

Reply to Comments Received on the Discussion Draft of the Off-Road Compression-Ignition Engine Emission Regulations

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Environment Canada**

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1.0 Introduction

In July 2003, Environment Canada issued a Discussion Draft of the *Off-Road Compression-Ignition Engine Emission Regulations*¹. This document provides a detailed summary of the comments received from stakeholders and provides Environment Canada's responses to these comments. The major issues raised by commenters in regards to the proposed Regulations are also addressed in the Regulatory Impact Analysis Statement (RIAS) that accompanies the publication of the final Regulations in the *Canada Gazette* Part I.

The comments received are divided into two sub-sections: broad policy related questions and technical questions related to interpretation of the proposed Regulations or editorial suggestions regarding the regulatory text.

2.0 Parties providing submissions

Submissions on the proposed Regulations were received from:

- Alberta Association of Municipal Districts and Counties (AAMD&C)
- BC Environment
- Canadian Association of Equipment Dealers (CAED)
- Cummins Western Canada
- Engine Manufacturers Association (EMA)
- Government of Yukon
- Manufacturers of Emission Controls Equipment (MECA)
- Nova Scotia Department of Environment and Labour
- Saskatchewan Environment
- Stevenson Equipment Limited

3.0 Policy Issues: comments and response

3.1 Alignment with and reference to U.S. EPA Emission Standards

Saskatchewan Environment:

- "...the announced intention to align Canadian regulatory requirements for these engines and the sulphur content of the fuels with those of the U.S. EPA is a vital aspect of implementing these changes. Any move towards harmonizing the fuel and engine requirements for this range of equipment would be welcomed."

Canadian Association of Equipment Distributors (CAED):

- "...we applaud the governments' initiative concerning emission control and we strongly support the implementation of new emission regulations."

¹ The discussion draft is available at:
http://www.ec.gc.ca/ceparegistry/documents/part/offroad_dd/diesel_notice.cfm

- “The [C]EPA standards should exactly follow those of the U.S. without addition or deletion. They should be a legal requirement, not a voluntary compliance.”

B.C. Environment:

- “We remain supportive of the thrust of the federal vehicle and fuel agenda, and of its general approach of matching US requirements, with adjustments as appropriate for Canadian conditions.”

Cummins Western Canada:

- “...we support the proposal as it appears to mirror the U.S. EPA regulations.”
- “The standards should be exactly the EPA standards without any additions or deletions. We don’t want any additional testing criteria.”

Nova Scotia Department of Environment and Labour:

- “Nova Scotia also favours the proposed alignment with the U.S. EPA standards, and the convergence of environmental standards where environmental performance can be improved.”

Manufacturers of Emission Controls Association (MECA):

- “...supports aligning Canada’s emission standards for off-road CI engines with the U.S. EPA Tier 2, Tier 3 and, when finalized, the Tier 4 standards together with the 15 ppm sulphur limit for diesel fuel sold for use by off-road engines.”

Equipment Manufacturers Association:

- “EMA supports EC’s approach in the discussion draft, which for the most part, references EPA regulations.”

Response:

The comments reaffirm support from respondents for Canada to align emission standards with the corresponding U.S. standards. As stated in section 2 of the proposed Regulations, one of the purposes of the Regulations is to establish Canadian emission standards and test procedures for engines that are aligned with those of the U.S. EPA. The proposed Regulations incorporate by reference where possible the applicable technical standards contained in the U.S. Code of Federal Regulations.

Environment Canada plans to maintain alignment with the U.S. EPA Tier 4 standards for nonroad compression-ignition engines. Comments on specific aspects of the Regulations are addressed in other sections of this document.

3.2 Engines and Persons subject to the proposed Regulations

- CAED – “[...] the regulations should apply to both new and used equipment including those of authorized importing dealers, end user importers and grey market importers. Furthermore, whether new or used, both the equipment and their power sources should conform to the EPA rules in effect at the time that the equipment or vehicle was manufactured.”
- Cummins Western Canada – “The rules should apply equally to authorized importing dealers, end users importers or grey market importers.”

Response:

The proposed Regulations are in accord with the comment.

The proposed Regulations prescribe emission standards for 2006 and later model-year engines. The applicable standards are based on the model year of the engine. All persons importing such engines into Canada as well as persons in the business of manufacturing and/or distributing 2006 and later model-year engines manufactured in Canada would be subject to the proposed Regulations.

