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Marine Spark-Ignition Engine and Off-Road Recreational Vehicle Emission Regulations

Statutory authority

Canadian Environmental Protection Act, 1999

Sponsoring department

Department of the Environment

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REGULATORY IMPACT ANALYSIS STATEMENT

(This statement is not part of the Regulations.)

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Description

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The proposed *Marine Spark-Ignition Engine and Off-Road Recreational Vehicle Emission Regulations* (hereinafter referred to as "the proposed Regulations") would introduce standards to reduce smog-forming emissions from marine spark-ignition engines (i.e. outboard motors and personal watercraft) and off-road recreational vehicles (i.e. snowmobiles, off-road motorcycles, all-terrain vehicles and utility vehicles). The proposed Regulations, under the authority of Division 5 of Part 7 of the *Canadian Environmental Protection Act, 1999* (CEPA 1999), would establish Canadian emission standards and test procedures aligned with those of the United States Environmental Protection Agency (EPA). ([see footnote 1](#))

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The combustion of fuels to power engines and vehicles contributes significantly to air pollution, resulting in adverse impacts on the environment and on the health of

Canadians. The proposed Regulations would help to mitigate these impacts by reducing smog-forming emissions, such as hydrocarbons (HC), oxides of nitrogen (NO_x), carbon monoxide (CO) and other pollutants listed as "toxic substances" ([see footnote 2](#)) in Schedule 1 of CEPA 1999, from marine spark-ignition engines and off-road recreational vehicles.

The proposed Regulations would apply to marine spark-ignition engines and off-road recreational vehicles of the 2008 and later model years that are manufactured in or imported into Canada. They would apply to companies in the business of manufacturing, distributing or importing these engines or vehicles for sale in Canada, and to persons who import these engines and vehicles for their own use.

Background

Contribution of emissions from marine spark-ignition engines and off-road recreational vehicles to air pollution in Canada

Air pollution is a serious problem in Canada, and the combustion of fuels to power vehicles and engines is a major contributor to this problem. Emissions from marine engines and off-road recreational vehicles are an important source of air pollutants, particularly since most of these engines and vehicles are often used during periods of warm weather associated with the formation of smog. As well, the direct human health effect of exposure to these emissions is also important, given that operators of the engines and vehicles are often in close proximity to the exhaust system and have direct exposure to the emissions.

The estimated annual contribution of volatile organic compounds ([see footnote 3](#)) (VOCs), NO_x, and CO from these engines and vehicles relative to the total emissions from all mobile sources in Canada and relative to the national emissions inventory ([see footnote 4](#)) is summarized in Table 1.

Table 1: Estimated emissions from marine spark-ignition engines and off-road recreational vehicles in Canada in 2000

	Emissions (kilotonnes)	Percentage Contribution Relative to Mobile Sources	Percentage Contribution to National Inventory*
VOCs	160.5	22.1	6.6
NO_x	2.1	0.13	0.08
CO	381.7	4.6	3.7

* All sources, excluding open sources (e.g. dust from paved and unpaved roads).

NO_x and VOCs are both involved in a series of complex reactions that result in the formation of ground-level ozone, which is a respiratory irritant and one of the major components of smog. Smog is a noxious mixture of air pollutants, consisting primarily of ground-level ozone and particulate matter (PM), that can often be seen as a haze over

urban centres. CO inhibits the capacity of the blood to carry oxygen to organs and tissues. Human health studies indicate that air pollution contributes to premature deaths, to other health-related problems, such as cardiovascular ailments and respiratory distress, and to an increase in the number of emergency room visits and hospital admissions.

Strong actions need to be taken on a continuous basis to reduce emissions from all vehicles and engines, in order to provide a healthier environment for Canadians. To that end, the proposed Regulations would set Canadian emission standards for marine spark-ignition engines and off-road recreational vehicles.

Policy framework

While important progress has been achieved in terms of reducing emissions from other sources, particularly from on-road vehicles, air pollution has continued to be one of Canada's highest environmental priorities and challenges over the past two decades. Emissions from marine engines and off-road recreational vehicles are currently unregulated in Canada, while emission regulations under CEPA 1999 apply to on-road vehicles and engines and other categories of off-road vehicles and engines.

The marine spark-ignition engine component of the proposed Regulations would fulfill one of Canada's commitments under the Ozone Annex to the 1991 Canada-United States Air Quality Agreement (December 7, 2000). Actions under the Ozone Annex are intended to reduce the transboundary flow of ground-level ozone and its precursors (NO_x and VOCs) between the United States and Canada and result in health and environmental benefits in both countries. Under this agreement, Canada committed to "develop and implement . . . emission regulations under the *Canadian Environmental Protection Act, 1999* for new non-road engines aligned with the U.S. federal emissions program" to replace the Marine Spark-Ignition Engine Memorandum of Understanding (MOU) between Environment Canada and manufacturers of spark-ignited marine engines. ([see footnote 5](#)) As an interim measure pending the implementation of the proposed Regulations, an MOU between Environment Canada, the Canadian Marine Manufacturers Association and 11 of its member companies came into effect as of the 2001 model year. Manufacturers, importers and dealers who had agreed to voluntarily supply the Canadian market with outboard motors and personal watercraft designed to meet the emissions standards of the EPA represent approximately 96% of the imported value of outboard motors and personal watercraft. While the Ozone Annex does not contain specific commitments for Canada to adopt regulations for off-road recreational vehicles, regulations for those vehicles will contribute to the objectives of the Agreement.

In June 2000, the Government of Canada, along with the provinces and territories, except Quebec, adopted the Canada-wide Standards for Particulate Matter and Ozone. The Canada-wide Standards set ambient air quality concentration targets for ground-level ozone and fine PM for the year 2010. The proposed Regulations would also contribute toward meeting the targets established under the Canada-wide Standards for Particulate Matter and Ozone.

The Canadian marine spark-ignition engine and off-road recreational vehicle industry

It is estimated that there were approximately 2.8 million outboard motors, personal watercraft, snowmobiles, off-road motorcycles and all-terrain vehicles (ATVs) in use in

Canada in 2000. In 2004, new sales in Canada were composed of approximately 41 600 outboard motors, 4 000 personal watercraft, 48 600 snowmobiles, 89 500 ATVs, and 9 200 off-road motorcycles.

The vast majority of marine engines and off-road recreational vehicles sold in Canada are engines and vehicles designed for the U.S. market. Sales in Canada represent approximately 8% of the Canada-U.S. market, except for snowmobiles, which represent 40% of that market. These engines and vehicles are produced by seven major manufacturers, primarily Japanese and North American multinational companies offering products in more than one category, and are imported by approximately 80 Canadian companies. There is one major manufacturer of snowmobiles, personal watercraft and ATVs in Canada, which sells in Canada and also exports much of its Canadian production, including to the United States. All outboard motors and off-road motorcycles that are sold in Canada are imported.

The proposed Regulations

Technical standards

The proposed Regulations would introduce Canadian emission standards and test procedures aligned with those of the EPA for marine spark-ignition engines established under Title 40, Part 91, ([see footnote 6](#)) of the *Code of Federal Regulations* (CFR), and for off-road recreational vehicles established under Title 40, Part 1051, ([see footnote 7](#)) of the CFR. They would apply to engines and vehicles of the 2008 and later model years that are manufactured on or after January 1, 2008. The following sections summarize the proposed emission standards, emissions averaging program, specifications related to emission-control systems, and other requirements. Any reference to "standards" in the context of the proposed Regulations refers to regulatory standards; for all purposes of interpretation or application of the U.S. rules referenced in the proposed Regulations, please consult the official publication of the U.S. CFR.

Marine spark-ignition engines and off-road recreational vehicles are required to comply with emission standards for a defined "useful life," which is specified in years, hours of operation, or accumulated mileage, whichever comes first, and varies depending on the class of engine or vehicle as shown in Table 2.

Table 2: Useful life of marine spark-ignition engines and off-road recreational vehicles

	Engine Displacement (cubic centimetres)	Years	Hours of Operation	Accumulated Mileage (km)
Outboard Motor	all	10	350	—
Personal Watercraft	all	5	350	—
Snowmobile	all	5	400	8 000
Off-Road Motorcycle	≤ 70	5	—	5 000
	> 70	5	—	10 000

All-terrain Vehicle	< 100	5	500	5 000
	≥ 100	5	1 000	10 000

Exhaust and permeation emission standards

The new exhaust emission standards (using the test procedures specified in the CFR) for marine spark-ignition engines and off-road recreational vehicles are presented in Tables 3 and 4, respectively. For marine engines, the standard for combined HC+NO_x emissions is based on the power rating of the engine as presented in Table 3.

Table 3: HC+NO_x exhaust emission standards for marine spark-ignition engines

Model Year	HC+NO _x Emission Standard (g/kW-h)	
	$P^* < 4.3 \text{ kW}$	$P^* \geq 4.3 \text{ kW}$
2008 and Later	81.00	$0.250 \times \left(151 + \frac{557}{P^{0.9}} \right) + 6.00$

* P is the sales-weighted average power of the engine family in kilowatts.

For off-road recreational vehicles, the standards for HC, combined HC+NO_x, and CO emissions are presented in Table 4.

Table 4: Exhaust emission standards for off-road recreational vehicles

Phase/Model Year	Emission Standards			Maximum Allowable Family Emission Limits		
	HC	HC+NO _x	CO	HC	HC+NO _x	CO
Snowmobiles (g/kW-h)						
Phase 1 (2008-2009)	100	—	275	—	—	—
Phase 2 (2010 and 2011)	75	—	275	—	—	—
Phase 3 (2012 and later)	75 ^a	—	a, b	150 ^a	—	400 ^a
Off-Road Motorcycles (g/km)^c						
Phase 1 (2008 and later)	—	2.0	25	—	20.0	50
All-Terrain Vehicles (g/km)^c						
Phase 1 (2008 and later)	—	1.5	35	—	20.0	—

^a The CFR contains Phase 3 standards for snowmobiles applicable to the 2012 and later model years; however, these standards are currently undergoing review by the EPA pursuant to a court ruling. An amendment to the CFR in respect of these standards is expected in the future.

^b The CO standard is based on a formula; please consult the CFR.

^c Optional standards exist for off-road motorcycles and ATVs that have small displacement engines. Temporary engine-based standards exist for 2008 model year ATVs.

The permeation emission standards for off-road recreational vehicles of the 2008 and later model years are 1.5 and 15 grams per metre squared per day ($g/m^2/day$) for vehicle fuel tanks and fuel lines, respectively.

Marine spark-ignition engines and off-road recreational vehicles that are manufactured or imported for sale in Canada are required to conform to the exhaust and permeation emission standards through one of the following options:

1. Conforming directly to the applicable standard;
2. Being covered by an EPA certificate of conformity and sold concurrently in Canada and in the United States; or
3. Conforming to a family emission limit in lieu of the standard and conforming on the basis of emissions averaging.

Engines and vehicles covered by an EPA certificate

Given that the proposed Regulations would establish emission standards in Canada that are aligned with the EPA, the proposed Regulations would allow for the acceptance of engines and vehicles covered by an EPA certificate of conformity, provided that the engines and vehicles

1. are sold concurrently in Canada and in the United States; and
2. meet the standards or family emission limits referred to in the EPA certificate with respect to that engine or vehicle.

Emissions averaging and system of credits

The proposed Regulations would establish an optional emissions averaging program for marine engines and off-road recreational vehicles. The program would provide flexibility to allow companies to certify their engines and vehicles to a family emission limit that is less stringent than the prescribed standard, as long as the increased emissions are offset, on a sales-weighted basis, by engines or vehicles certified to a family emission limit that is better than the standard.

Under the emissions averaging program for marine engines, a company must calculate its sales-weighted HC+NO_x "emission credits" for each engine family in its fleet of outboard motors and personal watercraft in each model year. The sum of these credits, referred to as "fleet average emission credits," must be greater than or equal to zero, otherwise the company incurs a deficit which must be offset. The formula for calculating the emission credits is incorporated by reference from the CFR.

