recreational vehicle, a follow-up report is to be submitted within 6 months of the initial

report or a previous follow-up report. The required contents of the follow-up report can be found in subsection 43(3) of the Regulations.

Under subsection 157(3) of CEPA 1999, a *company* is not required to cause notice of defect to be given if a relevant notice has already been given in Canada for the same defect under section 10 the *Motor Vehicle Safety Act*. The *company* is encouraged to obtain a copy of that notice of defect for their records.

11.4 Obligation to provide an engine, vessel or vehicle for research and testing

Under section 159 of CEPA 1999, upon request from the Minister, a *company* shall make available for testing any engine, vessel or vehicle that was used in tests conducted in order to establish information submitted to the Minister relating to standards for emissions, or make available for testing an equivalent engine, vessel or vehicle. The Minister will defray the transportation cost and pay the rental rate set in section 40 of the Regulations. The annual rental rate is 21% of the manufacturer's suggested retail price of the engine, vessel or vehicle, prorated on a daily basis for each day that the engine, vessel or vehicle is made available.

12 SPECIAL CASES OF MARINE SPARK-IGNITION ENGINES, VESSELS AND OFF-ROAD RECREATIONAL VEHICLES

12.1 Engines, vessels or vehicles imported into Canada solely for purposes of exhibition, demonstration, evaluation or testing

Under paragraph 155(1)(*a*) of CEPA 1999, an engine, vessel or vehicle imported into Canada solely for purposes of exhibition, demonstration, evaluation or testing does not have to comply with the requirements of the Regulations if a declaration signed by the person importing the engine, vessel or vehicle, or their duly authorized representative, is submitted to the Minister prior to importation. The declaration must indicate that the engine, vessel or vehicle will be used in Canada solely for purposes of exhibition, demonstration, evaluation or testing and will remain in Canada not longer than one year or any other period that the Minister specifies.

Subsection 38(1) of the Regulations specifies that the declaration must contain the following:

- the information described in paragraphs 37(1)(*a*) to (*c*) and subparagraph 37(1)(*d*)(i) of the Regulations:
    - the importer's name and civic address and, if different, their mailing address;
    - the manufacturer's name, the number of engines, vessels or vehicles being imported, and the applicable make, model, model year and class of each of those engines, vessels and vehicles;
    - the day on which the engine, vessel or vehicle is expected to be imported; and
    - the business number assigned to the importer by the Minister of National Revenue.
- the identification number, if any, of the engine, vessel or vehicle;
- a statement that the engine, vessel or vehicle will be used in Canada solely for purposes of exhibition, demonstration, evaluation or testing; and

- the date on which the engine, vessel or vehicle will be removed from Canada or destroyed.

Subsection 38(2) states that a *company* whose world production of engines, vessels and vehicles, combined, is at least 2500 per year has the option of submitting its declaration quarterly.

The time restriction of one year applies for both types of declarations (i.e., declaring before importation or quarterly declarations). Also for both types of declarations, the *company* must apply in writing to the Minister if it would like to obtain an acknowledgement from the Minister specifying a different period of time that the engine, vessel or vehicle can remain in Canada.

Companies are encouraged to contact VehicleandEngineInfo@ec.gc.ca if they are planning to import into Canada an engine, vessel or vehicle solely for purposes of exhibition, demonstration, evaluation or testing.

12.2 Engines, vessels or vehicles in transit through Canada, from a place outside Canada to another place outside Canada

Under paragraph 155(1)(*b*) of CEPA 1999, an engine, vessel or vehicle in transit through Canada, from a place outside Canada to another place outside Canada, does not have to comply with the requirements of the Regulations, if it is accompanied by written evidence establishing that the engine, vessel or vehicle will not be sold or used in Canada.

12.3 Engine, vessel or vehicle imported exclusively for use by a visitor to Canada

Under paragraph 155(1)(*c*) of CEPA 1999, an engine, vessel or vehicle imported exclusively for use by a visitor to Canada or by a person passing through Canada to another country does not have to meet the requirements of the Regulations.

12.4 Incomplete engine, vessel or vehicle

Under section 39 of the Regulations and subsection 153(2) of CEPA 1999, an incomplete engine or vehicle can be imported by a *company* when a declaration is submitted to the Minister prior to importation. The declaration must be signed by a duly authorized representative of the *company* and must contain the following:

- the information described in paragraphs 37(1)(*a*) to (*c*) and subparagraph 37(1)(*d*)(i) of the Regulations:
    - the importer's name and civic address and, if different, their mailing address;
    - the manufacturer's name, the number of engines, vessels or vehicles being imported, and the applicable make, model, model year and class of each of those engines, vessels and vehicles;
    - the day on which the engine, vessel or vehicle is expected to be imported; and
    - the business number assigned to the importer by the Minister of National Revenue.
- a statement from the manufacturer of the engine, vessel or vehicle that that when the engine, or the main assembly of the vessel or the vehicle, is completed in

accordance with instructions provided by the manufacturer, the engine, vessel or vehicle will conform to the standards prescribed under these Regulations; and

- a statement from the *company* that the engine, vessel or vehicle will be completed in accordance with the manufacturer's instructions.

12.5 Replacement engine

Under section 18 of the Regulations, a replacement engine is an engine manufactured exclusively to replace an engine used to propel a vessel if no current model year engine exists that has the characteristics necessary for the propulsion of the vessel. A replacement engine may conform to the standards specified in subsection 18(2) of the Regulations, which are different from those prescribed in sections 13 to 17 of the Regulations.

The *company* must affix a label to a replacement engine. Under subsection 18(3) of the Regulations, this label must meet the following:

- requirements set out for a label under subsections 7(3) and (4), and indicate, in both official languages, that the engine is a replacement engine; or
- requirements set out in CFR 1068.240(b)(6).

12.6 Engine, vessel or vehicle for which the Governor in Council has granted an exemption

A *company* may apply to the Governor in Council to be granted an exemption from any standard prescribed under the Regulations. Under section 156 of CEPA 1999, an exemption from any prescribed standard may be granted only if, in the opinion of the Governor in Council, compliance with that standard would:

- create substantial financial hardship for the *company*;
- impede the development of new features for safety, emission monitoring or emission control that are equivalent or superior to those that conform to prescribed standards; or
- impede the development of new kinds of vehicles, engines, or vehicle or engine systems or components.

An exemption may not be granted for a model of engine, vessel or vehicle if the exemption would substantially diminish the control of emissions from the engine, vessel or vehicle, or if the *company* applying for the exemption has not provided evidence that it has attempted in good faith to bring the model into conformity with all applicable prescribed standards.

Under subsection 156(4) of CEPA 1999, an exemption for financial hardship may not be granted:

- if the world production of engines, vessels or vehicles manufactured by the *company*, or by the manufacturer of the model that is the subject of the application for exemption, exceeded 10 000 engines, vessels or vehicles in the 12-month period beginning two years before the beginning of the exemption period; or
- if the total number of engines, vessels or vehicles manufactured for, or imported into, the Canadian market by the *company* exceeded 1000 in that 12-month period.