3.3 Timing / Coming into Force

3.3.1 Timing

- Alberta Association of Municipal Districts and Counties – “Although our association supports the goals of lower emissions and cleaner air, the board must oppose the implementation of these regulations at this time. [...] impact on capital and maintenance costs for agricultural and other heavy equipment [...] devastating impact of closed borders to Canadian cattle and the lingering after-effects of drought and low commodity prices in Alberta.”

Response:

As discussed in the Regulatory Impact Analysis Statement, in 1998, the U.S. Environmental Protection Agency estimated price increases for off-road diesel engines designed to meet the corresponding U.S. Tier 2 and 3 standards of about 0.5 to 3 percent for some power ranges. Most engines sold in Canada are already certified to U.S. EPA standards and therefore this is reflected in Canadian prices. Price increases due to this regulation are expected to be minimal.

The proposed Regulations are proceeding as planned.

3.3.2 Coming into Force

- Cummins Western Canada – “The date of introduction should be the same as the US EPA.”

Response:

The proposed Regulations establish Canadian emission standards aligned with existing U.S. EPA rules. The U.S. EPA emissions standards are incorporated by reference to ensure alignment with the U.S. standards.

The proposed Regulations will come fully into force on January 1, 2006 and apply to 2006 and later model year engines, see Table 1. The emissions standards applicable to an engine of a given model year are the same as those in effect in the U.S. for an engine of the same model year.

Table 1: Emissions Standards under the Proposed Regulations

Engine power	Tier	Effective Date (Model Year)	NMHC +NOx (g/kWh)	CO (g/kWh)	PM (g/kWh)
kW<8	Tier 2	2006 and later	7.5	8.0	0.80
8≤kW<19	Tier 2	2006 and later	7.5	6.6	0.80
19≤kW<37	Tier 2	2006 and later	7.5	5.5	0.60
37≤kW<75	Tier 2	2006, 2007	7.5	5.0	0.40
	Tier 3	2008 and later	4.7	5.0	0.40
75≤kW<130	Tier 2	2006	6.6	5.0	0.30
	Tier 3	2007 and later	4.0	5.0	0.30
130≤kW<225	Tier 3	2006 and later	4.0	5.0	0.20
225≤kW<450	Tier 3	2006 and later	4.0	3.5	0.20
450≤kW≤560	Tier 3	2006 and later	4.0	3.5	0.20
kW>560	Tier 2	2006 and later	6.4	3.5	0.20

3.4 Averaging, banking and trading credit

- “EMA supports EC’s proposal not to require a separate “sum-to-zero” averaging, banking and trading (ABT) program for Canada. [...] EMA supports EC’s approach, which allows U.S. EPA certified ABT engines to be sold in Canada, but which does not require separate credit accounting for Canada.”

Response:

The proposed Regulations are in accord with the comment.

As discussed in the Regulatory Impact Analysis Statement, Canada is part of a homogeneous Canada/U.S. market for off-road compression-ignition engines. Product offerings and sales mixes are expected to be similar in Canada and the U.S. and therefore overall emission levels from off-road compression-ignition engines would be comparable.

Environment Canada has determined that administering a Canadian averaging program for this category of engines would be a regulatory burden without commensurate environmental benefits.

3.5 Replacement Engines

- CAED – “We are hopeful this initiative will evolve to include remanufactured engines and go as far as to follow the U.S. initiative of government funding to bring old engines into EPA compliance.”

Response:

The proposed Regulations introduce emissions standards for 2006 and later model-year engines.

Environment Canada has no current plans to regulate remanufactured engines.

3.6 Proposed changes to Regulations

Comments were received from Stevenson Equipment Ltd. regarding a concern that the EPA’s Intent Rule will limit the ability of independent equipment dealers to compete in the diesel off-road equipment market. “In general our arguments centre around the basic proven principles relating to the basic fact that the EPA, the OEM’s [Original Equipment Manufacturer] and the Engine Manufacturers have had a long standing unimpeded working relationship whereby the OEM/EM’s have been the leaders in developing the guidelines and reforming the “off-road” regulations for the EPA. [...] To this the Independent Dealer fights for his livelihood [...] in an effort to maintain “free trade” and comply with global emission reduction goals.”