Under the emissions averaging program for off-road recreational vehicles, a company must calculate its sales-weighted "fleet average emission value" for each type of emission (i.e. HC, HC+NO_x, and CO exhaust and permeation emissions, as applicable) in each model year. Separate calculations are made for a company's fleets of snowmobiles, off-road motorcycles, ATVs, and utility vehicles. ATVs and utility vehicles may be combined into one fleet at the option of the company. The fleet average emission value must be less than the applicable standard, in which case the company generates credits, or, if not, it incurs a deficit which must be offset. The methods of calculating the fleet average emission values and fleet average emission credits are consistent with those set out in the corresponding EPA rule.

The fleet average emission credits may be used in subsequent model years by the company or another company to offset a deficit. Fleet average emission deficits must be offset in the model year in which they are incurred by using previously generated credits or by obtaining credits from another company. For the 2008 model year only, a deficit that is incurred in that model year in relation to exhaust emissions may be offset by the time the company submits its end of model year report for the 2010 model year. In the case of off-road recreational vehicles, a deficit that is incurred in relation to evaporative emissions in the 2008 to 2010 model years may be offset when the end of model year report for the 2011 model year is submitted.

Fleet average emission credits generated from one fleet cannot be used to offset a deficit from another fleet. Similarly, credits generated for one type of emission (i.e. HC, HC+NO_x, CO and fuel tank permeation) can only be used to offset deficits associated with the same type of emission. The fleet average emission credits for outboard motors and personal watercraft can be used, either by that company or by another company, in the three model years following the model year in which the credits were generated and otherwise expire at the end of that period. Emission credits generated by a fleet of off-road recreational vehicles do not expire.

A company may exclude from its fleets its engines and vehicles that are covered by an EPA certificate and that are sold in greater numbers in the United States than in Canada. However, in so doing, the company forfeits all previously obtained credits for that fleet and does not obtain any credits for that model year.

The proposed Regulations would also require each company to submit to Environment Canada an end of model year report, no later than May 1 of the calendar year following each model year, containing a statement that the company's engines and vehicles either (1) conform directly to the emission standard; (2) are covered by an EPA certificate and are sold concurrently in Canada and the United States; or (3) conform on the basis of emission averaging. Under option 3, the company must also report their fleet average emission values, fleet average emission credits/ deficits, and all values used in the calculations. A company that uses option 2 must also report these values even though it is not choosing to conform on the basis of fleet averaging.

The general approach proposed for emissions averaging is similar to that used in the *On-Road Vehicle and Engine Emission Regulations* for light-duty vehicles. Environment Canada has analyzed companies' fleet average emissions data for Canadian on-road light-duty vehicles of the 2004 model year. The results of the analysis demonstrate that the emissions averaging approach resulted in fleet average NO_x values below the applicable standards for these vehicle fleets. Accordingly, the Department believes that accepting EPA certification and a flexible approach to emissions averaging delivers fleet average emissions comparable to that of the United States. The approach under the proposed Regulations would be monitored to ensure that Environment Canada's environmental objective is met on a sustained basis.

Other emission standards

The proposed Regulations would also require that no crankcase emissions be released from the prescribed engines and vehicles. General provisions concerning the performance of emission-control devices and a prohibition on the use of a defeat device are included in the proposed Regulations. A defeat device is any element of design that reduces the effectiveness of the emission-control system under conditions of normal engine or vehicle operation that are not substantially covered by the certification tests. Engines and vehicles equipped with adjustable parameters must comply with all requirements of the proposed Regulations, regardless of how the parameters are adjusted.

Alternative standards are available for replacement engines manufactured exclusively to replace an existing engine in an outboard motor or personal watercraft for which no current model year engine with the necessary physical or performance characteristics required for the operation of the engine exists.

National emissions mark

The provisions of Division 5 of Part 7 of CEPA 1999 prohibit a company from affixing a "national emissions mark" label to a vehicle or engine, or importing a vehicle or engine, unless it complies with the applicable standards set out in the proposed Regulations. The proposed Regulations would establish the form of the national emissions mark, set out the manner of obtaining the Minister's authorization to use it, and prescribe other related requirements. The prescribed engines and vehicles that are manufactured in Canada would be required to have the national emissions mark affixed to them as a condition of their transport between provinces or territories by a company.

Record-keeping and other administrative requirements

In addition to the technical standards described in the previous sections, the proposed Regulations would include record-keeping and several administrative-type provisions that would be necessary to operate and enforce the legislative scheme.

Alternatives

A number of alternatives were examined, as discussed below.

No emissions standards

Emissions from marine engines and off-road recreational vehicles contribute to air pollution in Canada. Given that the usage and population of these products are expected to grow, the contribution to air pollution from these engines and vehicles is also expected to increase over time. Technology to reduce emissions from these engines and vehicles also exists and is applicable. Hence, the option of having no emission standards does not take advantage of the opportunity for reduction of emissions that have adverse impacts on air quality and human health.

While the majority of marine engines and off-road recreational vehicles sold in Canada already comply with EPA standards, it is important to recognize that a portion of these products do not. The absence of regulations in Canada leaves the Canadian market vulnerable to increasing volumes of "non-complying" products. The proposed Regulations would establish an enforceable framework that creates a level playing field to require all companies operating in Canada to sell cleaner engines and vehicles.

This option was therefore rejected.

Voluntary emission standards

Environment Canada currently has a Marine Spark-Ignition Engine MOU in place with the Canadian Marine Manufacturers Association, including 11 of its member companies. Under the MOU, major engine manufacturers, importers and dealers agree to voluntarily supply the Canadian market with engines designed to conform to the EPA emission standards for outboard motors and personal watercraft of the 2001 and later model years. The MOU for marine engines is successful in achieving emission reductions from engines sold by the MOU signatories; however, the MOU does not apply to all companies that import or distribute marine engines in Canada.

The MOU was intended to be an interim measure pending the implementation of the proposed Regulations. As stated in the Ozone Annex to the 1991 Canada-United States Air Quality Agreement, ". . . this is an interim measure that will be overtaken and replaced by the regulation. . . ." The voluntary emission standards option for marine engines would therefore not fulfill Canada's commitment under the Ozone Annex.

In the case of off-road recreational vehicles, the option of developing an MOU to align emission standards with those being introduced for the first time in the U.S. 2006 model year was not pursued. A new regulatory framework would ensure that no single company is allowed to manufacture or import vehicles and engines that do not meet the established standards and put other companies under competitive pressure to do likewise. The proposed Regulations would also provide the flexibility necessary for manufacturers and importers to operate in a competitive market, together with enforceability that offers a high level of environmental protection for Canadians. Given the importance of environmental protection and improving air quality, the federal government determined that a regulatory framework is appropriate for controlling emissions from marine engines and off-road recreational vehicles.

Accordingly, continuation of voluntary emission standards for marine engines was rejected, as was implementing an MOU for off-road recreational vehicles.

Regulations with unique Canadian standards

Currently, most of the marine spark-ignition engines sold in Canada already conform to the progressive EPA standards. In the case of off-road recreational vehicles sold in Canada, it is anticipated that a large portion of these would also conform to the EPA standards which began phasing-in in the United States in the 2006 model year. If Canada were to adopt regulatory emission standards that are more stringent than those in the United States, the cost of marine engines and off-road recreational vehicles designed to meet unique Canadian standards would be expected to increase, while potentially reducing product availability. If Canada were to adopt regulatory standards less stringent than those of the EPA, environmental and health benefits would be reduced. Overall, unique Canadian standards would entail additional design and manufacturing costs and also require extensive development of testing and certification procedures. The higher costs would likely be passed on to consumers in the form of higher prices.

In addition, adopting unique Canadian standards would also conflict with the established policy of aligning standards for smog-forming emission with the EPA standards and the trend towards global harmonization of emission standards.

Accordingly, the adoption of unique Canadian standards was rejected.

Regulations aligned with the United States

In the context of the highly integrated Canadian and U.S. engine and vehicle industry and the progressive nature of U.S. federal emission standards, there has been broad support from stakeholders (i.e. industry, other government departments, and environmental non-governmental organizations) for the policy of Canada-United States alignment of emission standards. This support was evidenced throughout the consultation process associated with the regulatory development processes for the three on-road and off-road vehicle and engine emission regulations that are in effect under CEPA 1999. Aligning with U.S. rules allows for significant reductions in emissions and is cost-effective for companies and consumers. The proposed Regulations for marine engines and off-road recreational vehicles would introduce emission standards and test procedures aligned with those of the EPA.

The proposed Regulations would take into account the fact that most of the marine engines and off-road recreational vehicles sold in Canada are designed for and marketed in the United States. Accordingly, the proposed Regulations would allow a company to choose from three options to comply with the emission standards. Option 1 would allow a company to certify its engines and vehicles directly to the emission standard, without relying on EPA certification or emission averaging. Under option 2, the proposed Regulations would specifically recognize engines and vehicles covered by an EPA certificate that are sold concurrently in both countries and would allow a company to conform to the standards referred to in the EPA certificate of conformity. The reason option 2 is possible is because Canada's emission standards for vehicles and engines would be aligned with those of the United States, directly incorporating the U.S. standards and test procedures by reference to the U.S. CFR. Under option 3, a company would be able to demonstrate compliance with the standard on the basis of emissions averaging. Emissions from the company's engines and vehicles that conform to a family emission limit that is higher than the prescribed standard would be offset, on a sales-weighted basis, by emissions from engines or vehicles that conform to a family emission

limit that is better than the standard. The resultant average emission level from the company's fleet of engines or vehicles would have to be equal to or better than the applicable standard.

The proposed Regulations are structured in a manner that would

- deliver the environmental objective of reducing emissions from these engines and vehicles by aligning Canadian standards and test procedures with those of the EPA;
- minimize the regulatory burden on companies; and
- allow companies to market marine spark-ignition engines and off-road recreational vehicles in Canada independently from the United States.

Competitive markets for Canadian marine spark-ignition engines and off-road recreational vehicles would be maintained, while the adverse environmental and health impacts of emissions from these engines and vehicles would be reduced.

Alignment with EPA emission standards represents the most cost-effective alternative for Canada to achieve its desired environmental objectives, and was therefore chosen.

Benefits and costs

Benefits

Emission reductions

The proposed Regulations would introduce, for the first time in Canada, regulated emission standards for marine spark-ignition engines and off-road recreational vehicles. The allowable levels of HC and CO from snowmobiles would be reduced, on a per-vehicle basis, by approximately 50% and 31% respectively, compared to current average emission levels. Similarly, the allowable levels of HC and CO from off-road motorcycles and ATVs would be reduced, on a per-vehicle basis, by up to approximately 96% and 26%, respectively, compared to current average emission levels.

It takes several years for existing higher-emitting engines and vehicles to be replaced by the new compliant engines and vehicles. Therefore, over time, progressively greater reductions of multiple air pollutants emitted from the in-use fleet of engines and vehicles would occur.

To illustrate the emission reductions, Environment Canada estimated the emissions over the period 2000 to 2025, using the EPA NONROAD ([see footnote 8](#)) model with Canadian input data. For comparison purposes, two scenarios for emission forecasts were modelled: a base case scenario and a regulated scenario.

The base case scenario emission forecast represents the current situation where most marine engines supplied in Canada are compliant with the existing Marine Spark-Ignition Engine MOU and there are no emission standards for off-road recreational vehicles. It is assumed that there is a 90% penetration rate of EPA-compliant marine engines and that no EPA-compliant off-road recreational vehicles will enter into the Canadian market. However, it is recognized that, in reality, there would be a certain degree of penetration of

EPA-compliant recreational vehicles even if there were no regulations in Canada. Given that the U.S. regulations are currently being phased in, it is difficult to reliably gauge the proportion of vehicles sold in Canada that would be designed to meet U.S. standards. Based on an analysis of importation data, it has been estimated that up to 90% of the recreational vehicles sold in Canada could conform to the U.S. standards. Accordingly, the estimated emission reductions for recreational vehicles presented below should be considered as a maximum, with only a portion of the emission-reduction benefits being directly attributable to the proposed Regulations (i.e. an emission reduction of up to 9%, depending on the pollutant, would be directly attributable to the Regulations if a 90% compliance rate were to occur without having a regulation). However, as noted previously, the absence of regulations in Canada leaves the Canadian market vulnerable to increasing volumes of "non-complying" products. The regulated scenario assumes 100% compliance of marine engines and off-road recreational vehicles with the proposed Regulations.