The following information from section 41 of the Regulations is to be provided by the *company* to the Minister, before the manufacture or importation of the engine, vessel or vehicle, when applying for an exemption:

- the *company* name and civic address and, if different, its mailing address;
- the province or country under the laws of which the *company* is established;
- the section number, title and text of the standards from which an exemption is sought;
- the duration requested for the exemption;
- the estimated number of engines, vessels or vehicles for which the exemption is sought, and an estimate of the changes in the level of emissions if the exemption is granted;
- the grounds (based on any of paragraphs 156(1)(*a*) to (*c*)) for the application, including technical and financial information that supports, in detail, those grounds;
- if the grounds for the application are substantial financial hardship:
    - (i) the world production of engines, vessels or vehicles manufactured by the *company*, or by the manufacturer of the model of the engine, vessel or vehicle that is the subject of the application, in the 12-month period that begins two years before the beginning of the exemption period that is requested, and
    - (ii) the number of engines, vessels or vehicles manufactured for, or imported into, the Canadian market by the *company* in that 12-month period;
- if the *company* is requesting that information submitted be treated as confidential under section 313 of CEPA 1999, the reasons for the request.

Section 42 specifies that the label to be applied to an engine, vessel or vehicle for which an exemption has been granted must meet the requirements for labels set out in subsections 7(3) and (4) of the Regulations. The label also must state, in both official languages, the standard for which the exemption has been granted, and the title and date of the exemption order.

13 COMPLIANCE AND ENFORCEMENT

Companies are responsible for ensuring that their products comply with the Regulations and are required to produce evidence of conformity. Environment Canada administers a comprehensive program to verify compliance with federal emission standards, which includes:

- authorizing and monitoring use of the national emissions mark;
- monitoring engine, vessel and vehicle importation;
- reviewing a *company*'s evidence of conformity;
- monitoring data submission for compliance with the fleet averaging regime;
- registering notices of defect affecting emission controls;
- inspection of test engines, vessels and vehicles and their emission-related components; and

- laboratory emission tests of new sample engines, vessels and vehicles that are representative of products offered for sale in Canada.

If Environment Canada determines that an engine, vessel or vehicle does not comply with the Regulations, the *company* is subject to the provisions of CEPA 1999. In this situation, the normal course of events is to perform sufficient engineering assessment to determine if a notice of defect should be issued in accordance with section 157 of CEPA 1999.

Environment Canada applies the Compliance and Enforcement Policy for CEPA 1999 to address alleged violations. This policy sets out the range of possible responses to alleged violations: warnings, environmental protection compliance orders, ticketing, ministerial orders, injunctions, prosecution, and environmental protection alternative measures (which are an alternative to a court prosecution after the laying of charges for a CEPA 1999 violation). In addition, the policy explains when Environment Canada will resort to civil suits by the Crown for cost recovery. The policy can be viewed at http://www.ec.gc.ca/alef-ewe/default.asp?lang=en&n=AF0C5063-1.

Alleged violations may be identified by Environment Canada's technical personnel, through information transmitted by the Canada Border Services Agency, complaints received from the public, or inspections or investigations by CEPA 1999 enforcement officers. Inspections may also include verifications by enforcement officers at Canada's international borders.

When, following an inspection or investigation, a CEPA enforcement officer discovers an alleged violation, the officer will choose the appropriate enforcement action based on the following criteria:

- Nature of the alleged violation: this includes consideration of the seriousness of the harm or potential harm to the environment, the intent of the alleged violator, whether it is a repeat violation, and whether an attempt has been made to conceal information or otherwise subvert the objectives and requirements of CEPA 1999.
- Effectiveness in achieving the desired result with alleged violator: the desired result is compliance with CEPA 1999 within the shortest possible time and with no further repetition of the violation. Factors to be considered include the violator's history of compliance, willingness to cooperate with enforcement officers, and evidence of corrective actions already taken.
- Consistency in enforcement: enforcement officers will consider how similar situations have been handled in determining the measures to be taken to enforce CEPA 1999.

Environment Canada is co-ordinating efforts with the EPA, through information sharing, to increase the efficiency and effectiveness of both organizations' compliance programs.

APPENDICES

APPENDIX A: Sample Cover Letter for Submission of End of Model Year Report

<insert date>

Director, Transportation Division
Energy and Transportation Directorate
Environment Canada
351 Saint-Joseph Boulevard
Gatineau, Quebec
K1A 0H3

Dear Director:

Re: End of Model Year Report for the <insert model year> Model Year

Pursuant to the requirements of section 33 of the *Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations*, I am pleased to submit the end of model year report for the <insert model year> model year on behalf of <insert *company name*>.

Should you have any questions concerning the attached report, please contact me by email at <insert email address> or by phone at <insert telephone number>.

Sincerely,

<insert signature of authorized official>
_____

<insert name of authorized official>
<insert title of authorized official>

APPENDIX B: Recommended Template for End of Model Year Report

End of Model Year Report
for the <insert model year> Model Year

Marine Spark-Ignition Engine, Vessel and
Off-Road Recreational Vehicle Emission Regulations
Canadian Environmental Protection Act, 1999

Submitted by:

<insert *company* name>

<insert signature of authorized official>

_____

<insert name of authorized official>
<insert title of authorized official>

<insert date of submission>

Part I: Emissions from Marine Spark-Ignition Engines and Vessels

Explanatory note:

In this part, the *company* reports, for the applicable model year, the emission performance of its marine engines and vessels that were manufactured in Canada, or imported into Canada, for the purpose of sale to the first retail purchaser.

STEP 1) If applicable, state that the manufacture of all marine engines of the 2012 model year was completed before the coming into force date (subsection 33(6) of the Regulations).

Explanatory note:

For the 2012 model year only, if applicable, a *company* may make the statement that all of its engines of a particular class were manufactured prior to the coming into force date of the Regulations. In this case, the *company* does not have to complete any further steps in this part for that class of marine engine.

Text for report:

"The manufacture of every <insert applicable class: outboard and personal watercraft engine and/or conventional inboard engine> of the 2012 model year was completed before the coming into force date of the Regulations."

STEP 2) Provide a statement of conformity with emission standards (subsections 33(2) and 33(4) of the Regulations).

Explanatory note:

Under subsection 33(2) of the Regulations, a *company* must make a statement to indicate, for outboards and personal watercraft engines and conventional inboard engines, its choice of one of the three options for conformity to the engine emission standards that are available under subsection 11(1) of the Regulations. It must also indicate, for high-performance inboard engines and evaporative emissions from vessels and outboards, its choice of one of the two options for conformity to the standards that are available under paragraphs 11(1)(*a*), (*b*) and (*c*) of the Regulations.

Option 1: Paragraph 11(1)(*a*) states that engines must conform to the applicable standards set out in sections 13 to 17 of the Regulations, or that vessels and outboards with installed fuel lines or fuel tanks must conform to the applicable standards set out in section 19 of the Regulations. In either case, the *company* makes the statement referred to in paragraph 33(2)(*a*) of the Regulations that, for each class of engine, every engine of a particular class conforms to paragraph 11(1)(*a*) and, if applicable, makes the statement that every vessel and outboard conforms to paragraph 11(1)(*a*). In making the statement, the *company* does not have to complete any further steps in this part for that class of marine engine or for its vessels and outboards.

