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

Transportation Division and Environmental Protection Operations Division
Toronto Information Session
October 14, 2011
The following information is intended for guidance only. It does not in anyway supersede or modify the requirements of the Canadian Environmental Protection Act, 1999 or the Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations made under that Act. In the event of an inconsistency between this information and the Act and/or the Regulations, the Act and the Regulations shall prevail.

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Who is involved with the administration and enforcement of the vehicles and engines emissions regulations under the Canadian Environmental Protection Act, 1999?

Environment Canada

- Environmental Stewardship Branch
  - Environmental Protection Operations Directorate
- Enforcement Branch
  - Energy and Transportation Directorate
    - Transportation Division
      - Air Pollutant Regulatory Development
      - Regulatory Administration
      - Vehicles and Engines Testing and Emissions Verification
Presentation Outline

• Part A
  – Summary of Legislative and Regulatory Authorities to Control Emissions from Vehicles, Engines and Vessels
  – Application, Compliance and Exclusions
  – Administrative Requirements

• Part B
  – Evidence of Conformity
  – Emissions Compliance Verification Program
Summary of Legislative and Regulatory Authorities to Control Emissions from Vehicles, Engines and Vessels

**Act and Regulations**

**Canadian Environmental Protection Act, 1999 (Act)**

- “An Act respecting pollution prevention and the protection of the environment and human health in order to contribute to sustainable development”

- The Act includes authority to regulate:
  - Emissions from on-road vehicles and engines (transferred from safety legislation).
  - Emissions from off-road vehicles and engines (new authority).
  - Emissions from marine spark-ignition engines and vessels with installed fuel lines or fuel tanks (new authority).

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

- The general approach has been to align with U.S. federal standards by:
  - Adopting consistent definitions; and
  - Incorporating by reference applicable U.S. technical emission standards and test procedures.

- Combines two U.S. rules
  - Rule for marine engines effective since 2010 (CFR 1045)
  - Rule for recreational vehicles phased-in starting 2006/07 (CFR 1051)

- Optional emissions averaging program and system of credits similar to U.S.

- Performance-based standards provide manufacturers the flexibility of design and innovation.

- Products eligible for sale in the U.S. are generally eligible for sale in Canada. (accept U.S. EPA emission certification as evidence of conformity with regulations)
Current Regulations

Off-Road Spark-Ignition Engines (Jan. 1st, 2005)

Off-Road Compression-Ignition Engines (Jan. 1st, 2006)

On-Road Vehicles & Engines (Jan. 1st, 2004)

Marine Spark-Ignition Engines, Vessels & Off-Road Recreational Vehicles (April 5th, 2011)

GHG (2012+ MY) ? MY

GHG (2012+ MY) ? MY

GHG (2015+ MY)

GHG (? MY)
Application, Compliance and Exclusions

• Regulations apply to all persons and companies in the business of manufacturing, distributing or importing prescribed classes of vehicles, engines or vessels for sale and to persons who import such vehicles, engines or vessels for their own use.

• Compliance with prescribed emission standards is a condition of:
  – A vehicle/engine/vessel’s importation into Canada (section 153 of the Act).
  – The interprovincial transport of a vehicle, engine or vessel that is manufactured in Canada (through use of a national emissions mark).
**Application, Compliance and Exclusions**

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**Model Year (Section 4 of Regulations):**
- For the production of a model which includes only one January 1st of a calendar year, the model year corresponds to that calendar year.
  - Ex.: Period of production: August 1st, 2012 to February 1st, 2013
    - MODEL YEAR = 2013
- If the period of production does not include January 1st of a calendar year the manufacturer may choose one of the following:
  1. The model year corresponds to the calendar year during which the period of production falls, or;
  2. Immediately following the calendar year during which the period of production falls.
    - Ex.: Period or production: February 1st, 2013 to November 1st, 2013
- The period of production may include only one January 1st
Application, Compliance and Exclusions

Outboard engines or personal watercraft engines manufactured in, distributed in or imported into Canada must conform to the standards via ONE of the following options starting in model year 2012.

**OPTION 1**
Conform directly to standards
- Hydrocarbon + nitrogen oxide (HC + NOₓ)
- Carbon monoxide (CO)

**OPTION 2**
Covered by a U.S. EPA certificate
AND
sold concurrently in Canada and the U.S.
Must conform to emission standards or family emission limits referred to in the U.S. EPA certificate

**OPTION 3**
Fleet averaging
- Fleet averaging available for: HC + NOₓ and CO
- Engine must conform to family emission limits
- Fleet average emission credits or deficits must be determined
  - Deficits must be offset

**ALL ENGINES**
- Not-to-exceed emission standards
- No crankcase emissions allowed

**ENGINE STANDARDS — WHERE APPLICABLE —**
- Diagnostic system required for engines equipped with three-way catalysts and closed-loop control of air-fuel ratios
- Torque broadcasting system required for electronically controlled engines starting in the 2013 model year

**APPLIES THROUGHOUT THE ENGINE’S USEFUL LIFE**
Whichever comes first:
Outboard engines: 10 years or 350 hours of operation
Personal watercraft engines: 5 years or 350 hours of operation
Application, Compliance and Exclusions

Inboard engines manufactured in, distributed in or imported into Canada must conform to the standards via ONE of the following options starting in model year 2012 for conventional inboards and 2013 for high-performance inboards.