Using the U.S. NONROAD model and emissions factors from a study conducted for Environment Canada by SENES Consultants Limited, emission estimates for the year 2025 have been calculated for HC+NO_x, CO, and other substances on the List of Toxic Substances, Schedule 1 of CEPA 1999, as shown in Table 5. The estimates indicate that cleaner marine engines and off-road recreational vehicles would result in a 51% reduction of combined HC+NO_x emissions in 2025, compared to the base case. Similarly, CO emissions would be reduced by 33%.

Table 5: Emission reductions of HC+NO_x, CO, and other toxic substances from marine spark-ignition engines and off-road recreational vehicles in 2025

	Base Case Emissions in 2025 (kilotonnes)	Emissions in 2025 with Regulations (kilotonnes)	Percentage Reduction in 2025 (Regulations vs. Base Case)
HC+NO_x*	232.7	114.3	50.9
CO	652.4	434.8	33.3
PM₁₀	7.9	5.2	34.1
Acetaldehyde	0.2	0.09	51.0
Acrolein	0.07	0.03	60.1
Benzene	2.6	1.7	33.2
1,3-butadiene	0.5	0.4	27.4
Formaldehyde	1.2	0.5	55.2

* HC and NO_x are a combined emission standard.

Table 5 shows that cleaner marine engines and off-road recreational vehicles would also result in significant reductions of toxic substances. Although there are no specific limits for these substances in the proposed Regulations, the application of improved engine and emission-control technologies used to meet HC standards has the effect of reducing these substances.

Further, the engine technology improvements associated with meeting the proposed standards are also expected to reduce fuel consumption and maintenance. The fuel efficiency improvement achieved, for example, by changing from a conventional two-stroke to a four-stroke engine has been estimated to be up to 55%. On a per-engine or per-vehicle basis, this expected reduction in fuel consumption would also result in lower emissions of carbon dioxide, a key greenhouse gas that contributes to climate change.

Health and environmental benefits

The air quality and health benefits associated with the reduction in emissions resulting from the proposed Regulations are discussed qualitatively, as these benefits from this single regulatory initiative are challenging to quantify and monetize. While it is recognized that the reduced emissions would contribute to further reducing the health and environmental impacts of air pollution, it is difficult to isolate the impact that is directly attributable to emissions from marine engines and off-road recreational vehicles. Similarly, the EPA stated in 2002 in its support document for the final rule for recreational vehicles that the health benefits could not be estimated with sufficient reliability, and that their omission reflects inability to measure them and does not indicate their lack of importance in the consideration of the benefits of the rulemaking.

The reduction of emissions resulting from the proposed Regulations would contribute to increased health and environmental benefits for Canadians. By ensuring the emission reductions through a regulatory framework, the proposed Regulations would further improve air quality and reduce exposure to air pollutants and the toxic substances identified in Table 5. Such positive impacts would translate into social benefits, which include further reduction in adverse health impacts, restricted activity days, hospital admissions, work loss days, and premature mortality, as well as further reductions in smog and environmental damage to crops and other vegetation.

Benefits to industry

In addition to the health and environmental benefits, the proposed Regulations would create a level playing field for companies supplying the Canada-U.S. market for marine spark-ignition engines and off-road recreational vehicles. At the domestic level, it would ensure that all manufacturers, importers and distributors operating in this competitive market comply with the same standards.

As well, the emissions averaging provisions would minimize the regulatory burden for manufacturers by providing them with the flexibility to adjust and develop their own technological solutions in order to achieve emission reductions.

Furthermore, given that the emission certification process for engines and vehicles is complex and costly for manufacturers and governments, aligning Canada's emission standards and test procedures with those of the EPA would allow Canada to benefit from the EPA's emission certification program. This would result in significant cost savings for Canadian companies, the federal government and Canadian consumers.

Benefits to consumers

As indicated previously, the engine technology improvements associated with meeting

the proposed standards are also expected to provide additional benefits to consumers, through reduced fuel consumption and maintenance.

Benefits to the Government

As indicated previously, aligning the emission standards in Canada with those of the United States would allow Canada to benefit from the U.S. emission certification program. This would lead to more efficient administration and compliance monitoring of the proposed Regulations, which would result in considerable cost savings.

The proposed Regulations would also enable Canada to meet its commitment under the Ozone Annex to the 1991 Canada-United States Air Quality Agreement, as explained earlier in this document.

Costs

Costs to industry

The increased costs to manufacturers to meet U.S. emission standards have been estimated by the EPA in their regulatory impact analyses associated with the U.S. rules. The EPA estimated that, in order for manufacturers to meet the U.S. off-road recreational vehicle standards, the longer-term (2006–2030) incremental costs for manufacturers to design, certify and build compliant products are expected to range from CAN\$60 ([see footnote 9](#)) (US\$50) to CAN\$1,090 (US\$900) per snowmobile, less than CAN\$120 (US\$100) on average for an ATV, and less than CAN\$240 (US\$200) on average for off-road motorcycles. It is also recognized that the majority of products sold in Canada are imported and that, typically, the increased costs to manufacturers are passed on to the importer, although the proportion of the cost transferred may vary due to many factors, including product demand.

Given that the majority of marine engines currently comply with the 2006 model year standards under the Marine Spark-Ignition Engine MOU, there would be no incremental cost associated with the proposed Regulations for marine engines for the majority of companies.

Given that most off-road recreational vehicles sold in Canada are designed for both the U.S. and Canadian markets, much of the technology development and manufacturing changes required to meet the new more stringent standards in the proposed Regulations would have already been implemented by manufacturers in order to comply with the EPA rules already in place in the United States. Accordingly, much of the increased cost would likely be incurred in Canada regardless of having a regulation in Canada. Using the 2004 sales data presented previously along with the estimated incremental per-vehicle costs shown above, the maximum incremental cost to the recreational vehicle industry is estimated at approximately \$40 million per year. However, based on the estimate that up to 90% of the off-road recreational vehicles that enter into the Canadian market could be EPA-compliant regardless of having a regulation in Canada, the estimated cost impact on industry should be considered as a maximum limit, with the actual costs directly attributable to the proposed Regulations likely being considerably lower and estimated to be approximately \$4 million.

There would also be some incremental administrative costs for industry associated with record keeping, reporting and affixing the national emissions mark. This is estimated to be approximately \$85,000 annually.

Costs to consumers

Consumers would likely bear the incremental costs through an increase in prices of marine engines and off-road recreational vehicles. However, as indicated previously, it is expected that these costs would be partially offset by savings from reduced operating costs. Reduced fuel consumption and engine maintenance would result from the implementation of technology improvements used to control emissions.

Costs to the Government

The federal government would incur incremental costs associated with the administration of the proposed Regulations to supplement the existing program of several integrated initiatives to reduce emissions from vehicles, engines and fuels. The major cost components would include regulatory administration, compliance promotion, compliance verification, laboratory upgrades to allow for emissions testing of marine engines and off-road recreational vehicles, and enforcement activities. The annual cost to the Government for an effective program to implement the proposed Regulations would vary from year to year and is estimated to be up to \$1 million per year during the initial years of implementation.

Overall effectiveness

In the support documents ([see footnote 10](#)) for its final rules for marine engines and off-road recreational vehicles, the EPA reported that the cost-effectiveness of the standards for the rules (i.e. US\$1,026/ton for marine engines and US\$20/ton-\$1,370/ton for off-road recreational vehicles) was comparable to the cost per ton values of rules for other on-road and off-road vehicles and engines (i.e. range from US\$24/ton to US\$2,800/ton). Furthermore, the EPA compared the cost-effectiveness of the rule for off-road recreational vehicles to the average cost of various potential future technologies that were identified to achieve the emission reductions needed to meet National Ambient Air Quality Standards (NAAQS). These are part of a regulatory impact analysis for the PM and ozone NAAQS and regional haze rule (i.e. US\$5,000/ton to \$40,000/ton). The EPA concluded that future emission-control strategies necessary to meet the NAAQS are likely to be more expensive than the rules for marine engines and off-road recreational vehicles.

Given the similar nature of the U.S. and Canadian markets for engines and vehicles, and the fact that the incremental costs associated with the proposed Regulations are low, the proposed Regulations are anticipated to yield similar cost efficiencies.

Competitiveness implications

The proposed Regulations are not expected to have any negative impact on the competitiveness of the marine spark-ignition engine and off-road recreational vehicle industries in Canada, or on the industrial sectors using such engines and vehicles in their operations. The Canadian vehicle manufacturing industry operates on a North American

basis, manufacturing products that already comply with EPA emission standards (with which the proposed Regulations would be aligned). Therefore, industry is not expected to be adversely affected by the proposed Regulations. Also, there would be no anticipated negative competitiveness implication for distributors of marine engines and off-road recreational vehicles, as they would have access to models that are already certified for the U.S. market. Given that the majority of engines and vehicles sold in Canada are designed for both the U.S. and Canadian markets, implementing harmonized regulations with the United States would create a level playing field for companies and support the competitiveness of the Canadian manufacturing industry and that of Canadian distributors of these engines and vehicles.

Consultation

In recent years, several regulations have been adopted based on a policy of alignment with U.S. standards, including the *On-Road Vehicle and Engine Emission Regulations*, the *Off-Road Small Spark-Ignition Engine Emission Regulations* and the *Off-Road Compression-Ignition Engine Emission Regulations*. The consultations associated with the development of each of these regulations revealed a broad consensus that Canada's regulatory emission standards for on-road and off-road vehicles and engines should be based on alignment with corresponding U.S. federal requirements. Stakeholders have generally identified that the integrated nature of the Canada/U.S. economy, and the implementation of aggressive national programs for on-road and offroad vehicles and engines by the EPA, are two key elements supporting a policy of alignment with U.S. federal programs as a logical approach for Canada to achieve significant emission reductions in a cost-effective manner.

In August 2004, a discussion document outlining the planned approach of the proposed Regulations was released by Environment Canada to interested parties and was posted on the Department's CEPA Environmental Registry ([see footnote 11](#)) to ensure wide availability and accessibility. Subsequent discussions were held with various industry associations and companies to clarify specific technical elements of the discussion document.

Environment Canada received comments on the discussion document from six interested parties. The comments received and discussions held indicated support for several aspects of the proposed Regulations and for the approach of having Canadian regulated emission standards aligned with U.S. federal standards.

The Ontario Ministry of the Environment was pleased that the federal government was taking steps to regulate emissions from marine engines used for recreation, but encouraged the federal government to consider adopting emission standards for recreational marine engines similar to those that have been adopted by the states of New York and California. The EPA has initiated a process of developing a proposal for new emission standards for outboard motors and personal watercraft that will be similar to those of California. To the extent possible, the proposed Regulations are structured to maintain alignment with U.S. standards as they are updated. Environment Canada intends to review the new U.S. rules when they are finalized and will consider taking any necessary steps to ensure alignment.

In response to comments received, Environment Canada made the following technical changes:

- new short-term provisions for manufacturers and importers of small volumes of vehicles (i.e. less than 200) are incorporated;
- alternative standards for ATVs using engine-based test procedures are incorporated;
- the definition of a "competition vehicle" corresponds with criteria outlined in the U.S. federal rule, and a label indicating that the vehicle is a competition vehicle is required;
- a more simplified approach to the emissions averaging program is proposed for all engines and vehicles; equations related to emissions averaging for marine engines are directly incorporated by reference from the CFR, in lieu of ones originally proposed in Environment Canada's discussion document; and
- requirements for an information hang tag are removed.

A detailed summary of the comments received and Environment Canada's responses are available in the "reply to comments on the Discussion Document – Marine Spark-Ignition Engine and Off-Road Recreational Vehicle Emission Regulations" document ([see footnote 12](#)) available on Environment Canada's CEPA Registry.