Response:

The standards and administrative requirements of the proposed Regulations are not intended to affect competitiveness of the off-road diesel engine and machine industries in Canada or the industrial sectors using such engines and machines. Clear rules with a level playing field are expected to be beneficial to

competitiveness as all engines and machines have to meet the same standards. The proposed Regulations would affect distributors who are currently marketing engines and machines that do not meet North American standards.

3.7 Adoption of Tier 4 Standards

MECA provided comments they had made on the U.S. EPA proposed Tier 4 standards and 15 ppm fuel sulphur limit.

- “If the EPA’s proposed nonroad diesel engine standards and diesel fuel sulphur control program is adopted, these companies are committed to make the necessary investments to ensure that the emission control technology needed is available.”
- “MECA believes the U.S. EPA proposed Tier 4 exhaust and crankcase emission standards for nonroad diesel engines can be achieved in a cost-effective manner within the lead-time provided.”
- “As is the case with meeting the 2007/2010 on-road HDE standards, < 15 ppm diesel sulphur fuel is absolutely essential for meeting EPA’s proposed PM standards for nonroad diesel engines 25 to > 750 hp and EPA’s proposed NOx standards for nonroad diesel engines 75 to > 750 hp.”
- “MECA also supports the implementation of an interim 500 ppm sulphur limit, which the U.S. EPA has proposed to take effect in 2007. Reducing sulphur in nonroad diesel fuel from the current levels found in Canada will not only provide direct air quality benefits and enhance engine durability, but will also enable the use of diesel oxidation catalyst technology.”

Response:

The February 2001 *Federal Agenda on Cleaner Vehicles, Engines and Fuels* set out Canada’s policy to develop emission standards aligned with the U.S. federal emission standards. The proposed emissions Regulations will introduce a regulatory scheme for off-road diesel engines aligned with the U.S. EPA standards. Environment Canada intends to maintain alignment with the EPA Tier 4 standards once they are finalized.

Environment Canada is developing amendments to the existing *Sulphur in Diesel Fuel Regulations* to regulate sulphur levels for off-road diesel fuel in alignment with U.S. EPA levels and as necessary to support engine emission control technologies.

4.0 Regulatory Issues: comments and response

4.1 Interpretation

Stevenson Equipment Limited:

- “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.

In what manner will the CEPA handle the above issues in comparison to the EPA?”

Response:

The proposed Regulations set out technical standards respecting exhaust, crankcase and smoke emissions. The proposed Regulations establish emission standards and test procedures aligned with those of the U.S. EPA. While the overall objectives of the proposed Regulations are similar, the laws of both countries differ. Canadian legislation does not authorize the discretion allowed to the U.S. EPA administrator.

The proposed Regulations are structured such that U.S. EPA certificates of conformity are accepted whether or not the EPA administrator has exercised discretion and whether or not alternative standards are applied.

In the case of engines that are not certified by the EPA, a manufacturer or importer may produce evidence of conformity in a form and manner that is satisfactory to the Minister, which normally means the same evidence as would be provided to obtain an EPA certificate.

4.2 Application for authorization to apply the national emissions mark

Stevenson Equipment Ltd. submitted comments seeking clarification on the national emissions mark

- “Any company that intends to apply a national emissions mark in relation to an engine shall apply to the Minister to obtain an authorization. What are the criterion for authorization?”

- “information to show that the company is capable of verifying compliance with the standards set out in these Regulations. What type of information will be accepted?”

Response:

Companies are responsible for ensuring that their products comply with the proposed Regulations. Section 152 of CEPA 1999 prohibits a company from transporting prescribed engines between provinces or territories unless the engine has a national emissions mark applied to it. Subsection 153(1) of CEPA 1999 requires engines to conform to the requirements of the proposed Regulations as a condition of use of the mark. 153(1) also directly requires conformity as a condition of importation, such that the national emissions mark is not essential for imported engines. The proposed Regulations, therefore, exclude imported engines from requiring a national emissions mark.

Information that could satisfy the requirement of subsection 6(2)(d) of the discussion draft (also subsection 6(2)(d) of the proposed Regulations) to show that a company is capable of verifying compliance with the standards could include (refer to Guidance Document: Off-Road Small Spark-Ignition Engine Emission Regulations):

- a. Recent experience in obtaining U.S. EPA emission certification for engines that would be covered under the proposed *Off-Road Compression Ignition Engine Emission Regulations*; or
- b. Technical information to show that it is capable of verifying compliance with the standards set out in the proposed Regulations including, but not limited to, information describing the capabilities of the emission test facilities operated by, or on behalf of, the company to produce evidence that its engines conform to the standards set out in the Regulations. This may include evidence that the emission test facility used on behalf of the company has produced test results used in support of a successful application to the EPA for the issuance of a certificate of conformity.