**OPTION 1**
- Conform directly to standards
  - Hydrocarbon + nitrogen oxide \((HC + NO_x)\)
  - Carbon monoxide \((CO)\)

**OPTION 2**
- Covered by a U.S. EPA certificate AND sold concurrently in Canada and the U.S.
- Must conform to emission standards or family emission limits referred to in the U.S. EPA certificate

**OPTION 3**
- Fleet averaging (Conventional inboards only)
  - Fleet averaging available for: \(HC + NO_x\) and \(CO\)
  - Engine must conform to family emission limits
  - Fleet average emission credits or deficits must be determined
    - Deficits must be offset

**ALL ENGINES**
- No crankcase emissions allowed

**ENGINE STANDARDS - WHERE APPLICABLE -**
- Diagnostic system required for engines equipped with three-way catalysts and closed-loop control of air-fuel ratios
- Not-to-exceed emission standards for conventional inboards
- Torque broadcasting system required for electronically controlled engines starting in the 2013 model year

**APPLIES THROUGHOUT THE ENGINE’S USEFUL LIFE**
Whichever comes first:
- Conventional inboard (engine power \(\leq 373\ kW\)): 10 years or 480 hours of operation
- High-performance inboard (373 kW < engine power \(\leq 485\ kW\)): 3 years or 150 hours of operation
- High-performance inboard (engine power > 485 kW): 1 year or 50 hours of operation
Application, Compliance and Exclusions

Vessels and outboard engines *manufactured in, distributed in or imported into* Canada must conform to the standards via *ONE* of the following options starting in model year 2015.

**OPTION 1**
Conform directly to standards
- Fuel line permeation
- Fuel tank permeation
- Diurnal

**OPTION 2**
Sold concurrently in Canada and the U.S. AND fuel lines or fuel tanks covered by U.S. EPA certificates

Must conform to emission standards or family emission limits referred to in the U.S. EPA certificates

Standards apply to the following:

| VESSELS          | • Designed to use a marine engine; AND  
|                  | • In which fuel tanks or fuel lines are installed |
| OUTBOARD ENGINES | • In which fuel tanks or fuel lines are installed |

**NOTE:** The standards are not applicable to portable fuel tanks and their associated fuel lines.
Application, Compliance and Exclusions

Snowmobiles manufactured in, distributed in or imported into Canada must conform to the standards via ONE of the following options starting in model year 2012.

**OPTION 1**
Conform directly to standards
- Hydrocarbon (HC)
- Carbon monoxide (CO)
- Fuel tank permeation

**OPTION 2**
Covered by a U.S. EPA certificate AND sold concurrently in Canada and the U.S.
Must conform to emission standards or family emission limits referred to in the U.S. EPA certificate

**OPTION 3**
Fleet averaging
- Fleet averaging available for: HC, CO and fuel tank permeation emission standards
- Vehicle must conform to family emission limits
- Fleet average emission credits or deficits must be determined
  - Deficits must be offset

All Snowmobiles
- Fuel line permeation emission standards
- No crankcase emissions allowed

Applies throughout the vehicle’s useful life
Whichever comes first:
5 years or 400 hours of operation or 8000 km
Application, Compliance and Exclusions

Off-road motorcycles **manufactured in, distributed in or imported into** Canada must conform to the standards via **ONE** of the following options starting in model year 2012.

**OPTION 1**
Conform directly to standards
- Hydrocarbon + nitrogen oxide (HC + NOₓ), carbon monoxide (CO)
  - Alternative standard for off-road motorcycles with engines ≤ 70 cc
- Fuel tank permeation

**OPTION 2**
Covered by a U.S. EPA certificate
**AND**
sold concurrently in Canada and the U.S.
Must conform to emission standards or family emission limits referred to in the U.S. EPA certificate

**OPTION 3**
Fleet averaging
- Fleet averaging available for: HC + NOₓ, CO and fuel tank permeation emission standards
  - **Not available for CO** for off-road motorcycles with engines ≤ 70 cc
- Vehicle must conform to family emission limits
- Fleet average emission credits or deficits must be determined
  - **Deficits must be offset**

**ALL OFF-ROAD MOTORCYCLES**
- Fuel line permeation emission standards
- No crankcase emissions allowed

**APPLIES THROUGHOUT THE VEHICLE’S USEFUL LIFE**

**Whichever comes first:**
For vehicles with engines ≤ 70 cc, 5 years or 5000 km
For vehicles with engines > 70 cc, 5 years or 10 000 km
All-terrain vehicles (ATVs) and utility vehicles (UVs) manufactured in, distributed in or imported into Canada must conform to the standards via **ONE** of the following options starting in model year 2012.