Option 2: Paragraph 11(1)(*b*) states that engines that are sold concurrently in Canada and the United States, and that are covered by an EPA certificate, must conform to the emission standards or FELs set out in the EPA certificate. Paragraph 11(1)(*c*) states that vessels or outboards that are sold concurrently in Canada and the

United States, and whose fuel lines or fuel tanks are covered by one or more EPA certificates, must have fuel lines and fuel tanks that conform to the emission standards or FELs set out in the EPA certificates. In either of these cases, the *company* makes the statement referred to in paragraph 33(2)(*a*) of the Regulations that every engine of a particular class conforms to paragraph 11(1)(*b*) or every vessel and outboard conforms to paragraph 11(1)(*c*). As specified in subsection 33(4), a *company* whose engines meet the requirements of paragraph 11(1)(*b*), that makes the statement under paragraph 33(2)(*a*), and that imports less than 100 marine engines or off-road recreational vehicles in the model year, does not have to complete any further steps in this part for that class of marine engine. A *company* that makes this statement concerning engines and imports 100 or more marine engines or off-road recreational vehicles in the model year must complete steps 5 to 8 of this part, in order to report the information in paragraphs 33(3)(*b*) and (*c*) as if those engines were a fleet. This information is reported for the purpose of monitoring the environmental performance of engines. There are no further steps to complete in this part in respect of evaporative emissions from vessels and outboards.

Option 3: Paragraph 11(1)(*d*) states that the engines must conform to FELs and comply on the basis of fleet averaging. In this case, the *company* makes the statement referred to in paragraph 33(2)(*b*) of the Regulations that the outboards and personal watercraft engines and conventional inboard engines are grouped into fleets that conform to paragraph 11(1)(*d*). A *company* that makes this statement must complete steps 3 to 12 of this part. Under paragraph 33(2)(*b*), the *company* must also indicate whether it has made the exclusion under subsection 24(4) (i.e., whether engines covered by an EPA certificate that are sold in greater numbers in the United States than Canada were included or excluded from the fleet) (see step 3).

Text for report:
For each applicable class, report one of the following:

"In accordance with paragraph 33(2)(*a*) of the Regulations, <insert *company* name> states that every <insert applicable class: outboard and personal watercraft engine, conventional inboard engine, and/or high-performance inboard engine> conforms to paragraph <insert 11(1)(*a*) or 11(1)(*b*), as applicable> of the Regulations and every <insert applicable class: vessel and/or outboard> conforms to paragraph <insert 11(1)(*a*) or 11(1)(*c*), as applicable> of the Regulations."

or

"In accordance with paragraph 33(2)(*b*) of the Regulations, <insert *company* name> states that all <insert applicable engine class: outboards and personal watercraft engines and/or conventional inboard engines> are grouped into (a) fleet(s) that conform(s) to paragraph 11(1)(*d*) of the Regulations."

STEP 3) If applicable, state whether the *company* is making the election to exclude, from the fleet averaging calculations, the marine engines that are

covered by an EPA certificate and that are sold in greater numbers in the United States than Canada (subsection 24(4) and paragraph 33(2)(*b*) of Regulations).

Explanatory note:

If a *company* chooses to comply by using paragraph 11(1)(*d*) of the Regulations (i.e., using fleet averaging), subsection 24(4) of the Regulations specifies that a *company* has the option to exclude, from any of its fleets, its marine engines that are covered by an EPA certificate and that are sold in greater numbers in the United States than Canada. The consequences of this voluntary exclusion are set out in subsection 25(3) of the Regulations and state that the *company* forfeits all previously obtained credits for that fleet and does not obtain any credits for that fleet for that model year. If choosing this option, the *company* must also complete step 12, in which it must include in its report a second set of the information that is specified in paragraphs 33(3)(*b*) and (*c*) (i.e., steps 5 to 8), but with modifications so as to include these engines as if they were in a fleet.

Text for report:

"<Insert *company* name> is making the election under subsection 24(4) of the Regulations to exclude from its fleet(s) of <insert applicable fleet(s) of marine engines> all of the engines that are covered by an EPA certificate, all of which are sold in greater numbers in the United States than in Canada."

STEP 4) If applicable, state whether the *company* is making the election to not calculate fleet average emission credits or deficits (subsection 25(4) and paragraph 33(3)(*g*) of the Regulations).

Explanatory note:

A *company* may choose to make the election described in subsection 25(4) of the Regulations, which states that a *company* may elect to not calculate fleet average emission credits or deficits for a fleet of marine engines for any emission type if every engine in that fleet conforms to a FEL that is equal to or less than the standard that is applicable to marine engines for that model year (referred to in sections 13 and 14 of the Regulations). A *company* that elects to not calculate the fleet average emission credits or deficits under this provision must make a statement indicating for which fleet(s) and emission type(s) the election was made, and is not required to report the information specified in paragraph 33(3)(*b*) of the Regulations (i.e., step 6) in relation to that fleet and emission type. The fleet average emission credits are deemed to be zero in this case.

Text for report:

"<Insert *company* name> elects to not calculate fleet average emission credits or deficits for <insert $HC+NO_x$ emissions and/or CO emissions> for its fleet(s) of <insert applicable fleet(s) of marine engines>, and states that every engine in this/these fleet(s) conform(s) to a family emission limit that is equal to or less than the standards that are applicable to the marine engines."

STEP 5) State the applicable emission standards (paragraph 33(3)(*a*) of the Regulations).

Explanatory note:

A *company* must report the applicable standard for each fleet and emission type. Information on the exhaust emission standards is summarized in section 6.6 of this document.

Text for report:

"The applicable exhaust standards for marine engines are as indicated in Table 1. The applicable crankcase emission standard is that crankcase emissions must not be discharged directly into the ambient atmosphere."

Table 1: Applicable exhaust emission standards

Engine class	Emission family	Engine power (kW)	$HC+NO_x$ (g/kW-hr)	CO (g/kW-hr)
Outboards and personal watercraft engines			[a]	[a]
Outboards and personal watercraft engines (identical to jet boat models)			[a]	[a]
Conventional inboard engines				
Jet boat conventional inboard engines (with engines identical to outboard or personal watercraft engine models)				

[a] report result of equation used to determine the applicable standard.
Note: repeat rows as needed for each emission family.

STEP 6) State the fleet average emission credits or deficits and the family emission credits or deficits; and, for each model, state the values used to calculate the family emission credits (subparagraph 33(3)(*b*)(i) of the Regulations).

Explanatory note:

For each model, all the values used in calculating the family emission credits or deficits for each emission family in each fleet are to be reported. These are the values that are used in the formula in subsection 26(2) of the Regulations for calculating the family emission credit or deficits (see section 7.14.2 of this document). The family emission credits or deficits that are calculated must also be reported along with the fleet average emission credits or deficits that are calculated by totalling the family emission credits or deficits for each fleet.

Text for report:

"The values used to calculate the family emission credits or deficits for each emission family in the fleets of marine engines are as indicated in Table 2, except for

the applicable emission standard, which is reported in Table 1. The resultant family emission credits or deficits for each emission family, which is totalled to determine the fleet average emission credits or deficits for each fleet, are also reported in Table 2. The fleet average emission credits and/or deficits for each fleet are indicated in Table 3."