4.3 Engine Standards

- EMA – “EC should delete or revise the provisions at subsection 8(1). Subsection 8(1) would prohibit the use of an emission control system that would release “a substance that causes air pollution and that would not have been released if the system were not installed”. Virtually all emission control systems operate by altering the chemical composition of the exhaust and thus may create air pollutant species that are not otherwise present. [...] EMA recommends that EC delete this provision in its entirety or, at a minimum, restrict this prohibition to emission control systems that cause the emission of a substance that would create an unreasonable risk to the public.”

Response:

Section 8(1) of the discussion draft (section 9(1) of the proposed Regulations) is designed to reflect U.S. EPA standards (section 106, subpart B, part 89 of the Code of Federal Regulations).

Section 8(1) of the discussion draft includes a restriction on design parameters of an emission control system. Environment Canada believes it is important that the proposed Regulations include a design restriction on emission control systems. It is not Environment Canada's intention to prevent the use of emission control systems that are expected to be used to meet emission standards in the U.S.

4.4 Replacement Engines

- EMA – “EC should adopt provisions to allow the importation into Canada, of engines identified as replacement engines in accordance with EPA regulations and minimize the burden of additional labeling requirements.”

Response:

The proposed Regulations are in accord with the comment.

The replacement engine provision in section 11 of the discussion draft (section 12 of the proposed Regulations) was modified to make it clearer. Also, subsection 12(3) has been added, requiring a label on a replacement engine to facilitate the administration of the Regulations. This can be either a bilingual label identifying the engine as a replacement engine or the replacement engine label set out by the U.S. EPA in section 1003(b)(7), Subpart K, part 89 of the Code of Federal Regulations.

4.5 Transition Engines

- EMA – “EC should not limit the meaning of “transition engine” and should align the periods when these engines can be used with the U.S. EPA.”

Response:

The proposed Regulations are in accord with the comment.

The transition engine provisions in section 12 of the discussion draft (section 13 of the proposed Regulations) were modified. The definition of a transition engine has been expanded to correspond to the flexibility provisions set out by the U.S. EPA for machine manufacturers under section 102(d), subpart B, part 89 of the Code of Federal Regulations. Additionally, subsection 13(5) has been added to enable a company to import transition engines for installation into machines that would qualify.

Eligible periods for transition engines have been modified to align with the U.S. standards.

To facilitate administration of the proposed Regulations, labeling requirements for transition engines have been maintained. Labeling requirements have been broadened, in recognition of current voluntary industry practice to label flexibility engines (named transition engine in Canada) in the U.S.

4.6 Records/Labeling

4.6.1 Evidence of Conformity

- Stevenson Equipment Ltd. has a concern with respect to the requirements of Section 15 – “Requests to the OEM’s for a copy of the EPA certificate under current regulation are typically very difficult to acquire. [...] If an OEM’s has the ability to “decertify” emissions status of any given engine, any requests made by an independent equipment dealer will be met with a decertified reply.”
- Stevenson Equipment Ltd. is unclear on section 17 – “[...] “any engine manufactured in the eight years preceding the request” Should it no relate to the engines imported by the importer of record and the applicable engines as per the phase in starting in 2006? Are you requesting we acquire engine letters of conformity for every machine (engine) we are considering for purchase including domestically?”
- Stevenson Equipment Ltd. – “the manufacturer's statement regarding EPA certification status may change after we have submitted our declaration, confirmed proper labeling, etc. [...] we anticipate the OEM / Engine Manufacturer to decertify the engine and claim the labeling is fraudulent. [...] there is no way to confirm or prove they have flip flopped on the certification status. [...] Our machine (engine) will potentially be seized [...] we will be fined and prosecuted by CEPA.”

Response:

These issues are a commercial matter between engine manufacturers and distributors. The requirements of the proposed Regulations regarding documents required to demonstrate conformity with the regulatory standards were not modified. However, Environment Canada is willing to revisit this matter if evidence is brought forward that the proposed Regulations may have a significant negative impact on the normal course of business for distributors.