**OPTION 1**
- Conform directly to standards
  - Hydrocarbon + nitrogen oxide (HC + NOₓ)
  - Alternative standards for ATVs and UVs with engines ≤ 100 cc
  - Alternative engine-based standards for model years 2012 to 2014 only
  - Fuel tank permeation

**OPTION 2**
- Covered by a U.S. EPA certificate AND sold concurrently in Canada and the U.S.
  - Must conform to emission standards or family emission limits referred to in the U.S. EPA certificate

**OPTION 3**
- **Fleet averaging**
  - Fleet averaging available for: HC + NOₓ and fuel tank permeation emission standards
  - Vehicle must conform to family emission limits
  - Fleet average emission credits or deficits must be determined
    - Deficits must be offset

**ALL** ATVs or UVs

**APPLIES THROUGHOUT THE VEHICLE’S USEFUL LIFE**

*Whichever comes first:
  For vehicles with engines < 100 cc, 5 years or 500 hours of operation or 5000 km
  For vehicles with engines ≥ 100 cc, 5 years or 1000 hours of operation or 10 000 km*
Application, Compliance and Exclusions

- **Exclusions**
  - Regulations do not cover those vehicles, vessels and engines:
    - Designed exclusively for competition
    - Powered by compression-ignition engines (diesel),
    - Powered by natural gas and over 250 kW (engines only)
    - Powered by electric motors
    - Installed in or designed for military combat or combat support
    - Being exported
    - Regulated by *On-Road Vehicle and Engine Emission Regulations*
# Administrative Requirements Overview

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Administrative Requirements
National Emissions Marks and Labels (s. 6-8)

• Authorisation for a National Emissions Mark (NEM)
  – Only required on prescribed engines that are manufactured in Canada and vehicles and vessels that have had their main assembly completed in Canada
  – Companies require Minister's authorization to use the mark
  – Application for authorization must contain:
    ▪ Company information; and
    ▪ Demonstration of a company's capability to verify compliance with the emission standards
    ▪ Signature by an authorized person
  – A company authorized to apply the mark is issued an unique authorization number to be applied with the mark
Administrative Requirements
National Emissions Marks and Labels (s. 6-8)

• Display of the National Emissions Mark and labels
  – Must be on or immediately next to the emission control information label;
  – If there’s no such label, in a visible or readily accessible;
  – Be permanently affixed and resistant to or protected against any weather condition; and
  – Bear inscriptions that are legible and indelible and that are indented or in a colour that contrasts with the background.

Location of authorization number can be under OR next to the national emissions mark
Administrative Requirements
National Emissions Marks and Labels (s. 6-8)

- **Engine, Vessel or Vehicle Identification Number**
  - Unique number issued for every engine, vessel and vehicle
  - Different from company authorization number
  - May be engraved or stamped on the engine, vessel or vehicle or on a label that meets the requirements of subsections 7(3) and (4)
Administrative Requirements

Importation Requirements and Documents (s. 37-39)

- Prior to importation, a declaration is required to be submitted to the Minister by a person or by a company importing an engine, vessel or vehicle.
- An importation declaration must contain:
  - Importer information (name, address)
  - Description of engine or vehicle (manufacturer, make model, model year, class and quantity)
  - Expected date of importation
- In the case the importer is a company:
  - Business number of company
  - A statement that the imported goods bear the National Emission Mark or that the company is able to produce evidence of conformity in accordance with the Regulations, or
- A template is available on EC website:
Administrative Requirements
Importation Requirements and Documents (s. 37-39)
Administrative Requirements

Importation Requirements and Documents (s. 37-39)

- In the case the importer is not a company
  - A statement that each of those engines, vessels or vehicles bears:
    - The national emission mark
    - The emission control information label that indicates conformity with the EPA emission standard in effect at the time of manufacturer completion of assembly
    - A label indicating the engine or vehicle conformed to the ‘California Air Resources Board’ at the time of its manufacture or completion of its main assembly
    - A statement for the manufacturer that the engine, vessel or vehicle conforms to the standards set out in these Regulations at the time of its manufacture or completion of its main assembly, as the case may be.
  - If a person imports less than 10 of any combination of engines, vessels or vehicles in a calendar year, is not required to make the declaration.
Administrative Requirements
Importation Requirements and Documents (s. 37-39)

- **Bulk Importation Declaration**
  - Provisions exist to allow bulk declarations for companies importing 500 or more products in a calendar year
  - Company must notify the Department of its intention to use bulk declarations “in a form and manner that is satisfactory to the Minister”.

- **Notice of Intent** should include the following information:
  - Company name and street address (and, if different, the mailing address);
  - The company’s business number assigned to it by the Minister of National Revenue;
  - The classes of engines, vessels or vehicles to be imported into Canada as well as the applicable models;
  - The estimated annual quantity of engines, vessels or vehicles to be imported into Canada;
  - The estimated frequency of importations (e.g. one shipment per month); and
  - The desired frequency of bulk declaration reporting (e.g. quarterly).

- The request must be signed by a duly authorized representative of the company.
Administrative Requirements

Importation Requirements and Documents (s. 37-39)

• Paragraph 155(1)(a) of the Act allows for the temporary importation into Canada of a vehicle, engine or vessel for the purposes of exhibition, demonstration, evaluation or testing for not longer than one year or any other period that the Minister specifies provided that the importer makes a signed declaration in the prescribed form and manner.