Table 2: Family emission credits or deficits, and values used to calculate them

Engine class	Emission type	Model	Emission family	"L" (g/kW-hr)	"N"	"P" (kW)	"U" (hr)	Family emission credits (+ number) or deficits (- number) (kg)
Outboards and personal watercraft engines	$HC+NO_x$ exhaust							
	CO exhaust							
Outboards and personal watercraft engines (identical to jet boat models)[a]	$HC+NO_x$ exhaust							
	CO exhaust							
Conventional inboard engines	$HC+NO_x$ exhaust							
	CO exhaust							
Jet boat conventional inboard engines (with engines identical to outboard or personal watercraft engine models)[a]	$HC+NO_x$ exhaust							
	CO exhaust							

[a] Report the family emission credits or deficits as calculated. Offsetting of deficits between corresponding jet boat emission families is reported in Step 7.
Note: repeat rows as needed for multiple models.

Table 3: Fleet average emission credits or deficits

Fleet	Emission type	Fleet average emission credits (+ number) or deficits (- number) (kg)
Outboards and personal watercraft engines	$HC+NO_x$ exhaust	
	CO exhaust	
Conventional inboard engines	$HC+NO_x$ exhaust	
	CO exhaust	

STEP 7) For jet boat engines described by CFR 1045.660(a) and (c), report[1] the offsetting of family emission deficits for those jet boat engines by family emission credits from outboards and personal watercraft engines (identical to those jet boat models) (subsection 27(4) of the Regulations).

Explanatory note:

A *company* must state the offsetting of family emission deficits for jet boat conventional inboard engines (with engines identical to outboard or personal watercraft engine models) with family emission credits for outboards and personal watercraft engines (identical to those jet boat models) on a per-emission-family basis. Repeat the first sentence of "Text for Report" as often as necessary for each emission family and emission type. The balance of family emission credits and deficits must then be reported in the table.

Text for report:

"<Insert number of deficits and units> of family emission deficits for jet boat conventional inboard engines for emission family <insert emission family name> are offset by the same number of family emission credits for outboards and personal watercraft engines (identical to those jet boat models) in relation to the <insert emission type> emission type. The balance of family emission credits and deficits after the offsetting is indicated in Table 4."

Table 4: Balance of family emission credits or deficits for jet boats

Engine class	Emission family	$HC+NO_x$ exhaust	CO exhaust
Outboards and personal watercraft engines (identical to jet boat models)			
Jet boat conventional inboard engines (with engines identical to outboard or personal watercraft engine models)			

STEP 8) State the total number of marine engines in the fleet (paragraph 33(3)(*c*) of the Regulations).

Explanatory note:

State the total number of engines in each fleet.

Text for report:

"The total number of outboards and personal watercraft engines in the fleet is <insert number>. The total number of conventional inboard engines in the fleet is <insert number>. The total number of outboards or personal watercraft engines (that are identical to jet boat engine models) is <insert number>. The total number of jet boat engines (that are identical to outboard or personal watercraft engine models) is <insert number>."

[1] This step is only applicable to a *company* that wishes to offset a deficit for jet boat engines by using credits from their corresponding outboards or personal watercraft engines in accordance with subsection 27(4) of the Regulations.

STEP 9) State information concerning the transfer of any fleet average emission credits between the reporting *company* and any other *company* (paragraph 33(3)(*d*) and subparagraph 33(3)(*d*)(i) of the Regulations).

Explanatory note:

Fleet average emission credits may be transferred to and from another *company* in order to offset deficits, if the credits used to offset the deficits are in respect of the same type of fleet, the same emission type and the same standard, expressed in the same units. Paragraph 33(3)(*d*) requires that information be reported on the transfer of any fleet average emission credits, including information regarding the other *company*, since the submission of the previous end of model year report. If there has been a transfer of credits with more than one *company*, repeat text for the report and table as necessary. If there has been no transfer of credits between the reporting *company* and another *company*, Steps 9 and 10 do not need to be completed.

Text for report:

"Fleet average emission credits were transferred <insert "to" or "from" and name of the other *company*> as indicated in Table 5. <insert other *company* name> is located at <insert complete street address> with a mailing address of <insert complete mailing address if different than street address or insert "the same">."

Table 5: Fleet average emission credits transferred between companies

Fleet	**Emission type**	**Units of family emission limit**	**Number of credits transferred to reporting *company* (kg)**	**Number of credits transferred from reporting *company* (kg)**	**Model year during which the credits are transferred**	**Date of transfer**
Outboards and personal watercraft engines	$HC+NO_x$ exhaust	g/kW-hr				
Conventional inboard engines	$HC+NO_x$ exhaust	g/kW-hr				
	CO exhaust	g/kW-hr				

STEP 10) Include a signed statement from the other *company* to which, or from which, credits were transferred (subparagraph 33(3)(*d*)(ii) of the Regulations).

Explanatory note:

If credits were transferred between the reporting *company* and any other *company*, a signed statement from a person who is authorized to act on behalf of the other *company* must be included in the end of model year report. The information required in the statement is shown below. One statement from each *company* with which there have been transactions must be submitted.

Text for signed statement:

"<Insert name of other *company* making this statement> states that fleet average emission credits were transferred <insert "to" or "from" and name of the reporting *company*> as indicated in Table 6.

Table 6: Fleet average emission credits transferred between companies

Fleet	**Emission type**	**Units of family emission limit**	**Number of credits transferred to reporting *company* (kg)**	**Number of credits transferred from reporting *company* (kg)**	**Model year during which the credits are transferred**	**Date of transfer**
Outboards and personal watercraft engines	$HC+NO_x$ exhaust	g/kW-hr				
Conventional inboard engines	$HC+NO_x$ exhaust	g/kW-hr				
	CO exhaust	g/kW-hr				

Sincerely,

<insert signature of authorized official>

_____

<insert name of authorized official>
<insert title of authorized official>"

STEP 11) State the balance of fleet average emission credits to be banked or deficits carried over (paragraphs 33(3)(*e*) and (*f*) of the Regulations).

Explanatory note:

The *company* must report the balance of fleet average emission credits that it would like to bank for future use. The balance is determined by calculating fleet average emission credits or deficits of the *company*'s fleets for each emission type for the reporting model year, adding any fleet average emission credits banked in the previous model year (or subtracting any remaining fleet average emission deficits from the 2012 model year), and adding any credits transferred to the *company* from any other *company* or subtracting any credits transferred from the *company* to any other *company*. For a *company* using the provisions in subsection 27(4) of the Regulations, remaining family emission credits for outboards and personal watercraft engines that are identical to jet boat models are either added to the fleet average emission credits for outboards and personal watercraft engines or reported separately as banked family emission credits for the corresponding jet boat conventional inboard engines.

For the 2012, 2013 and 2014 end of model year reports only, the *company* must report any fleet average emission deficits in relation to the 2012 model year that are

remaining under paragraph 27(3)(*a*). These deficits must be offset no later than the day on which the *company* submits the end of model year report for the 2014 model year.

Text for report:

"The balance of fleet average emission credits to be banked for each fleet and emission type is indicated in Table 7. The balance of fleet average emission deficits remaining in relation to the 2012 model year is indicated in Table 8."

Table 7: Balance of fleet average emission credits to be banked

Fleet/engine class	$HC+NO_x$ exhaust	CO exhaust
Outboards and personal watercraft engines		[a]
Conventional inboard engines		
Jet boat conventional inboard engines (with engines identical to outboard or personal watercraft engine models)[b]		[a]

[a] Report the end of model year balance of CO exhaust fleet average emission credits for outboards and personal watercraft engines and the CO exhaust family emission credits for jet boat conventional inboard engines described by CFR 1045.660(a) and (c), and note that the credits cannot be carried over from a previous model year or transferred to another *company* and are cancelled upon receipt of the end of model year report.