Companies are responsible for ensuring that engines they import comply with the proposed Regulations and for providing such evidence of conformity upon request by the Minister. The proposed Regulations enable a company to provide evidence

of conformity in the form of a valid U.S. EPA certificate of conformity and demonstration of concurrent sale in the U.S. (section 16 of the proposed Regulations). Evidence of conformity can also be provided in a form and manner satisfactory to the Minister (section 17 of the proposed Regulations).

The Minister can request evidence of conformity for engines subject to the proposed Regulations for a period of up to 8 years following their manufacture. This period corresponds to the record retention time frame under the current EPA standards.

4.6.2 Labeling

- EMA – “EC should minimize the burden of additional labeling requirements for Canada. [...] Labeling requirements that are not harmonized with the EPA are problematic because of the cost of implementing new labels, the complexity of the labeling process and space constraints.”
- CAED – “We believe that all equipment should carry an appropriate EPA decal from the time of manufacture.”
- Cummins – “All equipment should have the appropriate EPA decal or sticker that applied at the time of manufacture.”
- Stevenson Equipment Ltd. “many of the plastic sticker type labels being used by Caterpillar and Volvo are easily peeled off [...]. If we import an engine and it is properly labeled at time of import, how long does our responsibility last?”

Response:

The engine identification labels are intended to facilitate the administration of the proposed Regulations. Engines covered by an EPA certificate of conformity are required to be identified with the U.S. EPA engine information label. Replacement (section 12 of the proposed Regulations) and transition engines (section 13), require appropriate labeling.

With regard to label durability, it is the practical expectation of Environment Canada that a label remain affixed to the engine. Environment Canada intends to address any instances of “missing” labels on a case by case basis.

4.7 Importation requirements and documents

- EMA – “EMA supports EC’s approach which minimizes additional importation documentation reporting, and offers the option of bulk reporting. [...] we urge EC to work with Canada Customs to ensure that the Canadian regulations, when implemented, are fully understood. [...] remanufactured engines are not subject to EPA labeling requirements and are currently imported into Canada without

undue delay, and this should not change. Specific guidance may be needed to address these engines to avoid delays due to the absence of a label.”

Response:

The importation documentation requirements are similar to those under the Off-Road Small-Spark-Ignition Engine Emission Regulations and reflect information that should be readily available on documents already being submitted to the Canada Border Service Agency (previously called Canada Customs and Revenue Agency). This should reduce the administrative burden on both importers and the government by eliminating the need to create and submit additional forms. To assist with the transition, the Department plans to prepare a guidance document to assist importers with regard to importation requirements as they relate to these Regulations (refer to Guidance Document: Off-Road Small Spark-Ignition Engine Emission Regulations).

4.8 Defect Information

- EMA – “EC should administer the Defect Information section of the proposed rule in a manner that parallels the U.S. EPA’s defect reporting requirements. [...] we would ask that in the administration of the defect information provisions, the Minister utilize the discretion provided in CEPA as follows:
 - 1) Generally interpret the “becoming aware” threshold of 157(1) as meaning determining the defect to be present on 25 engines. [...]
 - 2) Align the contents of the “notice of defect” with the contents of the Emission Defect Information Report (EDIR) as defined by EPA at 40 CFR Part 85 Subpart T 85.1903(c).
 - 3) [...] In cases where it is determined that corrective action is not required, the Minister should use his discretion and exempt the manufacturer from having to send notices to individual owners and from requirements to submit an initial and quarterly reports regarding the defect. [...] necessary to avoid additional reporting and unnecessary expense [...]
 - 4) Align the contents of the “initial report” referred to in subsection 157(7) of the CEPA with the contents of the Voluntary Emission Recall Report [...] EPA requirements meet or exceed the CEPA requirements [...]
 - 5) Align the contents of the quarterly report referred to in subsection 157(7) of the CEPA with the contents of the quarterly report as defined by EPA at 40CFR Part 85 Subpart T 85.1904(b).”

Response:

While Environment Canada intends to administer notice of defect requests in a manner compatible with U.S. practice, the Canadian legislation is different and the regulations will not align exactly.

Section 157 of CEPA 1999 outlines the obligations of a company on “becoming aware of a defect in the design, construction or functioning of the engine that affects or is likely to affect its compliance with the prescribed standard”. This

includes an initial notice and follow-up reports for a period of two years unless the Minister directs otherwise. Environment Canada expects to be given a report similar to that described by the EPA under subsection 85.1903 of the CFR.