• The temporary importation declaration must contain:
  – Importer’s name and civic address (and, if different, their mailing address);
  – Manufacturer’s name, the number of vehicles, engines or vessels to be imported and the make, model, model year, and class of each of those vehicles, engines and vessels;
  – A statement that the vehicle, engine or vessel will be used for the sole purpose of exhibition, demonstration, evaluation, or testing; and
  – Date that the vehicle, engine or vessel will be imported and date that it will be removed from Canada or destroyed.

• Declaration is binding and must be filed with the Minister (i.e. our office) prior to the import.

• Provisions to allow quarterly submissions for companies whose world production of engines, vessels or vehicles, exceeds 2500 a year.

• There is no prescribed form.
Administrative Requirements

Importation Requirements and Documents (s. 37-39)

- Requests, where appropriate, will be coordinated with Transport Canada.

- Environment Canada will be requesting confirmation of the actual disposal method and date at the end of the temporary importation period.
  - Proof of export if removed from Canada (e.g. customs documentation).
  - Proof of destruction if destroyed. Destruction should be supervised by a Customs Officer (certificate of destruction). Video and/or photo records of the complete destruction (including a close-up of the vehicle identification number or engine/vessel serial number) should also be kept.

Used with permission of the owner
Incomplete engines, vessels and vehicles (Section 153(2) of CEPA 1999):

- Prior to importation, a company must submit to the Minister a declaration that contains the information described in section 37 along with:
  - A statement from the manufacturer that when the engine, or the main assembly of the vessel or vehicle is completed in accordance with the instructions provided by the manufacturer, the engine vessel or vehicle will conform to the standards prescribed under the Regulations; and
  - A statement from the company that the manufacture of engine or the main assembly of the vessel or vehicle will be completed in accordance with the instructions referred in the previous paragraph.
Administrative Requirements

Maintenance Instructions (s. 34)

• Maintenance instructions for emission performance are to be provided to the first retail purchaser of every engine, vessel or vehicle
• Must be provided in English, French or both languages as requested by the purchaser
Administrative Requirements

Maintenance and Retention of Records (s. 36)

- Company must retain all records for at least eight (8) years.
- If records are kept on behalf of a company, the company must keep a record of the name and address of the person who retains the records.
- Upon request, records must be submitted within 40 days or within 60 days if the records have to be translated from a language other than French or English.
Administrative Requirements

Notice of Defect (s. 43)

- Authority under Section 157(1) of CEPA 1999
  - A company ... shall, on becoming aware of a defect in the design, construction or functioning of the vehicle, engine or equipment that affects or is likely to affect its compliance with a prescribed standard, cause notice of the defect to be given in the prescribed manner to:
    - (a) the Minister;
    - (b) each person who has obtained such a vehicle, engine or equipment from the company; and
    - (c) each current owner ...
Administrative Requirements
Notice of Defect (s. 43)

• The notice of defect must contain:
  - Company information
  - Vehicle, vessel or engine information, including estimate of percentage of units affected
  - Defect description, pollution risk and a statement of the measures to be taken to correct the defect
  - A description of the means available to the company to contact the current owner

• Within 60 days after giving a notice of defect, an initial report must be sent to the Minister containing:
  - Notice of defect information
  - Number of vehicles and engines that have been issued a notice of defect
  - Chronology of all events that led the defect determination and the measures undertaken to correct the defect
  - Copy of all notices and bulletins issued regarding the defect
Administrative Requirements

Notice of Defect (s. 43)

• Follow-up reports are due:
  − For engines – 12 months after the initial report or previous report
  − For vessels and vehicles – 6 months after the initial report or previous report
  − Follow-up reports requires for two years after Notice is given

• The follow-up reports must contain:
  - Notice of defect information
  - Number of vehicles and engines that have been issued a notice of defect
  - Date the notices of defect were given to the current owners
  - Number or percentage of engines, vessels or vehicles repaired or requiring inspection
Administrative Requirements

Optional Fleet Averaging (s. 24-32)

- Option available for many types of emissions from marine engines and off-road recreational vehicles.
- Methods of calculating consistent with corresponding EPA rules.
- Provides flexibility to allow certification of engines and vehicles to a family emission limit that is less stringent than standards.
- Increased emissions must be offset, on a fleet basis, by engines or vehicles certified to a family emission limit that is better than the standard.
- If the offset cannot be achieved directly by the fleet, it may be achieved by the use of credits previously obtained by the company or transferred from another company.
  - Must be in respect of same type of fleet and emission type
A company may exclude from its fleets, vehicles that are covered by an EPA certificate and sold concurrently in Canada and the US if the number of vehicles sold in the US exceeds the number of vehicles sold in Canada.

A company that excludes vehicles is ineligible to obtain any fleet average emission credits in respect of that fleet and forfeits all credits obtained in previous model years for that fleet.

Deficit must be offset
- For the 2012 model year fleet, no later than the day on which its 2014 end of model year report is submitted
- For the 2013 and subsequent model years, no later than the day on which its end of model year report is submitted for that model year
A company must submit an end of model year report by **June 1** covering all engines or vehicles of the preceding model year imported into Canada (or manufactured) for first retail sale.