[b] Repeat row for each emission family. Report family emission credits in place of fleet average emission credits.

Table 8: Balance of fleet average emission deficits remaining in relation to the 2012 model year

Fleet/engine class	$HC+NO_x$ exhaust			CO exhaust		
	Deficit carried forward from 2012 model year	Credits used toward offsetting deficit	Remaining deficit	Deficit carried forward from 2012 model year	Credits used toward offsetting deficit	Remaining deficit
Outboards and personal watercraft engines						
Conventional inboard engines						
Jet boat conventional inboard engines (with engines identical to outboard or personal watercraft engine models)[a]						

[a] Repeat row for each emission family. Report family emission deficits in place of fleet average emission deficits.

STEP 12) State information from paragraphs 33(3)(*b*) and (*c*) for excluded engines under subsection 24(4) (subsection 33(5) of the Regulations).

Explanatory note:

As specified in subsection 33(5) of the Regulations, if the *company* has made the election under subsection 24(4) of the Regulations (to exclude its marine engines that are covered by an EPA certificate and that are sold in greater numbers in the United States than Canada from any of its fleets), it must also include in its report a second set

of the information that is specified in paragraphs 33(3)(*b*) and (*c*) (i.e., steps 5 to 8), but with modifications so as to include those engines as if they were part of the fleet.

Part II: Emissions from Off-Road Recreational Vehicles

Explanatory note:

In this part, the *company* reports, for the applicable model year, the emission performance of its off-road recreational vehicles that were manufactured in Canada, or imported into Canada, for the purpose of sale to the first retail purchaser.

STEP 1) If applicable, state that the main assembly of all off-road recreational vehicles of the 2012 model year was completed before the coming-into-force date (subsection 33(6) of the Regulations).

Explanatory note:

For the 2012 model year only, if applicable, a *company* may make the statement that all of its vehicles of a particular class (i.e., snowmobiles, off-road motorcycles, ATVs and UVs) had their main assembly completed prior to the coming-into-force date of the Regulations. In this case, the *company* does not have to complete any further steps in this part for that class of off-road recreational vehicle.

Text for report:

"The main assembly of every <insert applicable class: snowmobile, off-road motorcycle, ATV and/or UV> of the 2012 model year was completed before the coming-into-force date of the Regulations."

STEP 2) Statement of conformity with emission standards (subsections 33(2) and (4) of the Regulations).

Explanatory note:

Under subsection 33(2) of the Regulations, a *company* must make a statement to indicate, for each class of vehicle, its choice of the three options for conformity with the standards that are available under subsection 11(1) of the Regulations.

Option 1: Paragraph 11(1)(*a*) states that vehicles must conform to the applicable standards set out in sections 20, 21 and 22 of the Regulations. In this case, the *company* makes the statement referred to in paragraph 33(2)(*a*) of the Regulations that, for each class of vehicle, every vehicle of a particular class conforms to paragraph 11(1)(*a*). In making this statement, the *company* does not have to complete any further steps in this part for that class of vehicle.

Option 2: Paragraph 11(1)(*b*) states that vehicles that are sold concurrently in Canada and the United States, and that are covered by an EPA certificate, must conform to the emission standards or FELs set out in the EPA certificate. In this case, the *company* makes the statement referred to in paragraph 33(2)(*a*) of the Regulations that every vehicle of a particular class conforms to paragraph 11(1)(*b*). As specified in subsection 33(4), a *company* that makes this statement and imports less than 100 marine engines or off-road recreational vehicles in the model year does not have to complete any further steps in this part for that class of vehicle. A *company* that makes this statement and imports 100 or more marine engines or off-road recreational vehicles

in the model year must complete steps 5 to 7 of this part to report the information in paragraphs 33(3)(*b*) and (*c*) as if those vehicles were a fleet. This information is reported for the purpose of monitoring the environmental performance of all vehicles.

Option 3: Paragraph 11(1)(*d*) states that the vehicles must conform to FELs and comply on the basis of fleet averaging. In this case, the *company* makes the statement referred to in paragraph 33(2)(*b*) of the Regulations that snowmobiles, off-road motorcycles, ATVs and/or UVs are grouped into fleets that conform to paragraph 11(1)(*d*). A *company* that makes this statement must complete steps 3 to 11 of this part. Under paragraph 33(2)(*b*), the *company* must also indicate whether it has made the exclusion under subsection 24(4) (i.e., whether vehicles covered by an EPA certificate that are sold in greater numbers in the United States than Canada were included or excluded from the fleet; see step 3).

The *company* must be clear and consistent in its statements, and in the following tables, about whether it is choosing to group together its ATVs and UVs or to keep them separate. The template shows ATVs and UVs grouped together, but the *company* may change this if those vehicles are in two separate fleets.

Text for report:

For each vehicle class, report either:

"In accordance with paragraph 33(2)(*a*) of the Regulations, <insert *company* name> states that every <insert applicable class: snowmobile, off-road motorcycle, ATV and/or UV> conforms to paragraph <insert 11(1)(*a*) or (*b*), as applicable> of the Regulations."

or

"In accordance with paragraph 33(2)(*b*) of the Regulations, <insert *company* name> states that all <insert applicable vehicle class: snowmobiles, off-road motorcycles, ATVs and/or UVs> are grouped into(a) fleet(s) that conform(s) to paragraph 11(1)(*d*) of the Regulations."

STEP 3) If applicable, state whether the *company* is making the election to exclude from the fleet averaging calculations the off-road recreational vehicles that are covered by an EPA certificate and that are sold in greater numbers in the United States than Canada (subsection 24(4) and paragraph 33(2)(*b*) of the Regulations).

Explanatory note:

If a *company* chooses to comply by using paragraph 11(1)(*d*) of the Regulations (i.e., using fleet averaging), subsection 24(4) of the Regulations specifies that a *company* has the option to exclude from its fleets its vehicles that are covered by an EPA certificate and that are sold in greater numbers in the United States than Canada. The consequences of this voluntary exclusion are set out in subsections 30(2) of the Regulations and state that the *company* forfeits all previously obtained credits for that fleet and does not obtain any credits for that fleet for that model year. If choosing this option, the *company* must also complete step 12, in which it must include in its report a

second set of the information that is specified in paragraphs 33(3)(*b*) and (*c*) (i.e., steps 5 to 7), but with modifications so as to include these vehicles as if they were in a fleet.

Text for report:

"<Insert *company* name> is making the election under subsection 24(4) of the Regulations to exclude from its fleet(s) of <insert applicable fleet(s) of vehicles> all of the vehicles that are covered by an EPA certificate, all of which are sold in greater numbers in the United States than Canada."

STEP 4) If applicable, state whether the *company* is making the election to not calculate a fleet average emission value (subsection 28(3) and paragraph 33(3)(*g*) of the Regulations).