A non-official draft of the proposed Regulations was also distributed to known importers and manufacturers of marine engines and off-road recreational vehicles, in order to identify any possible outstanding technical issues. Comments were received from two industry associations and two manufacturers, indicating that it would not be feasible to deliver products that would meet the new emission requirements in time for the previously targeted coming into force date of January 1, 2007 (as described in the August 2004 discussion document). Environment Canada agreed, and the proposed coming into force date was changed to January 1, 2008, to provide adequate lead time for compliance. Commenters also sought clarification on technical aspects of the draft regulations and, as a result, other minor changes were made to add clarity and address technical issues.

Compliance and enforcement

Environment Canada administers a comprehensive program to monitor compliance with vehicle and engine emission standards. Manufacturers and importers are responsible for ensuring that their products comply with the proposed Regulations and are required to maintain and produce evidence of such conformity. Environment Canada's program to monitor compliance includes

- authorizing and monitoring use of the national emissions mark;
- monitoring vehicle and engine importation;
- reviewing company evidence of conformity;
- monitoring data submission for compliance with the emissions averaging program;
- registering company notices of defects affecting emission controls;
- inspection of test engines and vehicles and their emission-related components; and
- laboratory emissions tests of sample new engines and vehicles that are representative of products offered for sale in Canada.

Environment Canada plans to co-ordinate efforts with the EPA by sharing information to increase program efficiency and effectiveness.

If an engine or vehicle is found to not comply with the proposed Regulations, the manufacturer or importer will be subject to the enforcement provisions of CEPA 1999. In this situation, the normal course of events is to first perform an engineering assessment to determine if a notice of defect should be issued.

Environment Canada also plans to undertake various compliance promotion activities, such as providing information to regulatees concerning the requirements of the proposed Regulations; maintaining a Web page related to the proposed Regulations on Environment Canada's CEPA Environmental Registry to make such information widely available; distributing advisory emails and letters; and responding to inquiries, as required.

Environment Canada's Compliance and Enforcement Policy ([see footnote 13](#)) for CEPA 1999 will be applied when verifying compliance with the proposed Regulations. This Policy sets out the range of possible responses to alleged violations, including warnings, directions, 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.

To verify compliance, enforcement officers may carry out an inspection. An inspection may identify an alleged violation, and alleged violations may also be identified by Environment Canada's technical personnel, through information transmitted to the Department by the Canada Border Services Agency or through complaints received from the public. Whenever a possible violation of the proposed Regulations is identified, enforcement officers may carry out investigations.

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

- *Nature of the alleged violation:* This includes consideration of the damage, 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 the Act.
- *Effectiveness in achieving the desired result with the alleged violator:* The desired result is compliance within the shortest possible time with no further repetition of the violation. Factors to be considered include the violator's history of compliance with the Act, willingness to co-operate with enforcement officers, and evidence of corrective action already taken.
- *Consistency in enforcement:* Enforcement officers will consider how similar situations have been handled in determining the measures to be taken to enforce the Act.

Contacts

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Analysis and Research Directorate, Environment Canada, 10 Wellington Street, Gatineau, Quebec K1A 0H3, 819-953-5236 (telephone), 819-997-2769 (fax), markes.cormier@ec.gc.ca (email).

PROPOSED REGULATORY TEXT

Notice is hereby given, pursuant to subsection 332(1) ([see footnote a](#)) of the *Canadian Environmental Protection Act, 1999* ([see footnote b](#)) that the Governor in Council, pursuant to sections 160 and 162 of that Act, proposes to make the annexed *Marine Spark-Ignition Engine and Off-Road Recreational Vehicle Emission Regulations*.

Interested persons may, within 60 days after the date of publication of this notice, file with the Minister of the Environment comments with respect to the proposed Regulations or a notice of objection requesting that a board of review be established under section 333 of that Act and stating the reasons for the objection. All comments and notices must cite the *Canada Gazette*, Part I, and the date of publication of this notice, and be addressed to Steve McCauley, Director, Transportation Division, Clean Air Directorate, Environmental Stewardship Branch, Department of the Environment, Ottawa, Ontario K1A 0H3.

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

Ottawa, December 14, 2006

MARY O'NEILL
Assistant Clerk of the Privy Council

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

INTERPRETATION

Definitions

"Act"

« *Loi* »

"all-terrain vehicle"

« *véhicule
tout terrain* »

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

"Act" means the *Canadian Environmental Protection Act, 1999*.

"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 by the operator and with handlebars for steering, and is designed to be used by a single operator and no passengers; or

(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.

<p>"CFR" « <i>CFR</i> »</p> <p>"CFR 91" « <i>CFR 91</i> »</p> <p>"CFR 1051" « <i>CFR 1051</i> »</p> <p>"CFR 1065" « <i>CFR 1065</i> »</p> <p>"crankcase emissions" « <i>émissions du carter</i> »</p> <p>"element of design" « <i>élément de conception</i> »</p> <p>"emission control system" « <i>système antipollution</i> »</p> <p>"engine family" « <i>famille de moteurs</i> »</p> <p>"EPA" « <i>EPA</i> »</p> <p>"EPA certificate" « <i>certificat de l'EPA</i> »</p> <p>"evaporative emissions" « <i>émissions de gaz d'évaporation</i> »</p>	<p>"CFR" means Title 40, chapter I of the <i>Code of Federal Regulations</i> of the United States.</p> <p>"CFR 91" means subchapter C, part 91, of the CFR as amended from time to time.</p> <p>"CFR 1051" means subchapter U, part 1051, of the CFR as amended from time to time.</p> <p>"CFR 1065" means subchapter U, part 1065, of the CFR as amended from time to time.</p> <p>"crankcase emissions" means substances that cause air pollution and that are emitted into the atmosphere from any portion of the engine crankcase ventilation or lubrication systems.</p> <p>"element of design" means, in respect of a marine engine or an off-road recreational vehicle, (a) any control system, including computer software, electronic control systems and computer logic; (b) any control system calibrations; (c) the results of systems interaction; or (d) any hardware items.</p> <p>"emission control system" means any device, system or element of design that controls or reduces the exhaust emissions from a marine engine or an off-road recreational vehicle.</p> <p>"engine family" means (a) in respect of a company's marine engines and off-road recreational vehicles that are covered by an EPA certificate, the classification unit for which the EPA certificate was issued; and (b) in respect of any other of the company's marine engines and off-road recreational vehicles, the classification unit determined in accordance with section 115 of subpart B of CFR 91 for marine engines and section 230 of subpart C of CFR 1051 for off-road recreational vehicles.</p> <p>"EPA" means the United States Environmental Protection Agency.</p> <p>"EPA certificate" means a certificate of conformity to United States federal standards issued by the EPA.</p> <p>"evaporative emissions" means hydrocarbons emitted into the atmosphere from a vehicle, other than exhaust emissions and crankcase emissions.</p>
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<p>"exhaust emissions" « <i>émissions de gaz d'échappement</i> »</p>	<p>"exhaust emissions" means substances emitted into the atmosphere from any opening downstream from the exhaust port of an engine.</p>
<p>"family emission limit" « <i>limite d'émissions de la famille</i> »</p>	<p>"family emission limit" means the maximum emission level established by a company for an engine family for the purpose of fleet averaging.</p>
<p>"marine engine" « <i>moteur nautique</i> »</p>	<p>"marine engine" means an engine that is of a class prescribed under subsection 6(1).</p>
<p>"model year" « <i>année de modèle</i> »</p>	<p>"model year" means the year, as determined under section 5, that is used by a manufacturer to designate a model of marine engine or off-road recreational vehicle.</p>
<p>"off-road motorcycle" « <i>motocyclette hors route</i> »</p>	<p>"off-road motorcycle" means a two-wheeled vehicle that is equipped with a seat.</p>
<p>"off-road recreational vehicle" « <i>véhicule récréatif hors route</i> »</p>	<p>"off-road recreational vehicle" means a vehicle that is of a class prescribed under subsection 6(2).</p>
<p>"outboard motor" « <i>hors-bord</i> »</p>	<p>"outboard motor" means a unit that is designed to propel a vessel, is external to the hull of the vessel and houses the engine and drive unit.</p>
<p>"permeation emissions" « <i>émissions par perméation</i> »</p>	<p>"permeation emissions" means evaporative emissions resulting from the permeation of fuel through fuel system materials.</p>
<p>"personal watercraft" « <i>motomarine</i> »</p>	<p>"personal watercraft" means a water-jet driven vessel with an enclosed hull.</p>
<p>"snowmobile" « <i>motoneige</i> »</p>	<p>"snowmobile" means a vehicle, including a vehicle that can be converted into a snowmobile, designed primarily for travel on snow, with a maximum width of 1.5 m.</p>
<p>"utility vehicle" « <i>véhicule utilitaire</i> »</p>	<p>"utility vehicle" means a vehicle that is designed for operation over rough terrain and</p> <p>(a) has four or more wheels and seating for two or more persons;</p> <p>(b) has an engine displacement of 1000 cm³ or less, a maximum engine brake power of 30 kW or less and a maximum vehicle speed of at least 40 km/h; and</p> <p>(c) has either a rear payload of 150 kg (350 pounds) or more or seating for six or more passengers.</p>

Incorporation by reference

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

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

Meaning of "nonroad vehicle" and "nonroad engine"

(3) For the purposes of these Regulations,

- (a) a reference in CFR 1051 to "nonroad vehicle" shall be read as "off-road recreational vehicle"; and
- (b) a reference in CFR 91 to "nonroad engine" shall be read as "marine engine".

Purpose

PURPOSE

2. The purpose of these Regulations is to

- (a) reduce emissions of hydrocarbons, oxides of nitrogen and carbon monoxide from marine engines and off-road recreational vehicles by establishing emission limits for those substances or combinations of those substances;
- (b) reduce emissions of the toxic substances formaldehyde, 1,3-butadiene, acetaldehyde, acrolein and benzene through the establishment of emission limits for hydrocarbons from marine engines and off-road recreational vehicles; and
- (c) establish emission standards and test procedures for marine engines and off-road recreational vehicles that are aligned with those of the EPA.

Background

BACKGROUND

3. These Regulations set out

- (a) prescribed classes of marine engines and off-road recreational vehicles for the purposes of section 149 of the Act;
- (b) requirements respecting the conformity of marine engines and off-road recreational vehicles with emission-related standards for the purposes of sections 153 and 154 of the Act; and
- (c) other requirements for carrying out the purposes of Division 5, Part 7 of the Act.

APPLICATION

2008 and later model years

4. These Regulations apply to marine engines and off-road recreational vehicles of the 2008 and later model years.

MODEL YEAR

Model year

5. (1) A year that is used by a manufacturer of a marine engine or an off-road recreational vehicle as a model year shall

(a) if the period of production of a model of marine engine or off-road recreational vehicle does not include January 1 of a calendar year, correspond to the calendar year during which the period of production falls; or

(b) if the period of production of a model of marine engine or off-road recreational vehicle includes January 1 of a calendar year, correspond to that calendar year.

Limitation

(2) The period of production of a model of marine engine or off-road recreational vehicle shall include only one January 1.

PRESCRIBED ENGINES AND VEHICLES

Prescribed engines

6. (1) Outboard motor engines and personal watercraft engines are classes of engines that are prescribed for the purposes of the definition "engine" in section 149 of the Act. Those classes of engines are engines that are designed to be used in either an outboard motor or a personal watercraft, as the case may be, and that

(a) operate under characteristics significantly similar to the theoretical Otto combustion cycle; and

(b) use a spark plug or other sparking device.

Prescribed vehicles

(2) The following classes of vehicles are prescribed for the purposes of the definition "vehicle" in section 149 of the Act:

(a) snowmobiles;

(b) off-road motorcycles;

(c) all-terrain vehicles; and

(d) utility vehicles.