The report should include the following:

- Cover letter with signature of a person authorized to act on behalf of the company;
- The model year of all engines and vehicles and the method of compliance used;
- Statements of conformity to the applicable emission standards or family emission limits (FELs);
- For fleets, calculation of the average emission values and emission credits/deficit for each emission type (if applicable); and
- All values used to calculate the average emission values

Company must submit a report whether they use fleet averaging or not.

You are required to maintain records relating to the end of model year report for at least eight (8) years after its due date.
Useful Links

Canadian Environment Protection Act, 1999, Division 5
http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=24374285-1&offset=8&toc=show#e

On-Road Vehicle and Engine Emission Regulations

Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations

Off-Road Small Spark-Ignition Engine Emission Regulations

Off-Road Compression-Ignition Engine Emission Regulations

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

Compliance and Enforcement Policy
Contact Information

General inquiries: 1-800-668-6767

Ontario regional contact: (416) 739-5878
Regulatory Administration Section: (819) 956-5941

VehicleandEngineInfo@ec.gc.ca
Evidence of Conformity

What is “Evidence of Conformity”?

• Section 153(1) of the Canadian Environmental Protection Act, 1999 (CEPA 1999) states:

  1) No company shall apply a national emissions mark to any vehicle, engine or equipment, sell any vehicle, engine or equipment to which a national emissions mark has been applied or import any vehicle, engine or equipment unless

    a) the vehicle, engine or equipment conforms to the standards prescribed for vehicles, engines or equipment of its class at the time its main assembly or manufacture was completed;

    b) evidence of such conformity has been obtained and produced in the prescribed form and manner or, if the regulations so provide, in a form and manner satisfactory to the Minister;

    c) …
Evidence of Conformity

What is “Evidence of Conformity”?

- Subsection 35(1) and 35(2) of the Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations (SOR/2011-10)(MERV) outlines the two different paths a company can choose to provide evidence of conformity.
  - Subsection 35(1) if:
    - Vehicle/engine is covered by an EPA certificate, and;
    - Vehicle/engine is sold concurrently in the US and Canada.
  - Subsection 35(2) is for all other cases.
Evidence of Conformity

What is “Evidence of Conformity”?

Is the engine family of this engine/vehicle specifically listed* on a valid EPA certificate?

YES

Is this engine sold concurrently*?

YES

Subsection 35 (1) engine

NO

NO

Subsection 35 (2) engine

Type 1

Type 3

Subsection 35 (1) engine

NO

Subsection 35 (2) engine

Type 1
Evidence of Conformity

Evidence of Conformity under Subsection 35(1) of the MERV

• What is it?
• When do I submit it?
• Where do I submit it?
Evidence of Conformity under Subsection 35(1) of the MERV

What are the documents that need to be provided for evidence of conformity under subsection 35(1) of the MERV?

- Subsection 35(1) of the MERV is very specific concerning what needs to be submitted to EC for evidence of conformity:

  a) A copy of the EPA certificate covering the engine/vehicle;
  b) A document demonstrating that the engines/vehicles covered on the EPA certificate are sold concurrently in Canada and the United States;
  c) A copy of the records submitted to the EPA for the issuance of the EPA certificate; and
  d) An emission control information label in the form and location set out in the different sections of the different CFR for the various engines and vehicles
When do I need to submit the evidence of conformity under subsection 35(1) of the MERV?

- Subsection 36(3) of the MERV specifies when this information need to be submitted:
  - Upon written request for the evidence of conformity, the company shall provide it to the Minister within:
    - 40 days after the request is delivered to the company; or
    - 60 days after the request is delivered to the company if the evidence of conformity must be translated from a language other than French or English.
Evidence of Conformity

Evidence of Conformity under Subsection 35(1) of the MERV

- **Where** do I need to submit the evidence of conformity under subsection 35(1) of the MERV?
  - **Electronic versions**
    The electronic documentation must be in PDF or Microsoft Office format. It should be sent to Emission-Verification@ec.gc.ca with a case specific subject line:

    - To submit a submission for an engine/vehicle that falls under subsection 35(1) of the Regulations (when requested):
      
      “Evidence of Conformity for Emissions Compliance Verification & Testing submission - Name of Company - EC20XX-XXX”

  - **Paper copies sent to:**
    Director
    Transportation Division
    Energy and Transportation Directorate
    Environment Canada
    351 St. Joseph Blvd.
    Gatineau, QC K1A 0H3
Evidence of Conformity

Evidence of Conformity under Subsection 35(2) of the MERV

• What is it?
• When do I submit it?
• Where do I submit it?
Evidence of Conformity

Evidence of Conformity under Subsection 35(2) of the MERV

• **What** are the documents that need to be provided for evidence of conformity under subsection 35(2) of the MERV?
  – Subsection 35(2) of the MERV specifies:
    ▪ a company shall obtain and produce evidence of conformity for an engine or vehicle other than one referred to in paragraph 11(1)(b), or of a vessel or outboard other than one referred to in paragraph 11(1)(c) in a form and manner satisfactory to the Minister.
  
  – What is “in a form and manner satisfactory to the Minister”?
    ▪ EC classifies subsection 35(2) evidence of conformity submissions in 2 different types:
      – Type 1 : Specifically listed on an EPA certificate and sold in Canada but not in the United States
      – Type 3 : Not specifically listed on an EPA certificate
Evidence of Conformity under Subsection 35(2) of the MERV

Is the engine family of this engine/vehicle specifically listed* on a valid EPA certificate?