Explanatory note:

A *company* may choose to make the election described in subsection 28(3) of the Regulations, which states that a *company* may elect to not calculate a fleet average emission value for a fleet of vehicles for any emission type if every vehicle in that fleet conforms to a FEL that is equal to or less than the standard that is applicable to vehicles for that model year referred to in sections 20 to 22. A *company* that elects to not calculate a fleet average emission value under this provision must make a statement indicating for which fleet(s) and emission types(s) the election was made, and is not required to report the information specified in paragraph 33(3)(*b*) of the Regulations (i.e., step 6) in relation to that fleet and emission type. In this case, the fleet average emission value is deemed to be equivalent to the applicable standard.

Text for report:

"<Insert *company* name> elects to not calculate a fleet average emission value for <insert HC, HC+NO_x and/or CO emissions> for its fleet(s) of <insert applicable fleet(s) of vehicles>, and states that every vehicle in this/these fleet(s) conform(s) to a family emission limit that is equal to or less than the standards that are applicable to the vehicles."

STEP 5) State the applicable emission standards (paragraph 33(3)(*a*) of the Regulations.)

Explanatory note:

A *company* must report the applicable standard for each fleet and emission type. Information on the exhaust and evaporative emission standards is summarized in sections 6.6 and 6.7, respectively, of this document.

Text for report:

"The applicable exhaust and evaporative standards for the vehicles are as indicated in Tables 1 and 2, respectively. The applicable crankcase emission standard is that crankcase emissions must not be discharged directly into the ambient atmosphere."

Table 1: Applicable exhaust emission standards

Vehicle class (and units of standard)	HC	$HC+NO_x$	CO
Snowmobiles (g/kW-hr)	[a]	n/a	[a]
Off-road motorcycles (g/km)	n/a		
Off-road motorcycles – small engine displacement (g/kW-hr)	n/a		
ATVs and UVs (g/km)	n/a		
ATVs and UVs – small engine displacement (g/kW-hr)	n/a		
ATVs and UVs – alternative engine-based standards, < 225 cc (g/kW-hr)	n/a		
ATVs and UVs – alternative engine-based standards, ≥ 225 cc (g/kW-hr)	n/a		

[a] Report result of equation as described in CFR 1051.103(a).
n/a: not applicable.

Table 2: Applicable evaporative emission standards

Vehicle class	Fuel line permeation (g/m^2/day)	Fuel tank permeation (g/m^2/day)
Snowmobiles		
Off-road motorcycles		
ATVs and UVs		

STEP 6) State the fleet average emission values, all values used to calculate the values for each model, and the fleet average emission credits or deficits (subparagraph 33(3)(*b*)(ii) of the Regulations).

Explanatory note:

All values used in calculating the fleet average emission values for each vehicle model in each fleet and for each emission type are to be reported. These are the values used in the formula in section 29 of the Regulations for calculating fleet average emission values (see section 7.15.2 of this document). The fleet average emission values that are calculated must also be reported, along with the fleet average emission credits or deficits that are calculated using the formula in subsection 30(3) of the Regulations (see section 7.15.4 of this document).

Text for report:

"The values used to calculate the fleet average emission value for each model of vehicle are indicated in Table 3. The fleet average emission value for each fleet and emission type is indicated in Table 4. The fleet average emission credits and/or deficits for each fleet and emission type are indicated in Table 5."

Table 3: Values used to calculate the fleet average emission values

Vehicle class	Model	Emission type	Emission family	TOT	W_i		Y_i		Z_i	
					value	units	value	units	value	units
Snowmobiles		HC exhaust								
		CO exhaust								
		Fuel tank permeation								
Off-road motorcycles		$HC+NO_x$ exhaust								
		CO exhaust								
		Fuel tank permeation								
Off-road motorcycles – small displacement engines		$HC+NO_x$ exhaust								
ATVs and UVs		$HC+NO_x$ exhaust								
		Fuel tank permeation								
ATVs and UVs – small displacement engines		$HC+NO_x$ exhaust								
ATVs and UVs – alternative-engine-based standards, < 225 cc		$HC+NO_x$ exhaust								
ATVs and UVs – alternative-engine-based standards, ≥ 225 cc		$HC+NO_x$ exhaust								

Note: repeat rows as needed for multiple models.

Table 4: Fleet average emission values

Fleet	Emission type	Fleet average emission value	Units
Snowmobiles	HC exhaust		g/kW-hr
	CO exhaust		g/kW-hr
	Fuel tank permeation		g/m^2/day
Off-road motorcycles	$HC+NO_x$ exhaust		g/km
	CO exhaust		g/km
	Fuel tank permeation		g/m^2/day
Off-road motorcycles – small displacement engines	$HC+NO_x$ exhaust		g/kW-hr
ATVs and UVs	$HC+NO_x$ exhaust		g/km

	Fuel tank permeation		$g/m^2/day$
ATVs and UVs – small displacement engines	$HC+NO_x$ exhaust		g/kW-hr
ATVs and UVs – alternative engine-based standards, < 225 cc	$HC+NO_x$ exhaust		g/kW-hr
ATVs and UVs – alternative engine-based standards, ≥ 225 cc	$HC+NO_x$ exhaust		g/kW-hr

Table 5: Fleet average emission credits or deficits

Fleet	Emission type	Fleet average emission credit (+ number) or deficits (- number) (g)
Snowmobiles	HC exhaust	
	CO exhaust	
	Fuel tank permeation	
Off-road motorcycles	$HC+NO_x$ exhaust	
	CO exhaust	
	Fuel tank permeation	
Off-road motorcycles – small displacement engines	$HC+NO_x$ exhaust	
ATVs and UVs	$HC+NO_x$ exhaust	
	Fuel tank permeation	
ATVs and UVs – small displacement engines	$HC + NO_x$ exhaust	
ATVs and UVs – alternative engine-based standards, < 225 cc	$HC+NO_x$ exhaust	
ATVs and UVs – alternative engine-based standards, ≥ 225 cc	$HC+NO_x$ exhaust	

STEP 7) State the total number of off-road recreational vehicles in the fleet (paragraph 33(3)(*c*) of the Regulations).

Explanatory note:

State the total number of vehicles in each fleet. ATVs and UVs may be grouped together in a fleet or kept as two separate fleets.

Text for report:

"The total number of snowmobiles in the fleet is <insert number>.

The total number of off-road motorcycles in the fleet is <insert number>.

The total number of small engine displacement off-road motorcycles in the fleet is <insert number>.

The total number of ATVs and UVs in the fleet is <insert number>.

The total number of small engine displacement ATVs and UVs in the fleet is <insert number>.

The total number of ATVs and UVs that are certified to the alternative engine-based standard in the fleet is <insert number>."

STEP 8) State information concerning the transfer of any fleet average emission credits between the reporting *company* and any other *company* (paragraph 33(3)(*d*) and subparagraph 33(3)(*d*)(i) of the Regulations).

Explanatory note:

Fleet average emission credits may be transferred to and from another *company* in order to offset deficits, if the credits used to offset the deficits are in respect of the same type of fleet, the same emission type and the same standard, expressed in the same units. Paragraph 33(3)(*d*) requires that information be reported on the transfer of any fleet average emission credits, including information regarding the other *company*, since the submission of the previous end of model year report. If there has been a transfer of credits with more than one *company*, repeat text for report and table as necessary. If there has been no transfer of credits between the reporting *company* and another *company*, steps 8 and 9 do not need to be completed.