Excluded engines and vehicles

(3) The classes of engines and vehicles referred to in subsections (1) and (2) do not include

(a) marine engines that bear a label that meets the requirements of subsections 10(1) and (2) and indicates that they are competition marine engines, are designed exclusively for competition and have features that are not easily removed and characteristics that render their use other than in competition unsafe, impractical or unlikely;

(b) off-road motorcycles that bear either the label referred to in paragraph (a) of the definition "competition vehicle" in subsection 2(1) of the *Motor Vehicle Safety Regulations* or a label meeting the requirements of subsections 10(1) and (2) and indicating that they are competition off-road motorcycles, are designed exclusively for competition, and meet at least four of the following criteria:

- (i) no headlight or other lights,
- (ii) no spark arrestor,
- (iii) no manufacturer's warranty,
- (iv) suspension travel of greater than 25.4 cm,
- (v) engine displacement of greater than 50 cm³, or
- (vi) seat surface of less than 195 cm²;

(c) snowmobiles or all-terrain vehicles that either bear the label referred to in paragraph (a) of the definition "competition vehicle" in subsection 2(1) of the *Motor Vehicle Safety Regulations* or bear a label that meets the requirements of subsections 10(1) and (2) and indicates that they are competition snowmobiles or all-terrain vehicles, are designed exclusively for competition, have performance characteristics that are substantially superior to non-competitive models and are not covered by a manufacturer's warranty;

(d) engines and vehicles that are regulated by the *On-Road Vehicle and Engine Emission Regulations*;

(e) vehicles that are powered by compression-ignition engines;

(f) engines that are designed exclusively to be used in military vehicles that are designed exclusively for use in combat or combat support, and military vehicles that are designed exclusively for use in combat or combat support; or

(g) engines and vehicles that are being exported and are accompanied by a written

Engines and vehicles that require a national emissions mark

statement establishing that they will not be sold or used in Canada.

(4) For the purpose of section 152 of the Act, the prescribed engines and vehicles are those referred to in subsections (1) and (2) that are manufactured in Canada, except any engine or vehicle that will be used in Canada solely for purposes of exhibition, demonstration, evaluation or testing.

ENGINES AND VEHICLES COVERED BY AN EPA CERTIFICATE

Deemed conformity

7. (1) For the purposes of subsection 153(3) of the Act, the provisions of the CFR that are applicable to marine engines or off-road recreational vehicles referred to in paragraph 15(1)(b) pursuant to an EPA certificate correspond to the emission standards referred to in paragraph 15(1)(a).

EPA is the prescribed agency

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

APPLICATION FOR AUTHORIZATION TO APPLY THE NATIONAL EMISSIONS MARK

Apply to Minister for authorization

8. (1) Any company that intends to apply a national emissions mark in relation to a marine engine or an off-road recreational vehicle shall apply to the Minister to obtain an authorization.

Contents of application

(2) The application shall be signed by a person who is authorized to act on behalf of the company and shall include

- (a) the name and street address of the head office of the company and, if different, its mailing address;
- (b) the classes of marine engines or off-road recreational vehicles for which the authorization is requested;
- (c) the street address of the location at which the national emissions mark will be applied; and
- (d) information to show that the company is capable of verifying compliance with the standards set out in these Regulations.

LABELS

National Emissions Mark

National emissions mark

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

Dimensions of mark

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

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

Characteristics of Labels

Location **10.** (1) The national emissions mark and any label referred to in these Regulations, except for the label referred to in section 37, shall be located

(a) on or immediately next to the emission control information label referred to in paragraph 37(1)(d); or

(b) if there is no such label, in a visible or readily accessible location.

Characteristics (2) Except for the label referred to in section 37, any label required by these Regulations, including the label on which the national emissions mark appears, shall

(a) be permanently applied;

(b) be resistant to or protected against any weather condition; and

(c) bear inscriptions that are legible and indelible and that are indented, embossed or in a colour that contrasts with the background of the label.

Engines and vehicles manufactured before January 1, 2008 **11.** A company that has been authorized to apply the national emissions mark may apply it to a marine engine or an off-road recreational vehicle that is manufactured before January 1, 2008, if

(a) the marine engine or off-road recreational vehicle conforms to the standards set out in these Regulations for marine engines or off-road recreational vehicles of the 2008 model year; and

(b) the company meets the requirements of these Regulations in respect of that engine or vehicle.

Identification Number

Unique identification number **12.** (1) A unique identification number shall be affixed to every marine engine or off-road recreational vehicle.

Location and characteristics of identification number (2) The identification number may be engraved on the marine engine or off-road recreational vehicle or may be on a label that meets the requirements of subsection 10(2) and that is affixed in a visible or readily accessible location.

STANDARDS

Emission Control System

Requirements	<p>13. (1) An emission control system that is installed on a marine engine or an off-road recreational vehicle to enable it to conform to the standards set out in these Regulations shall not</p> <p>(a) in its operation, release a substance that causes air pollution and that would not have been released if the system were not installed; or</p> <p>(b) in its operation or malfunction, make the engine or vehicle unsafe, or endanger persons or property near the engine or vehicle.</p>
Prohibition of defeat devices	(2) No marine engine or off-road recreational vehicle shall be equipped with a defeat device.
Meaning of "defeat device"	(3) Subject to subsection (4), 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 in normal engine or vehicle operation and use.
Exceptions	(4) An auxiliary emission control device is not a defeat device if
	(a) the conditions referred to in subsection (3) are substantially included in the emission test procedures referred to in section 22;
	(b) it is needed to protect the engine or vehicle against damage or accident; or
	(c) its use does not go beyond the requirements of engine starting.

Adjustable Parameters

Meaning of "adjustable parameter"	<p>14. (1) In this section, "adjustable parameter" means a device, system or element of design that is capable of being physically adjusted and thereby affecting emissions or engine performance during emission testing or normal in-use operation, but does not include a device, system or element of design that is permanently sealed by the engine manufacturer or that is inaccessible with the use of ordinary tools.</p>
Requirements	(2) Marine engines or off-road recreational vehicles equipped with adjustable parameters shall conform to the applicable standards under these Regulations for any specification within the physically adjustable range.

Emission Standards - General

Options for conformity

15. (1) Subject to section 17, marine engines and off-road recreational vehicles of a given model year shall

(a) conform to the applicable standards set out in sections 16 and 18 to 20;

(b) in the case of a marine engine or off-road recreational vehicle that is covered by an EPA certificate and is sold concurrently in Canada and the United States, conform to the emission standards or family emission limits referred to in the EPA certificate; or

(c) subject to subsection (3), be included in a fleet of marine engines or off-road recreational vehicles that complies with the requirements set out in sections 23 to 25 and 28 and conform

(i) in the case of marine engines, to the family emission limit,

(ii) in the case of snowmobiles, to the family emission limit, which may not exceed the maximum allowable family emission limit set out in paragraph 103(a) of subpart B of CFR 1051,

(iii) in the case of off-road motorcycles, to the family emission limit, which may not exceed the applicable maximum allowable family emission limit set out in subparagraph 105(a)(1) of subpart B or paragraph 615(b) of subpart G of CFR 1051, and

(iv) in the case of all-terrain vehicles and utility vehicles, to the family emission limit, which may not exceed the applicable maximum allowable family emission limit set out in paragraph 107(a) or 145(b) of subpart B or paragraph 615(a) of subpart G of CFR 1051.

When deemed to be covered by an EPA certificate

(2) In these Regulations, a marine engine or an off-road recreational vehicle is deemed to be covered by an EPA certificate if it

(a) is equivalent to a marine engine or off-road recreational vehicle that is covered by an EPA certificate in that both engines or vehicles, as the case may be, share all of the features described in the CFRs that are used by the EPA to classify marine engines or off-road recreational vehicles into engine families; and

(b) has no features that could cause it to have a higher level of emissions than the marine engines or off-road recreational vehicles tested for the issuance of the EPA certificate.

Fleet averaging - exceptions	<p>(3) A company shall not use the fleet averaging requirements referred to in sections 28 to 33 to conform to the CO exhaust emission standards set out in the provision of the CFR that is referred to in subsection 19(2), paragraph 20(1)(a) and subsection 20(2), nor to conform to the fuel line permeation emission standards set out in the provision of the CFR that is referred to in paragraphs 18(1)(b), 19(1)(b) and 20(1)(b).</p>
Marine engines	<p style="text-align: center;"><i>Emission Standards for Marine Engines</i></p> <p>16. (1) The standards applicable to marine engines of a given model year are the applicable exhaust emission standard for HC+NO_x determined in accordance with paragraph 104(a) of subpart B of CFR 91 and the crankcase emission standard set out in section 109 of subpart B of CFR 91, for model years 2008 and later.</p>
Interpretation of power categories	<p>(2) For the purposes of subsection (1), the second column of the table set out in paragraph 104(a) of subpart B of CFR 91 applies to engines in an engine family with an average power of less than 4.3 kW, and the third column of that table applies to engines in an engine family with an average power equal to or greater than 4.3 kW.</p>
Useful life	<p>(3) The standards referred to in subsection (1) apply for the useful life of the engine set out in paragraph 105(a) of subpart B of CFR 91.</p>
Meaning of "replacement marine engine"	<p>17. (1) In this section, "replacement marine engine" means an engine manufactured exclusively to replace an engine in an outboard motor or personal watercraft if no current model year engine with the physical or performance characteristics necessary for the operation of the outboard motor or personal watercraft, as the case may be, exists.</p>

Standards for replacement marine engines

(2) A replacement marine engine may conform to, instead of the standards set out in section 16,
 (a) in the case where the replacement marine engine is manufactured to the specifications of a model year later than the model year of the original engine,
 (i) the standards referred to in section 16 applicable to an engine manufactured to the specification of the model year of the replacement marine engine, or
 (ii) if none of the standards referred to in section 16 apply, the manufacturer's specifications; and
 (b) in any other case,
 (i) the standards referred to in section 16 that were applicable to the original engine, or
 (ii) if none of the standards referred to in section 16 applied, the manufacturer's specifications.

Label for replacement marine engine

(3) A replacement marine engine shall bear a label, in both official languages, that indicates that the engine is a replacement marine engine and that meets the requirements set out in subsections 10(1) and (2).

*Emission Standards for Off-Road
Recreational Vehicles*

Snowmobiles

18. (1) The following standards set out in subpart B of CFR 1051 apply to snowmobiles of a given model year:
 (a) the applicable exhaust emission standards for HC and CO set out in paragraphs 103(a) and (b), for model years 2008 and later;
 (b) the applicable evaporative emission standards set out in paragraphs 110(a) and (b), for model years 2008 and later; and
 (c) the crankcase emission standard set out in paragraph 115(a), for model years 2008 and later.

Useful life

(2) Those standards apply for the useful life set out in paragraph 103(c) of subpart B of CFR 1051.

Exemption for small volume manufacturer or importer

(3) A company manufacturing or importing less than 200 snowmobiles for sale in Canada per year and having fewer than 500 employees worldwide is exempt from the requirement to comply with the evaporative emission standards set out in the section of CFR 1051 referred to in paragraph (1)(c) in respect of its snowmobiles of the 2008 and 2009 model years.

Label for small volume snowmobiles	(4) Every snowmobile manufactured or imported by a company referred to in subsection (3) shall bear a label that meets the requirements set out in subsections 10(1) and (2) and indicates, in both official languages, that it is a small volume vehicle under these Regulations.
Off-road motorcycles	<p>19. (1) The following standards set out in subpart B of CFR 1051 apply to off-road motorcycles of a given model year:</p> <p>(a) the applicable exhaust emission standards for HC+NO_x and CO set out in subparagraph 105(a)(1) and paragraph 105(b), for model years 2008 and later;</p> <p>(b) the applicable evaporative emission standards set out in paragraphs 110(a) and (b), for model years 2008 and later; and</p> <p>(c) the crankcase emission standard set out in paragraph 115(a), for model years 2008 and later.</p>
Alternative exhaust emission standards	(2) Off-road motorcycles of a given model year with engines that have a total displacement of 70 cm ³ or less may conform to the exhaust emission standards set out for that model year in paragraph 615(b) of subpart G of CFR 1051 instead of the exhaust emission standards referred to in paragraph (1)(a).
Useful life	(3) The standards referred to in subsections (1) and (2) apply for the useful life set out in paragraph 105(c) of subpart B of CFR 1051.
Exemption for small volume manufacturer or importer	(4) A company manufacturing or importing less than 200 off-road motorcycles for sale in Canada per year and having fewer than 500 employees worldwide is exempt from the requirement to comply with the evaporative emission standards set out in the section of CFR 1051 referred to in paragraph (1)(b) in respect of its off-road motorcycles of the 2008 and 2009 model years.
Label for small volume off-road motorcycles	(5) Every off-road motorcycle manufactured or imported by a company referred to in subsection (4) shall bear a label that meets the requirements set out in subsections 10(1) and (2) and indicates, in both official languages, that it is a small volume vehicle under these Regulations.