- **YES**
  - Is this engine sold concurrently*?
    - **YES**
      - Subsection 35 (1) engine
    - **NO**
      - Subsection 35 (2) engine

- **NO**
  - Type 3
Evidence of Conformity

Evidence of Conformity under Subsection 35(2) of the MERV

• What are the documents that need to be provided for evidence of conformity under subsection 35(2) of the MERV?

  – Type 1: Specifically listed on an EPA certificate and sold in Canada but not in the United States
    • A copy of the valid EPA certificate on which the engine family is specifically listed
    • A statement of compliance letter

  – Type 3: Not specifically listed on an EPA certificate
    • Since the Regulations are aligned with those of the United States, a “Type 3” evidence of conformity submission should be the equivalent to what must be submitted to the EPA to obtain a certificate
      – technical information;
      – An emission control information label;
      – statement of compliance letter.
Evidence of Conformity

Evidence of Conformity under Subsection **35(2)** of the MERV

- *When* do I need to submit the evidence of conformity under subsection 35(2) of the MERV?
  
  - the evidence of conformity under this subsection must be provided **before** the engine/vehicle is imported or leaves the possession or control of the company
Evidence of Conformity

Evidence of Conformity under Subsection 35(2) of the MERV

• Where do I need to submit the evidence of conformity under subsection 35(2) of the MERV?
  – Electronic versions
    ▪ The electronic documentation must be in PDF or Microsoft Office format. It should be sent to Emission-Verification@ec.gc.ca with a case specific subject line:
      “Canada-unique submission - Name of Company – ECA # (once assigned)"
  – Paper copies sent to:
    Director
    Transportation Division
    Energy and Transportation Directorate
    Environment Canada
    351 St. Joseph Blvd.
    Gatineau, QC K1A 0H3
**Evidence of Conformity**

How do I know if my submission was “in a form and manner satisfactory to the Minister”?

Once Environment Canada receives a submission, it will be reviewed and if it is complete, an acknowledgement will be sent to confirm that the submission was “in a form and manner satisfactory to the Minister” within the turnaround times below.

<table>
<thead>
<tr>
<th>Type of engine/vehicle</th>
<th>Environment Canada’s acknowledgement turnaround time when COMPLETE information is provided</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type 1—Specifically listed on an EPA certificate</strong></td>
<td>§ Form and manner are satisfactory to the Minister: 15 calendar days after date of reception</td>
</tr>
</tbody>
</table>
Evidence of Conformity under Subsection 35(2) of the MERV

- Please note:
  - For engines/vehicles classified as type 1, Environment Canada may request, at the time of submission or there after, in writing:
    - A copy of the records submitted to the EPA for the issuance of the EPA certificate. (same as an engine/vehicle classified under subsection 35(1) of the MERV)
### Exhaust Emission Standards for Outboard and PWC Engines

<table>
<thead>
<tr>
<th>Model year</th>
<th>Pollutant</th>
<th>Power(^1)</th>
<th>Emission Standard (g/kW-hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 and later</td>
<td>HC+NOx</td>
<td>(P \leq 4.3\text{kW}) (P &gt; 4.3\text{kW})</td>
<td>30.0 (2.1 + 0.09(151+557/P^{0.9}))</td>
</tr>
<tr>
<td></td>
<td>CO</td>
<td>(P \leq 40\text{kW}) (P &gt; 40\text{kW})</td>
<td>500-5.0(P) (300)</td>
</tr>
</tbody>
</table>

\(^1\)Power(P) = maximum engine power for the engine family, in kilowatts (kW)

**Note:** The standards are set out in subpart B of CFR 1045 section 103(a) and (d), the not to exceed exhaust emission standards set out in section 107; and the crankcase emission standard set out in section 115(a)
Emissions Compliance Verification Program

Exhaust Emission Standards for Conventional Inboard Engines

<table>
<thead>
<tr>
<th>Model year</th>
<th>Pollutant</th>
<th>Emission Standard (g/kW-hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 and later</td>
<td>HC+NOx</td>
<td>5.0</td>
</tr>
<tr>
<td></td>
<td>CO</td>
<td>75.0</td>
</tr>
</tbody>
</table>

Note: The standards are set out in subpart B of CFR 1045 section 105(a)(1) and (2) and 105(d), the not to exceed exhaust emission standards set out in section 107; and the crankcase emission standard set out in section 115(a)
## Exhaust Emission Standards for High-Performance Inboard Engines

<table>
<thead>
<tr>
<th>Model year</th>
<th>Pollutant</th>
<th>Power(^1)</th>
<th>Emission Standard (g/kW-hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013 and later</td>
<td>HC+NOx</td>
<td>P ≤ 485 kW</td>
<td>16.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P &gt; 485 kW</td>
<td>22.0</td>
</tr>
<tr>
<td></td>
<td>CO</td>
<td>P ≤ 485 kW</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P &gt; 485 kW</td>
<td>350</td>
</tr>
</tbody>
</table>

\(^1\)Power(P) = maximum engine power in kilowatts (kW)