Text for report:

"Fleet average emission credits were transferred <insert "to" or "from" and name of the other *company*> as indicated in Table 6. "<Insert other *company* name> is located at <insert complete street address> with a mailing address of <insert complete mailing address if different than street address or insert "the same">."

Table 6: Fleet average emission credits transferred between companies

Fleet	**Emission type**	**Units of family emission limit**	**Number of credits transferred to reporting *company* (g)**	**Number of credits transferred from reporting *company* (g)**	**Model year during which the credits are transferred**	**Date of transfer**
Snowmobiles	HC exhaust	g/kW-hr				
	CO exhaust	g/kW-hr				
	Fuel tank permeation	g/m^2/day				
Off-road motorcycles	$HC+NO_x$ exhaust	g/km				
	CO exhaust	g/km				
	Fuel tank permeation	g/m^2/day				
Off-road motorcycles – small displacement engines	$HC+NO_x$ exhaust	g/kW-hr				

ATVs and UVs	$HC+NO_x$ exhaust	g/km				
	Fuel tank permeation	g/m^2/day				
ATVs and UVs – small displacement engines	$HC+NO_x$ exhaust	g/kW-hr				
ATVS and UVs – alternative engine-based standards, < 225 cc	$HC+NO_x$ exhaust	g/kW-hr				
ATVs and UVs – alternative engine-based standards, ≥ 225 cc	$HC+NO_x$ exhaust	g/kW-hr				

STEP 9) Include a signed statement from the *company* to which, or from which, credits were transferred (subparagraph 33(3)(*d*)(ii) of the Regulations).

Explanatory note:

If credits were transferred between the reporting *company* and another *company*, a signed statement from a person who is authorized to act on behalf of the other *company* must be included in the end of model year report. The information required in the statement is shown below. One statement from each *company* with which there have been transactions must be submitted.

Text for signed statement:

"<Insert name of other *company* making this statement> states that fleet average emission credits were transferred <insert "to" or "from" and name of the reporting *company*> as indicated in Table 7.

Table 7: Fleet average emission credits transferred between companies

Fleet	Emission type	Units of family emission limit	Number of credits transferred to reporting *company* (g)	Number of credits transferred from reporting *company* (g)	Model year during which the credits are transferred	Date of transfer
Snowmobiles	HC exhaust	g/kW-hr				
	CO exhaust	g/kW-hr				
	Fuel tank permeation	g/m^2/day				
Off-road motorcycles	$HC+NO_x$ exhaust	g/km				
	CO exhaust	g/km				
	Fuel tank	g/m^2/day				

	permeation					
Off-road motorcycles – small displacement engines	$HC+NO_x$ exhaust	g/kW-hr				
ATVs and UVs	$HC+NO_x$ exhaust	g/km				
	Fuel tank permeation	$g/m^2/day$				
ATVs and UVs – small displacement engines	$HC+NO_x$ exhaust	g/kW-hr				
ATVs and UVs – alternative engine-based standards, < 225 cc	$HC+NO_x$ exhaust	g/kW-hr				
ATVs and UVs – alternative engine-based standards, ≥ 225 cc	$HC+NO_x$ exhaust	g/kW-hr				

Sincerely,

<insert signature of authorized official>

_____

<insert name of authorized official>
<insert title of authorized official>"

STEP 10) State the balance of fleet average emission credits to be banked or deficits to be carried over (paragraphs 33(3)(*e*) and (*f*) of the Regulations).

Explanatory note:

The *company* must report the balance of fleet average emission credits that it would like to bank for future use. The balance is determined by calculating fleet average emission credits or deficits of the *company*'s fleets for each emission type for the reporting model year, adding any fleet average emission credits banked in the previous model year (or subtracting any remaining fleet average emission deficits from the 2012 model year), and adding any credits transferred to the *company* from any other *company* or subtracting any credits transferred from the *company* to any other *company*.

For the 2012, 2013 and 2014 end of model year reports only, the *company* must report any fleet average emission deficits in relation to the 2012 model year that are remaining under paragraphs 31(4)(*a*) and (*b*). These deficits must be offset no later than

the day on which the *company* submits the end of model year report for the 2014 model year.

Text for report:

"The balance of fleet average emission credits to be banked for each fleet and emission type is indicated in Table 8. The balance of fleet average emission deficits remaining in relation to the 2012 model year is indicated in Table 9."

Table 8: Balance of fleet average emission credits to be banked

Fleet	HC exhaust	$HC+NO_x$ exhaust	CO exhaust	Fuel tank permeation
Snowmobiles		n/a		
Off-road motorcycles	n/a			
Off-road motorcycles – small displacement engines	n/a		n/a	
ATVs and UVs	n/a		n/a	
ATVs and UVs – small displacement engines	n/a		n/a	
ATVs and UVs – alternative engine-based standards, < 225 cc	n/a		n/a	
ATVs and UVs – alternative engine-based standards, ≥ 225 cc	n/a		n/a	

Table 9: Balance of fleet average emission deficits remaining in relation to the 2012 model year

Fleet	HC exhaust	$HC+NO_x$ exhaust	CO exhaust	Fuel tank permeation
Snowmobiles		n/a		
Off-road motorcycles	n/a			
Off-road motorcycles – small displacement engines	n/a		n/a	
ATVs and UVs	n/a		n/a	
ATVs and UVs – small displacement engines	n/a		n/a	
ATVs and UVs – alternative engine-based standards, < 225 cc	n/a		n/a	
ATVs and UVs – alternative engine-based standards, ≥ 225 cc	n/a		n/a	

STEP 11) State information from paragraphs 33(3)(*b*) and (*c*) for excluded vehicles under subsection 24(4) (subsection 33(5) of the Regulations).

Explanatory note:

As specified in subsection 33(5) of the Regulations, if the *company* has made the election under subsection 24(4) of the Regulations (to exclude its vehicles that are covered by an EPA certificate and that are sold in greater numbers in the United States than Canada from any of its fleets), it must also include in its report a second set of the information that is specified in paragraphs 33(3)(*b*) and (*c*) (i.e., steps 5 to 7), but with modifications so as to include those vehicles as if they were part of the fleet.

APPENDIX C: Sample Fleet Averaging Calculations for Marine Engines and Off-Road Recreational Vehicles

Example scenario: *Company* XYZ imports 200 personal watercraft (2 emission families) and 300 ATVs (3 emission families) during the 2016 model year. Table 1 presents the values used in calculating the family emission credits and deficits for the marine engines, and Table 2 presents the values used in calculating the fleet average emission values and fleet average emission credits and deficits for the off-road recreational vehicles. The example calculations below are intended to demonstrate how to use the formulas presented in the Regulations. The tables present the values used in these example calculations and do not replace the suggested tables in the template of Appendix B for reporting the information required by the Regulations.