All-terrain and utility vehicles	<p>20. (1) The following standards set out in subpart B of CFR 1051 apply to all-terrain vehicles and utility vehicles of a given model year:</p> <p>(a) the applicable exhaust emission standards for HC+NO_x and CO set out in paragraphs 107(a) and (b), for model years 2008 and later;</p> <p>(b) the applicable evaporative emission standards set out in paragraphs 110(a) and (b), for model years 2008 and later; and</p> <p>(c) the crankcase emission standard set out in paragraph 115(a), for model years 2008 and later.</p>
Alternative standards: engine displacement of less than 100 cm ³	<p>(2) All-terrain vehicles or utility vehicles of a given model year with engines that have a total displacement of less than 100 cm³ may conform to the exhaust emission standards set out for that model year in paragraph 615(a) of subpart G of CFR 1051 instead of the exhaust emission standards referred to in paragraph (1)(a).</p>
Alternative standards for the 2008 model year	<p>(3) All-terrain vehicles or utility vehicles of the 2008 model year may conform to the exhaust emission standards set out for that model year in paragraph 145(b) of subpart B of CFR 1051 instead of the exhaust emission standards referred to in paragraph (1)(a).</p>
Useful life	<p>(4) The standards referred to in subsections (1) to (3) apply for the useful life set out in paragraph 107(c) of subpart B of CFR 1051.</p>
Exemption for small volume manufacturer or importer	<p>(5) A company manufacturing or importing less than 200 all-terrain vehicles and utility vehicles for sale in Canada per year and having fewer than 500 employees worldwide is exempt from the requirement to comply with the evaporative emission standards set out in the section of CFR 1051 referred to in paragraph (1)(b) in respect of its all-terrain vehicles or utility vehicles of the 2008 and 2009 model years.</p>
Label for small volume all-terrain vehicles and utility vehicles	<p>(6) Every all-terrain vehicle and utility vehicle manufactured or imported by a company referred to in subsection (5) shall bear a label that meets the requirements set out in subsections 10(1) and (2) and indicates, in both official languages, that it is a small volume vehicle under these Regulations.</p>
Group of companies	<p>21. (1) The limits referred to in subsections 18(3), 19(4) and 20(5) apply to a company, to any company that controls it and to all of their subsidiaries as a whole.</p>

Subsidiary

(2) For the purposes of this section, a company is a subsidiary of another company if

(a) it is controlled by

- (i) that other company,
- (ii) that other company and one or more companies each of which is controlled by that other company, or
- (iii) two or more companies each of which is controlled by that other company; or

(b) it is a subsidiary of a company that is a subsidiary of that other company.

Company controlled

(3) For the purposes of this section, a company is controlled by one or more companies if

(a) securities of the company to which are attached more than fifty per cent of the votes that may be cast to elect directors of the company are held, other than by way of security only, by or for the benefit of that company or by or for the benefit of those companies; and

(b) the votes attached to those securities are sufficient, if exercised, to elect a majority of the directors of the company.

Interpretation

Test procedures, fuels and calculation methods

22. (1) The standards referred to in sections 13 to 20 include the test procedures, fuels and calculation methods set out in CFR 91, CFR 1051 or CFR 1065, as the case may be.

Phasing in of standards

(2) In the case of a standard that is set out in the CFR to be phased in over a period for a class of vehicle or engine, the standard comes into effect for the purposes of these Regulations in the model year for which the CFR specifies that the standard applies to 100 per cent of that class, and continues to apply until another standard comes into effect that applies to 100 per cent of that class.

FLEET AVERAGING

Interpretation

Meaning of "fleet"

23. (1) In sections 24 to 40, "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, grouped in accordance with this section.

Grouping separately	(2) The engines and vehicles of the following classes shall be grouped into separate fleets: (a) outboard motor engines and personal watercraft engines; (b) snowmobiles; (c) off-road motorcycles; (d) utility vehicles; and (e) all-terrain vehicles.
Grouping of utility vehicles and all-terrain vehicles	(3) A company may group utility vehicles and all-terrain vehicles into a single fleet.
Exclusions	(4) A fleet shall not include the marine engines and off-road recreational vehicles referred to in paragraph 15(1)(a).
Voluntary exclusion	24. For the purposes of sections 25 to 35, a company may exclude from its fleet all of the marine engines and off-road recreational vehicles referred to in paragraph 15(1)(b) where the total number of units sold in the United States that are covered by an EPA certificate exceeds the total number of units sold in Canada that are covered by the same EPA certificate during the same period. The consequences of such exclusion are those set out in subsections 26(3) and 31(2).
<i>Fleet Average Emission Credits and Deficit for Marine Engines</i>	
General requirement	25. (1) Subject to sections 26 and 34 and for the purposes of paragraph 15(1)(c), the fleet average emission credits and deficit in respect of HC+NO _x exhaust emissions for a fleet of marine engines shall be greater than or equal to zero on or before the applicable date in subsection 27(1).
Calculation of credits or deficit for the fleet	(2) The fleet average emission credits and deficit, expressed as a positive number and a negative number respectively, in respect of HC+NO _x exhaust emissions for a fleet of marine engines shall be calculated by adding the emission credits or deficit for each engine family of that fleet that are calculated in accordance with subsection (3).
Calculation of credits or deficit by engine family	(3) The emission credits or deficit in respect of HC+NO _x exhaust emissions for each engine family of a fleet of marine engines of a given model year shall be calculated using the formula set out in paragraph 207(a) of subpart C of CFR 91 expressed in and rounded to the nearest engine-gram except that, for the purposes of this section, the word "sales" means the total number of engines in the engine family in a fleet of a given model year.
Engines manufactured before January 1, 2008	(4) For the purposes of calculating the emission credits or deficit in respect of HC+NO _x exhaust emissions for each engine family of a fleet of marine engines of the 2008 model year, the company may include all marine engines of that model year, including those manufactured before January 1, 2008.

Condition for obtaining credits	26. (1) A company may obtain the fleet average emission credits in respect of HC+NO _x for a given model year only if it reports the fleet average emission credits for that fleet under section 35.
Period of validity of credits	(2) The fleet average emission credits obtained by a company for a given model year shall be credited on the date on which the company submits the end of model year report and shall be used by the company or by another company no later than three model years following the model year in respect of which the credits were obtained, failing which the credits expire.
Result of excluding EPA certified engines	(3) A company that excludes from its fleet of marine engines of a given model year the engines referred to in paragraph 15(1)(b) (a) is ineligible to receive fleet average emission credits in respect of that fleet; and (b) forfeits all fleet average emission credits received in respect of previous model years.
Deadline to offset deficit	27. (1) A company shall offset any fleet average emission deficit for a fleet of a given model year (a) in the case of a fleet of the 2008 model year, no later than the day on which the company submits the end of model year report in respect of that fleet for the 2010 model year; and (b) in the case of a fleet of the 2009 and later model years, in the model year in which it is incurred and no later than the day on which the company submits the end of model year report in respect of that fleet for that model year.
Conditions for offsetting	(2) Fleet average emission deficit shall be offset with an equivalent number of fleet average emission credits obtained by the company under section 26 or transferred to it by another company.
<i>Fleet Average Emission Values for Off-Road Recreational Vehicles</i>	
General requirement	28. (1) Subject to sections 29 to 34 and for the purposes of paragraph 15(1)(c), the fleet average emission value in respect of each emission type for each fleet of off-road recreational vehicles of a specific model year shall not exceed the applicable standard referred to in section 18, 19 or 20.
Emission types	(2) The emission types referred to in subsection (1) are as follows: (a) for a fleet of snowmobiles, (i) HC exhaust emissions for the 2008 and later model years, (ii) CO exhaust emissions for the 2008 and later model years, and (iii) fuel tank permeation emissions for the 2008 and later model years; (b) for a fleet of off-road motorcycles, (i) HC+NO _x exhaust emissions for the 2008 and later model years, (ii) CO exhaust emissions for the 2008 and later model years, and

- (iii) fuel tank permeation emissions for the 2008 and later model years; and
- (c) for a fleet of all-terrain vehicles and utility vehicles,
 - (i) HC+NO_x exhaust emissions for the 2008 and later model years, and
 - (ii) fuel tank permeation emissions for the 2008 and later model years.

Calculation of fleet average emission values

29. (1) Each fleet average emission value shall be calculated, in respect of each emission type, in accordance with the following formula and shall be expressed to one decimal place and in the same units as the applicable standard set out in sections 18, 19, or 20, as the case may be:

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

where

TOT is the total number of engine families in the fleet;

W_i is the family emission limit applicable to engine family "i" and shall be expressed in the same units and to the same number of decimal places as the emission standard it replaced;

Y_i is, in the case of exhaust emissions, the number of vehicles in engine family "i" and, in the case of evaporative emissions, the number of vehicles in engine family "i" multiplied by the average internal surface area of the vehicles' fuel tanks expressed in metres squared; and

Z_i is determined as follows:

- (a) for a fleet of snowmobiles,
 - (i) in the case of exhaust emissions, Z is the useful life for engine family "i" expressed in kilometres — established under paragraph 103(c) of subpart B of CFR 1051 — multiplied by the maximum power output observed during the emissions test expressed in kilowatts divided by 30 km/h, and
 - (ii) in the case of evaporative emissions, Z is the useful life for engine family "i" expressed in years — established under paragraph 103(c) of subpart B of CFR 1051 — multiplied by 365.24 days/year;
- (b) for a fleet of off-road motorcycles,
 - (i) in the case of exhaust emissions, Z is the useful life for engine family "i" expressed in kilometres which is established under paragraph 105(c) of subpart B of CFR 1051, and
 - (ii) in the case of evaporative emissions, Z is the useful life for engine family "i" — as referred to in subparagraph (i) — expressed in years multiplied by 365.24 days/year; and
- (c) for a fleet of all terrain vehicles or utility vehicles,

(i) in the case of exhaust emissions, for those vehicles that must conform to a family emission limit expressed in g/km, Z is the useful life for engine family "i" expressed in kilometres — established under paragraph 107(c) of subpart B of CFR 1051 — and for those vehicles that must conform to a family emission limit expressed in g/kW-h, Z is the useful life for engine family "i" expressed in kilometres multiplied by the maximum power output observed during the emissions test expressed in kilowatts and divided by 30 km/h, and
(ii) in the case of evaporative emissions, Z is the useful life for engine family "i" — as referred to in subparagraph (i) — expressed in years multiplied by 365.24 days/year.

Emission limits
expressed in g/kW-h

(2) In the case of vehicles of a fleet that must conform to a family emission limit expressed in g/kW-h as set out in paragraph 145(b) of subpart B of CFR 1051 or paragraph 615(a) or (b) of subpart G of CFR 1051, the company shall calculate a separate fleet average emission value for those vehicles in respect of each emission type and under each of those paragraphs.

Vehicles manufactured
before January 1, 2008

(3) For the purposes of calculating the fleet average emission value under subsection (1) for a fleet of the 2008 model year, the company may include all vehicles of that model year, including those manufactured before January 1, 2008.

*Fleet Average Emission Credits for
Off-Road Recreational Vehicles*

Obtainment of credits

30. (1) For the purposes of subparagraph 162(1)(b)(i) of the Act, a company shall obtain fleet average emission credits in respect of each emission type if the fleet average emission value, in respect of the fleet of off-road recreational vehicles, is lower than the applicable standard for that fleet and the company reports the credits under section 35.