**Note:** The standards are set out in subpart B of CFR 1045 section 105(a)(1) and (3) and 105(d) and the crankcase emission standard set out in section 115(a)
Emissions Compliance Verification Program

Permeation Emission Standards for Vessels and Outboards

<table>
<thead>
<tr>
<th>Model year</th>
<th>Permeation Emission Standards for Vessels and Outboards (g/m²/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fuel Tank</td>
</tr>
<tr>
<td>2015 and later</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Note: Vessels and Outboards also have to meet the applicable diurnal standards set out in sections 101(f)(1) and (3) and 105(b) set out in subpart B of CFR 1060.
Emissions Compliance Verification Program

**Useful Life for Vessels and Outboards**

Both exhaust and permeation emission standards are applicable to the vessel and outboard full useful life:

- **Outboard Engines** : 350 hours or 10 years, whichever occurs first;
- **PWC** : 350 hours or 5 years, whichever occurs first;
- **Conventional Inboard Engine** : 480 hours or 10 years, whichever occurs first;
- **High-Performance Inboard Engines** :
  - $P \leq 485 \text{ kW}$ : 150 hours or 3 years, whichever occurs first;
  - $P > 485 \text{ kW}$ : 50 hours or 1 year, whichever occurs first;
# Emissions Compliance Verification Program

## Exhaust Emission Standards for Snowmobiles

<table>
<thead>
<tr>
<th>Model year</th>
<th>Pollutant</th>
<th>Emission Standard (g/kW-hr)</th>
<th>Maximum allowable family Emission Standard (g/kW-hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 and later</td>
<td>HC</td>
<td>(1)</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>CO</td>
<td>(1)</td>
<td>400</td>
</tr>
</tbody>
</table>

\[ (1 - \frac{\text{HC}_{\text{STD}}}{150}) \times 100 + (1 - \frac{\text{CO}_{\text{STD}}}{400}) \times 100 \geq 100 \]

**Note:** Your corporate average HC standard may not be higher than 75 g/kW-hr and your corporate average CO standard may not be higher that 275 g/kW-hr
# Exhaust Emission Standards for Off-Road Motorcycles

<table>
<thead>
<tr>
<th>Model year</th>
<th>Pollutant</th>
<th>Emission Standard (g/km)</th>
<th>Maximum allowable family Emission Standard (g/km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 and later</td>
<td>HC+NOx</td>
<td>2.0</td>
<td>20.0</td>
</tr>
<tr>
<td></td>
<td>CO</td>
<td>25</td>
<td>50</td>
</tr>
</tbody>
</table>

**Note:** Off-road motorcycles for a given model year with engines that have a total displacement of 70 cm³ or less may conform to the exhaust emission standards set out for that model year in section 615(b) of subpart G of CFR.
## Exports Compliance Verification Program

### Exhaust Emission Standards for All-Terrain and Utility Vehicles

<table>
<thead>
<tr>
<th>Model year</th>
<th>Pollutant</th>
<th>Emission Standard (g/km)</th>
<th>Maximum allowable family Emission Standard (g/km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 and later</td>
<td>HC+NOx</td>
<td>1.5</td>
<td>20.0</td>
</tr>
<tr>
<td></td>
<td>CO</td>
<td>35</td>
<td>-</td>
</tr>
</tbody>
</table>

**Note:** All-terrain vehicles and utility vehicles for a given model year with engine that have a total displacement of less that 100cm³ may conform to the exhaust emission standards set out for that model year in section 615(a) of subpart G of CFR 1051
### Exhaust Emission Standards for All-Terrain and Utility Vehicles

<table>
<thead>
<tr>
<th>Engine Displacement</th>
<th>Pollutant</th>
<th>Emission Standard (g/kW-hr)</th>
<th>Maximum allowable family Emission Standard (g/kW-hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;225 cc</td>
<td>HC+NOx</td>
<td>16.1</td>
<td>32.2</td>
</tr>
<tr>
<td></td>
<td>CO</td>
<td>400</td>
<td>-</td>
</tr>
<tr>
<td>≥225 cc</td>
<td>HC+NOx</td>
<td>13.4</td>
<td>26.8</td>
</tr>
<tr>
<td></td>
<td>CO</td>
<td>400</td>
<td>-</td>
</tr>
</tbody>
</table>

**Note:** All-terrain vehicles and utility vehicles for each of the 2012 to 2014 model year may conform to the exhaust emission standards set out for that model year in section 145(b) of subpart B of CFR 1051
## Emissions Compliance Verification Program

**Permeation Emission Standards for Snowmobiles, Off-Road Motorcycles and All-terrain and Utility Vehicles**

<table>
<thead>
<tr>
<th>Model year</th>
<th>Permeation Emission Standards for Snowmobiles, Off-Road Motorcycles and All-Terrain and Utility Vehicles (g/m²/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fuel Tank</td>
</tr>
<tr>
<td>2012 and later</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**Note:** Snowmobiles, off-road motorcycles and all-terrain and utility vehicles also have to meet the crankcase emission standard set out in sections 115(a), subpart B of CFR 1051.
Useful Life for Snowmobiles, Off-Road Motorcycles and All-Terrain and Utility Vehicles

Both exhaust and permeation emission standards are applicable for the full useful life:

- **Snowmobiles**: 8000 km or 400 hours or 5 years, whichever occurs first;

- **Off-Road Motorcycles**:
  - Displacement > 70cc: 10 000 km or 5 years, whichever occurs first;
  - Displacement ≤ 70cc: 5000 km or 5 years, whichever occurs first;

- **All-Terrain and Utility Vehicles**:
  - Displacement > 100cc: 10 000 km or 1000 hours or 5 years, whichever occurs first;
  - Displacement ≤ 100cc: 5000 km or 500 hours or 5 years, whichever occurs first;
How to Demonstrate Compliance for Full Useful Life?