Table 1: Values used in calculating the family emission credits and deficits for the marine engines

Emission type	Emission family	Exhaust standard (g/kW-hr) [S]	FEL (g/kW-hr) [L]	Number of engines in emission family [N]	Maximum engine power in emission family (kW) [P]	Useful life of emission family (hr) [U]
$HC+NO_x$ exhaust	1: GABCM.190Z12	30	25	50	4.0	350
	2: GABCM1.56Z34	= 2.1 + 0.09 × (151 + 557/$\mathbf{P}^{0.9}$) = 2.1 + 0.09 x (151 + 557/$\mathbf{50}^{0.9}$) = 17.2	35	150	50	350
CO exhaust	1: GABCM.190Z12	= 500 − (5.0 × P) = 500 – (5.0 x 4.0) = 480	550	50	4.0	350
	2: GABCM1.56Z34	300	200	150	50	350

Table 2: Values used in calculating the fleet average emission values and fleet average emission credits and deficits for the off-road recreational vehicles

Emission type	Emission family	Total number of emission families in fleet [TOT]	FEL [W_i]	Number of vehicles in emission family [Y_i]	Useful life of emission family [Z_i]	Applicable standard [A]
$HC+NO_x$ exhaust	1: GABCX.234Z12	3	15.0 g/km	50	10 000 km	1.5 g/km
	2: GABCX.567Z34		0.5 g/km	100	10 000 km	
	3: GABCX.890Z56		1.0 g/km	150	10 000 km	
Fuel tank permeation	1: GABCX.234Z12	3	1.8 g/m^2/day	50 x 0.38 m^2 = 19 m^2	5 yrs x 365.24 d/yr = 1826.2 days	1.5 g/m^2/day
	2: GABCX.567Z34		1.0 g/m^2/day	100 x 0.38 m^2 = 38 m^2	5 yrs x 365.24 d/yr = 1826.2 days	
	3: GABCX.890Z56		1.4 g/m^2/day	150 x 0.38 m^2 = 57 m^2	5 yrs x 365.24 d/yr = 1826.2 days	

Note: For fuel tank permeation, Y_i is the number of vehicles in emission family "i" multiplied by the average internal surface area of the vehicles' fuel tanks (m^2) (see section 29 of the Regulations and section 7.15.2 of this document).

Example calculations for marine engines (see section 7.14 of this document)

Calculate the $HC+NO_x$ and CO family emission credits or deficits for each emission family in the fleet of 200 personal watercraft (50 of emission family 1 and 150 of emission family 2), using the formula presented in subsection 26(2) of the Regulations:

$HC+NO_x$ exhaust emissions

For emission family 1,

$HC+NO_x$ family emission credits or deficits

$= (S - L) \times N \times P \times U \times 0.207 \times 10^{-3}$

$= (30 - 25)$ g/kW-hr x 50 x 4.0 kW x 350 hr x 0.207 x 10^{-3} kg/g

$= 72.45$ kg

For emission family 2,

$HC+NO_x$ family emission credits or deficits

$= (S - L) \times N \times P \times U \times 0.207 \times 10^{-3}$

$= (17.2 - 35)$ g/kW-hr x 150 x 50 kW x 350 hr x 0.207 x 10^{-3} kg/g

$= -9672.08$ kg

As per subsection 26(1) of the Regulations, total the $HC+NO_x$ family emission credits and deficits for each emission family to determine the fleet average emission credits or deficit:

$HC+NO_x$ fleet average emission credits or deficit
= $HC+NO_x$ family emission credits for emission family 1 + $HC+NO_x$ family emission credits for emission family 2
= 72.45 kg + -9672.08 kg
= - 9599.63 kg

The result is negative, and therefore the *company* has -9600 kg of $HC+NO_x$ fleet average emission deficits to offset before it submits its end of model year report for the 2016 model year.

CO exhaust emissions

For emission family 1,

CO family emission credits or deficits

$= (S - L) \times N \times P \times U \times 0.207 \times 10^{-3}$

$= (480 - 550)$ g/kW-hr x 50 x 4.0 kW x 350 hr x 0.207 x 10^{-3} kg/g

$= -1014.30$ kg

For emission family 2,

CO family emission credits or deficits

= (S - L) × N × P × U × 0.207 × 10^{-3}

= (300 - 200) g/kW-hr x 150 x 50 kW x 350 hr x 0.207 x 10^{-3} kg/g

= 54 337.50 kg

As per subsection 26(1) of the Regulations, total the CO family emission credits and deficits for each emission family to determine the fleet average emission credits or deficit:

CO fleet average emission credits or deficit
= CO family emission credits for emission family 1 + CO family emission credits for emission family 2
= -1014.30 kg + 54 337.50 kg
= 53 323.20 kg

The result is positive, and therefore the *company* conforms with the CO emission standard for this fleet of personal watercraft engines. In accordance with subsection 27(5) of the Regulations, the 53 323 kg of CO fleet average emission credits are cancelled upon receipt of the end of model year report, and the *company* cannot bank or transfer these credits to another *company*.

Example calculations for off-road recreational vehicles (see section 7.15 of this document).

Calculate the HC+NO_x and fuel tank permeation fleet average emission values, and the fleet average emission credits and deficits, for the fleet of 300 ATVs (50 of emission family 1, 100 of emission family 2, and 150 of emission family 3), using the formulas presented in subsections 29(1) and 30(3) of the Regulations:

HC+NO_x exhaust emissions

HC+NO_x fleet average emission value [B]

$$= \left[\sum_{i=1}^{TOT}(W_i \times Y_i \times Z_i)\right] \div \left[\sum_{i=1}^{TOT}(Y_i \times Z_i)\right]$$

$$= \frac{[(15 \text{ g/km} \times 50 \times 10\,000 \text{ km}) + (0.5 \text{ g/km} \times 100 \times 10\,000 \text{ km}) + (1.0 \text{ g/km} \times 150 \times 10\,000 \text{ km})]}{[(50 \times 10\,000 \text{ km}) + (100 \times 10\,000 \text{ km}) + (150 \times 10\,000 \text{ km})]}$$

= 3.2 g/km

HC+NO_x fleet average emission credits or deficits

$$= (A - B) \times \left[\sum_{i=1}^{TOT}(Y_i \times Z_i)\right]$$

= (1.5 g/km - 3.2 g/km) x [(50 x 10 000 km) + (100 x 10 000 km) + (150 x 10 000 km)]

= -5 100 000.0 g

The result is negative, and therefore the *company* has -5 100 000.0 g of $HC+NO_x$ fleet average emission deficits to offset before it submits its end of model year report for the 2016 model year.

Fuel tank permeation emissions

Fuel tank permeation fleet average emission value [B]

$$= \left[\sum_{i=1}^{TOT}(W_i \times Y_i \times Z_i)\right] \div \left[\sum_{i=1}^{TOT}(Y_i \times Z_i)\right]$$

= [(1.8 g/m^2/d x 19 m^2 x 1826.2 d) + (1.0 g/m^2/d x 38 m^2 x 1826.2 d) + (1.4 g/m^2/d x 57 m^2 x 1826.2 d)]

[(19 m^2 x 1826.2 d) + (38 m^2 x 1826.2 d) + (57 m^2 x 1826.2 d)]

= 1.3 g/m^2/day

Fuel tank permeation fleet average emission credits or deficit

$$= (A - B) \times \left[\sum_{i=1}^{TOT}(Y_i \times Z_i)\right]$$

= (1.5 g/m^2/d - 1.3 g/m^2/d) x [(19 m^2 x 1826.2 d) + (38 m^2 x 1826.2 d) + (57 m^2 x 1826.2 d)]

= 41 637.4 g

The result is positive, and therefore the *company* will obtain 41 637.4 g of fuel tank permeation fleet average emission credits to bank or transfer to another *company* once these credits are reported in the end of model year report for the 2016 model year.

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