Calculation of fleet
average emission
credits

(2) The fleet average emission credits, expressed in vehicle-grams and rounded to one decimal place, shall be calculated using the following formula:

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

where

A is the applicable standard for a fleet of a specific model year in respect of an emission type as set out in section 28;

B is the fleet average emission value for a specific model year in respect of an emission type as calculated in accordance with section 29;

TOT is the total number of engine families in the fleet;

	<p>Y_i is, in the case of exhaust emissions, the number of vehicles in engine family "i", and, in the case of evaporative emissions, the number of vehicles in engine family "i" multiplied by the average internal surface area of the vehicles' fuel tanks expressed in metres squared; and</p> <p>Z_i is the useful life applicable to engine family "i" as set out in subsection 29(1).</p>
Date on which fleet average emission credits obtained	(3) The fleet average emission credits for a given model year shall be credited on the day on which the company submits the end of model year report.
Usage of fleet average emission credits	31. (1) Fleet average emission credits obtained by a company in respect of a fleet of a class of vehicles, in respect of an emission type, and in respect of a standard expressed in specific units, may be used by the company or by another company to offset a deficit incurred in a future model year as long as the deficit being offset was incurred for a fleet of the same class, the same emission type, and in relation to a standard expressed in the same units.
Result of excluding EPA certified vehicles	<p>(2) A company that excludes from its fleet of off-road recreational vehicles of a given model year the vehicles referred to in paragraph 15(1)(b)</p> <p>(a) is ineligible to receive fleet average emission credits in respect of that fleet; and</p> <p>(b) forfeits all fleet average emission credits received in respect of previous model years.</p> <p style="text-align: center;"><i>Fleet Average Emission Deficit for Off-Road Recreational Vehicles</i></p>
Value of deficit	32. If a company's fleet average emission value for any emission type in respect of a fleet is higher than the applicable standard in respect of the fleet for that emission type, the company shall calculate the value of the fleet average emission deficit that it incurred for that emission type. The emission deficit is the negative number calculated using the formula set out in subsection 30(2).
Deadline to offset deficit	<p>33. (1) A company shall offset any fleet average emission deficit for a fleet of a given model year</p> <p>(a) in the case of a fleet of the 2008 model year and in relation to exhaust emissions, no later than the day on which the company submits the end of model year report in respect of that fleet for the 2010 model year;</p> <p>(b) in the case of a fleet of the 2008, 2009 and 2010 model years and in relation to fuel tank permeation emissions, no later than the day on which the company submits the end of model year report in respect of that fleet for the 2011 model year;</p> <p>(c) in the case of a fleet of the 2009 and later model years and in relation to exhaust emissions, in the model year in which it is incurred and no later than the day on which the company submits the end of model year report in respect of that fleet for that model year; and</p> <p>(d) in the case of a fleet of the 2011 and later model years and</p>

in relation to fuel tank permeation emissions, in the model year in which it is incurred and no later than the day on which the company submits the end of model year report in respect of that fleet for that model year.

Conditions for offsetting

(2) A company shall offset a fleet average emission deficit for a specific emission type with an equivalent number of fleet average emission credits of the same emission type obtained by the company under section 30 or obtained from another company.

Corporate Changes

Responsibility for offsetting deficit – purchase or merger

34. (1) A company that purchases another company or that results from the merger of companies is responsible for offsetting, in accordance with section 27 or 33, any outstanding fleet average emission deficit for its marine engines and off-road recreational vehicles incurred before the purchase or merger.

Responsibility for offsetting deficit – ceasing activities

(2) Where a company ceases to manufacture, import or sell marine engines or off-road recreational vehicles, the company shall, before submitting its last end of model year report, offset any fleet average emission deficit for its marine engines or off-road recreational vehicles.

END OF MODEL YEAR REPORTS

Submit report to the Minister

35. (1) A company shall submit to the Minister an end of model year report, signed by a person who is authorized to act on behalf of the company, no later than May 1 of the calendar year following the year that corresponds to the model year.

Indication of choice

(2) The company shall include in the end of model year report a statement that, as the case may be,
 (a) every outboard motor engine, personal watercraft engine, snowmobile, off-road motorcycle, all-terrain vehicle and utility vehicle of a given model year, as the case may be, conforms to paragraph 15(1)(a) or (b); and
 (b) the fleet of marine engines or off-road recreational vehicles of a given model year, as the case may be, conforms to paragraph 15(1)(c) and whether the marine engines and off-road recreational vehicles referred to in paragraph 15(1)(b) were included in or excluded from the fleet.

Engines or vehicles that conform to paragraph 15(1)(b)

(3) Where every marine engine or off-road recreational vehicle within a specified class, as the case may be, conforms to paragraph 15(1)(b) and the end of model year report contains the statement set out in paragraph 2(a), the company shall include in the end of model year report the information set out in paragraphs (4)(b) to (d), with the necessary modifications to represent those engines and vehicles as a fleet.

Contents of report	<p>(4) In a model year where a company's fleet conforms to paragraph 15(1)(c), the end of model year report shall contain the following information for each applicable fleet:</p> <p>(a) the applicable standard;</p> <p>(b) in the case of a fleet of marine engines,</p> <p style="padding-left: 40px;">(i) the fleet average emission credits or deficit,</p> <p style="padding-left: 40px;">(ii) for each model, all the values used in calculating the emission credits and deficit of each engine family, and</p> <p style="padding-left: 40px;">(iii) all the values used in calculating the fleet average emission credit or deficit;</p> <p>(c) in the case of a fleet of off-road recreational vehicles and in respect of each emission type,</p> <p style="padding-left: 40px;">(i) the fleet average emission value,</p> <p style="padding-left: 40px;">(ii) for each model, all the values used in calculating each fleet average emission value, and</p> <p style="padding-left: 40px;">(iii) the fleet average emission credits or deficit;</p> <p>(d) the total number of marine engines or off-road recreational vehicles in the fleet;</p> <p>(e) any fleet average emission credits obtained from another company or transferred to another company since the submission of the previous end of model year report, including</p> <p style="padding-left: 40px;">(i) the name, street address and, if different, the mailing address of any other company involved in the transfer of credits, and</p> <p style="padding-left: 40px;">(ii) a signed statement from a person who is authorized to act on behalf of the other company indicating the number of credits transferred to or from the company submitting the report, the fleet and emission type in respect of which those credits are obtained, the units in which the family emission limit is expressed in respect of those credits, the model years in which the credits were obtained and the dates of the transfer; and</p> <p>(f) the balance of any fleet average emission credits or deficit at the end of the model year.</p>
Additional information for excluded engines and vehicles	<p>(5) Where the marine engines or off-road recreational vehicles referred to in paragraph 15(1)(b) are excluded from the fleet, the company shall include in the end of model year report the information set out in paragraphs (4)(b) to (d), with the necessary modifications to include those engines and vehicles in the fleet.</p>
Provide to first retail purchaser	<p style="text-align: center;">EMISSION-RELATED MAINTENANCE INSTRUCTIONS</p> <p>36. (1) A company shall ensure that written instructions respecting emission-related maintenance are provided to the first retail purchaser of every marine engine or off-road recreational vehicle.</p>
Language of instructions	<p>(2) The instructions shall be provided in English, French or both official languages, as requested by the purchaser.</p>

RECORDS

Evidence of Conformity

Evidence of conformity for engines and vehicles covered by an EPA certificate	<p>37. (1) In the case of a marine engine or an off-road recreational vehicle referred to in paragraph 15(1)(b), evidence of conformity for the purposes of paragraph 153(1)(b) of the Act in respect of a company shall consist of</p> <p>(a) a copy of the EPA certificate covering the marine engine or off-road recreational vehicle;</p> <p>(b) a document demonstrating that the marine engines or off-road recreational vehicles are sold concurrently in Canada and the United States;</p> <p>(c) a copy of the records submitted to the EPA in support of the application for the issuance of the EPA certificate in respect of the marine engine or off-road recreational vehicle; and</p> <p>(d) an emission control information label that is permanently affixed in the form and location set out in</p> <p style="padding-left: 40px;">(i) paragraphs 113(a) to (d) of subpart B of CFR 91 for a marine engine, or</p> <p style="padding-left: 40px;">(ii) paragraphs 135(b) to (e) of subpart B of CFR 1051 for an off-road recreational vehicle.</p>
Maintenance of records	<p>(2) A company shall, for each of its marine engines and off-road recreational vehicles referred to in subsection (1), maintain a record containing all of the elements listed in that subsection and a copy of the end of model year report pertaining to those engines and vehicles.</p>
Evidence of conformity for engines and vehicles not covered by an EPA certificate	<p>38. (1) In the case of a marine engine or an off-road recreational vehicle other than one referred to in paragraph 15(1)(b), evidence of conformity for the purposes of paragraph 153(1)(b) of the Act shall be obtained and produced by a company in a form and manner satisfactory to the Minister instead of that specified in section 37.</p>
When to submit evidence of conformity	<p>(2) For greater certainty, the company shall submit the evidence of conformity referred to in subsection (1) to the Minister before applying a national emissions mark to the marine engine or off-road recreational vehicle or importing the engine or vehicle.</p>
Maintenance of records	<p>(3) A company shall, for each of its marine engines and off-road recreational vehicles referred to in subsection (1), maintain a record containing the evidence of conformity referred to in that subsection and a copy of the end of model year report pertaining to those engines and vehicles.</p>
When to submit evidence of conformity	<p>39. For greater certainty, a company that imports a marine engine or an off-road recreational vehicle or applies a national emissions mark to it under subsection 153(2) of the Act is not required to provide the evidence of conformity referred to in subsection 38(1) to the Minister before importing it or applying a national emissions mark to it, but must provide that evidence in accordance with subsection 153(2) before the engine or vehicle leaves the 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 an aboriginal government.</p>

Fleet Average Records

Contents of records	<p>40. A company shall maintain records containing the following information for each of its fleets of marine engines and off-road recreational vehicles:</p> <p>(a) the model year;</p> <p>(b) in the case of marine engines, all values used in calculating the emission credits and deficit for all engine families and the fleet average emission credits or deficit reported pursuant to subsections 35(3) to (5);</p> <p>(c) in the case of off-road recreational vehicles, all values used in calculating the fleet average emission values reported pursuant to subsections 35(3) to (5);</p> <p>(d) for each engine and vehicle in the fleet,</p> <p style="padding-left: 40px;">(i) the model and engine family,</p> <p style="padding-left: 40px;">(ii) the name and street address of the plant where the engine or vehicle was manufactured,</p> <p style="padding-left: 40px;">(iii) the engine or vehicle identification number,</p> <p style="padding-left: 40px;">(iv) the family emission limit to which the engine or vehicle conforms, and</p> <p style="padding-left: 40px;">(v) the name and street or mailing address of the first purchaser of the engine or vehicle in Canada; and</p> <p>(e) in the case where a company excludes from its fleet, under section 24, all of the marine engines and off-road recreational vehicles referred to in paragraph 15(1)(b), a document demonstrating that the total number of units of marine engines and off-road recreational vehicles sold in the United States that are covered by an EPA certificate exceeds the total number of units sold in Canada that are covered by the same EPA certificate during the same period.</p>
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Retention of Records

Period of retention of records	<p>41. (1) A company shall retain, in writing or in a readily readable electronic or optical form,</p> <p>(a) the records referred to in sections 37 and 38, except for the end of model year reports that they contain, for a period of at least eight years after the date of manufacture of the marine engine or off-road recreational vehicle; and</p> <p>(b) in respect of each model year, the records referred to in section 40 and a copy of the end of model year report referred to in sections 37 and 38 for that model year for a period of eight years after the end of the model year.</p>
Records retained on behalf of a company	<p>(2) If the records referred to in subsection (1) are retained on behalf of a company, the company shall keep a record of the name and street address and, if different, the mailing address of the person who retains those records.</p>
Deadline to provide records when requested	<p>(3) If the Minister makes a written request for the records referred to in subsections (1) and (2), the company shall provide the Minister with the records in either official language and</p> <p>(a) within 40 days after the day on which the request is delivered to the company; or</p> <p>(b) within 60 days after the day on which the request is delivered to the company, if the records must be translated from a language other than French or English.</p>

IMPORTATION REQUIREMENTS AND DOCUMENTS

- Declaration of importer **42.** (1) Subject to subsection (2), any person importing a marine engine or an off-road recreational vehicle into Canada shall submit a declaration at a customs office, signed by that person or their duly authorized representative, that contains the following information:
- (a) the name and street address and, if different, the mailing address of the importer;
 - (b) in respect of a marine engine, the name of the manufacturer and the make, model, model year and class of the engine;
 - (c) in respect of an off-road recreational vehicle, the name of the manufacturer and the make, model, model year and class of the vehicle;
 - (d) the date on which the marine engine or off-road recreational vehicle is imported;
 - (e) if the importer is a company,
 - (i) the business number assigned to the company by the Minister of National Revenue, and
 - (ii) a statement that the marine engine or off-road recreational vehicle bears the national emissions mark or that the company is able to produce the evidence of conformity referred to in section 37 or complies with section 38; and
 - (f) if the importer is not a company,
 - (i) a statement from the importer that the marine engine or off-road recreational vehicle bears
 - (A) the national emissions mark,
 - (B) the emission control information label referred to in paragraph 37(1)(d) showing that the marine engine or off-road recreational vehicle conformed to the emission standards of the EPA in effect at the time of its manufacture, or
 - (C) a label showing that the marine engine or off-road recreational vehicle conformed to the emission standards of the California Air Resources Board in effect at the time of its manufacture, or
 - (ii) a statement from the manufacturer or its duly authorized representative that the marine engine or off-road recreational vehicle conformed to the standards set out in these Regulations, or to the standards referred to in clause (i)(B) or (C), at the time of its manufacture.
- Alternative declaration (2) For the purposes of paragraph 153(1)(b) of the Act, any company that imports 500 or more marine engines or off-road recreational vehicles into Canada in a calendar year may provide the information referred to in subsection (1) in a form and manner that is satisfactory to the Minister.