- For permeation emissions, compliance demonstration is performed following the procedures outlined in 40 CFR §1051.245 or in 40 CFR §1060.240.
  - It outlines two methods:
    - Via testing using procedures outlined in the CFR which includes
      - Permeation testing procedures; and
      - Durability procedures
    - Via “designed based” certification
      - Providing statements that the following technologies are used:

<table>
<thead>
<tr>
<th>If the tank permeability control technology is . . .</th>
<th>Then you may design-certify with a tank emission level of . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) A metal fuel tank with no non-metal gaskets or with gaskets made from a low-permeability material</td>
<td>1.5 g/m²/day.</td>
</tr>
<tr>
<td>(ii) A metal fuel tank with non-metal gaskets with an exposed surface area of 1000 mm² or less</td>
<td>1.5 g/m²/day.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>If the fuel-line permeability control technology is . . .</th>
<th>Then you may design-certify with a fuel line permeation emission level of . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Hose meeting the specifications for Low Emission Fuel Lines as described in 40 CFR 1048.105</td>
<td>15 g/m²/day.</td>
</tr>
<tr>
<td>(ii) Hose meeting the R11–A or R12 permeation specifications in SAE J30 as described in 40 CFR 1060.810</td>
<td>15 g/m²/day.</td>
</tr>
</tbody>
</table>

Note: If a company decides to use the “designed based” certification, its product must still meet the applicable standards if tested.
Emissions Compliance Verification Program

Environment Canada’s Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emissions Compliance Verification Program

• The purpose of the program is to confirm the validity of the evidence of conformity submitted by companies to demonstrate compliance.

• The program consists of two steps:
  – Step 1: Review of evidence of conformity;
    ▪ Compare engine/vehicle purchased for program to description in the evidence of conformity;
  – Step 2: Prepare and test engine/vehicle to confirm data in supplied evidence of conformity.
Since it is the responsibility of the company to demonstrate compliance, Step 2 does not begin until Step 1 has been completed as per the requirements of the regulations.
Engines/vehicles are selected based on selection criteria such as:
- New technologies;
- Past performance;
- Sales volume;
- Canada Unique; and
- Coordination with EPA.
Engines/Vehicles are purchased directly off of dealerships or stores.

Emissions Compliance Verification Program

Environment Canada’s Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emissions Compliance Verification Program
1. If covered by EPA certificate (subsection 35(1) of MERV) companies are asked to submit evidence of conformity as outlined in our regulations:
   - EPA certificate;
   - Certificate application;
   - Concurrent sale document;
   - Copy of the Emission Control information label.

2. If covered under subsection 35(2) of MERV the following may be requested:
   - Documents that have been submitted to our department to demonstrate compliance;
   - Proof they have been submitted prior to leaving the possession of the company.
Emissions Compliance Verification Program

Environment Canada’s Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emissions Compliance Verification Program

At this point:

- If all the evidence of conformity to demonstrate compliance to the applicable standards has been produced as outlined in the regulations (MERV), the program proceeds to Step 2.
- If a company has not been able to produce the evidence of conformity as outlined in the MERV, the file is referred to Environment Canada’s Enforcement Branch (EB).
Service accumulation is performed in the laboratory using a dynamometer or special accumulator.
Engines/Vehicles are transferred to our lab for testing.
Results are reviewed and compared to the standards and data obtained through the evidence of conformity.

- If the results are below the standards and performing as indicated in the evidence of conformity, we release them;
- If results are above the applicable standards, the company is contacted to give them the opportunity to determine the cause.
  - If the issue is determined to be the result of a defect the company may address through the Notice of Defect provisions, if applicable.
  - If no collaboration from company, the file is transferred to EB.
Emissions Compliance Verification Program

Environment Canada’s Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emissions Compliance Verification Program
If the testing performed by EC confirms the results submitted by the company through the evidence of conformity and that it is below the applicable standards, the engine/vehicle is released from the program and sent to public auction.
Key points to conclude

- Evidence of Conformity: Am I covered under subsection 35(1) or 35(2) of the MERV?

  Is the engine family of this engine/vehicle specifically listed* on a valid EPA certificate?

  YES  NO

  Is this engine sold concurrently*?

  YES  NO

  Type 3

  Type 1

Subsection 35 (1) engine  Subsection 35 (2) engine
Contact Information

For inquiries regarding evidence of conformity please contact:

Vehicles and Engines Testing for Emissions Verification Section

(613) 998-3579

Emission-Verification@ec.gc.ca