Declaration for importation for exhibition, demonstration, evaluation or testing

43. (1) A declaration referred to in paragraph 155(1)(a) of the Act that is made in respect of a marine engine or an off-road recreational vehicle shall be signed by the person referred to in that paragraph or their duly authorized representative, and shall contain

(a) the information described in paragraphs 42(1)(a) to (d) and subparagraph 42(1)(e)(i);

(b) the identification number of the engine or vehicle described in section 12;

(c) a statement that the engine or vehicle will be used in Canada solely for the purposes of exhibition, demonstration, evaluation or testing; and

(d) the date on which the engine or vehicle will be removed from Canada or destroyed.

When to file declaration

(2) The declaration shall be filed with the Minister before the marine engine or off-road recreational vehicle is imported; or, in the case of a company whose world production of engines and vehicles is 2,500 or more a year, quarterly, at the option of the company.

Declaration for incomplete engine or vehicle

44. A company that imports a marine engine or an off-road recreational vehicle into Canada in reliance on subsection 153(2) of the Act shall submit a declaration at a customs office, signed by its duly authorized representative, that contains the information described in paragraphs 42(1)(a) to (d) and subparagraph 42(1)(e)(i) along with

(a) a statement from the manufacturer of the engine or vehicle that the engine or vehicle will, when completed in accordance with instructions provided by the manufacturer, conform to the standards set out in these Regulations; and

(b) a statement from the company that the engine or vehicle will be completed in accordance with the instructions referred to in paragraph (a).

RENTAL RATE

Annual – 12%

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

EXEMPTION

Contents of application
for exemption

- 46.** A company applying under section 156 of the Act for an exemption from conformity with any standard set out in these Regulations shall submit in writing to the Minister
- (a) its name and street address and, if different, its mailing address;
 - (b) the province or country under the laws of which it is established;
 - (c) the section number, title and text of the standards from which an exemption is sought;
 - (d) the duration requested for the exemption;
 - (e) the estimated number of marine engines and off-road recreational vehicles for which the exemption is sought and an estimate of the changes in the level of emissions if the exemption is granted;
 - (f) the reasons for requesting the exemption, including technical and financial information that demonstrates in detail why conformity to the standards referred to in paragraph (c) would
 - (i) create substantial financial hardship for the company,
 - (ii) impede the development of new features for emission monitoring or emission control that are equivalent or superior to those that conform to prescribed standards, or
 - (iii) impede the development of new kinds of marine engines or off-road recreational vehicles, or their systems or components;
 - (g) if the basis of the application is substantial financial hardship,
 - (i) the world production of engines and vehicles manufactured by the company or by the manufacturer that is the subject of the application in the 12-month period beginning two years before the start of the exemption period being sought, and
 - (ii) the total number of engines and vehicles manufactured for, or imported into, the Canadian market in the 12-month period beginning two years before the start of the exemption period being sought;
 - (h) if the company is requesting that information submitted be treated as confidential under section 313 of the Act or otherwise, an identification in that request of:
 - (i) any information that constitutes a trade secret,
 - (ii) any information the disclosure of which would likely cause material financial loss to, or prejudice to the competitive position of, the company,
 - (iii) any information the disclosure of which would likely interfere with contractual or other negotiations being conducted by the company, and
 - (iv) any financial, commercial, scientific or technical information that is confidential information and is treated consistently in a confidential manner by the company.

Label for exempted engines and vehicles	47. (1) In the case of a model of marine engine or off-road recreational vehicle in respect of which the Governor in Council has, by order, granted an exemption under section 156 of the Act, the engine or vehicle shall bear a label that meets the requirements set out in subsections 10(1) and (2).
Contents of label	(2) The label shall set out, in both official languages, the standard for which the exemption has been granted, as well as the title and date of the exemption order.

DEFECT INFORMATION

Contents of notice of defect	<p>48. (1) The notice of defect referred to in subsections 157(1) and (4) of the Act shall be given in writing and shall contain the following information:</p> <ul style="list-style-type: none"> (a) the name of the company giving the notice; (b) the description of each marine engine or off-road recreational vehicle in respect of which the notice is given, including the make, model, identification number, model year, period during which the engine or vehicle was manufactured and, if applicable, the EPA engine family identification; (c) the estimated percentage of the potentially affected marine engines or off-road recreational vehicles that contain the defect; (d) a description of the defect; (e) an evaluation of the pollution risk arising from the defect; (f) a statement of the measures to be taken to correct the defect; and (g) a description of the means available to the company to contact the current owner of each affected marine engine or off-road recreational vehicle.
Contents of initial report	<p>(2) A company shall, within 60 days after giving a notice of defect, submit to the Minister the initial report referred to in subsection 157(7) of the Act containing</p> <ul style="list-style-type: none"> (a) the information required by subsection (1); (b) the total number of marine engines or off-road recreational vehicles in relation to which the notice of defect has been given; (c) a chronology of all principal events that led to the determination of the existence of the defect; (d) a description of the measures undertaken to correct the defect; and (e) copies of all notices, bulletins and other circulars issued by the company in respect of the defect, including a detailed description of the nature and physical location of the defect with diagrams and other illustrations as necessary.

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| Contents of follow-up reports | (3) The company that submitted the notice of defect shall submit follow-up reports respecting the defect and its correction to the Minister, each of which shall contain the following information:
(a) the number, title or other identification assigned by the company to the notice of defect;
(b) the number of marine engines or off-road recreational vehicles in relation to which the notice of defect has been given;
(c) the date that notices of defect were given to the current owners of the affected marine engines or off-road recreational vehicles; and
(d) the total number or percentage of marine engines or off-road recreational vehicles repaired, including marine engines or off-road recreational vehicles requiring inspection only. |
| Follow-up reports for marine engine defects | (4) Unless the Minister directs otherwise under subsection 157(8) of the Act, for a defect affecting a marine engine, one follow-up report shall be submitted within 12 months after the submission of the initial report. |
| Follow-up reports for off-road recreational vehicle defects | (5) Unless the Minister directs otherwise under subsection 157(8) of the Act, for a defect affecting an off-road recreational vehicle, one follow-up report shall be submitted within six months after submission of the initial report and every six months after that for a period of two years after the day on which the notice was given or until the defect has been corrected, whichever comes first. |

CONSEQUENTIAL AMENDMENT

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| <i>Off-Road Small Spark-Ignition Engine Emission Regulations</i> | 49. Paragraph 5(2)(d) of the <i>Off-Road Small Spark-Ignition Engine Emission Regulations</i> is replaced by the following:
(d) designed to be used to propel snowmobiles, all-terrain vehicles, utility vehicles and off-road motorcycles, as those vehicles are defined in subsection 1(1) of the <i>Marine Spark-Ignition Engine and Off-Road Recreational Vehicle Emission Regulations</i> ; |
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COMING INTO FORCE

- | | |
|----------------------|--|
| Date of registration | 50. (1) Sections 1, 2 and 8 to 11 come into force on the day on which these Regulations are registered. |
| January 1, 2008 | (2) Sections 3 to 7 and 12 to 49 come into force on January 1, 2008. |

SCHEDULE
(*Subsection 9(1)*)

NATIONAL EMISSIONS MARK



[52-1-o]

[Footnote 1](#)

The EPA regulates emissions from marine spark-ignition engines and off-road recreational vehicles under two separate rules, which were published in 1996 and 2002, respectively, and are available at www.epa.gov/otaq/marinesi.htm and www.epa.gov/otaq/recveh.htm.

[Footnote 2](#)

Schedule 1 of CEPA 1999 includes the following air pollutants, which are typically emitted from engines and vehicles: acetaldehyde; acrolein; benzene; 1,3-butadiene; formaldehyde; nitric oxide; nitrogen dioxide; respirable particulate matter with a diameter of less than 10 micrometres; sulphur dioxide; and volatile organic compounds that participate in atmospheric photochemical reactions.

[Footnote 3](#)

"Volatile organic compounds" include aldehydes and all hydrocarbons, except for methane and ethane. "Hydrocarbons" are all hydrocarbons (including methane and ethane) and do not include aldehydes.

[Footnote 4](#)

Environment Canada's 2000 Criteria Air Contaminants (CAC) Emission Summary is available at www.ec.gc.ca/pdb/cac/cac_home_e.cfm.

[Footnote 5](#)

The MOU is available at www.ec.gc.ca/Cleanair-airpur/CAOL/air/mou_marine_e.html.

[Footnote 6](#)

Part 91 of the U.S. CFR is available at <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=0198640c62e1cd595dc5f7e4fcaebfd3&rgn=div5&view=text&node=40:20.0.1.1.5&idno=40>.

[Footnote 7](#)

Part 1051 of the U.S. CFR is available at <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=0198640c62e1cd595dc5f7e4fcaebfd3&rgn=div5&view=text&node=40:31.0.1.3.11&idno=40>.

[Footnote 8](#)

The NONROAD model and supporting documentation is available at www.epa.gov/otaq/nonrdmdl.htm.

[Footnote 9](#)

The U.S. figures are in 2001 dollars and are converted to Canadian dollars using the 2005 annual average exchange rate of 1.21.

[Footnote 10](#)

The support documents for the EPA rules for marine spark-ignition engines and off-road recreational vehicles are available at www.epa.gov/otaq/regs/nonroad/marine/marnfria.pdf and www.epa.gov/otaq/regs/nonroad/2002/r02022.pdf, respectively.

[Footnote 11](#)

"Discussion Document – Marine Spark-Ignition Engine and Off-Road Recreational Vehicle Emission Regulations" is available at www.ec.gc.ca/ceparegistry/documents/part/mar_ssi/cover.cfm.

[Footnote 12](#)

"Reply to comments on the Discussion Document – Marine Spark Ignition Engine and Off-Road Recreational Vehicle Emission Regulations" is available at www.ec.gc.ca/CEPARegistry/regulations.

[Footnote 13](#)

Environment Canada's Compliance and Enforcement Policy is available at www.ec.gc.ca/CEPARRegistry/documents/policies/candepolicy/CandEpolicy.pdf.

[Footnote a](#)

S.C. 2004, c. 15, s. 31

[Footnote b](#)

S.C. 1999, c. 33

NOTICE:

The format of the electronic version of this issue of the *Canada Gazette* was modified in order to be compatible with hypertext language (HTML). Its content is very similar except for the footnotes, the symbols and the tables.

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[Important notices](#)