
EUROMOT POSITION

12 December 2014



Comments on the proposed amendments for stationary combustion engines to the Swiss Ordinance on Air Pollution Control (OAPC)

Herewith Euromot provides comments on the consultation on the proposed revision of the Swiss clean air regulation, launched by the Federal Department of the Environment, Transport, Energy and Communications (DETEC) as of 30th September 2014. In particular, we would like to comment on the proposed amendments for reducing emissions from stationary combustion engines.

We are looking forward to continue providing our industry's' input into the discussions with the DETEC and with other stakeholders and remain available for further clarification of our position and questions.

1. Ziffer 823: Dust emissions for all stationary combustion engines

The limit value for all stationary engines, regardless of the engine power, is proposed to be lowered from 50 to 10 mg/m³. Amongst others, the justifications, according to a letter accompanying the amendment proposal, are as follows:¹

- It reflects the actual state of technology
- It is similar in stringency to nonroad mobile machinery engines where the actual limit values are 0.025 g/kWh.

¹ Änderung der Luftreinhalte-Verordnung in den Bereichen stationäre Verbrennungsmotoren, Gasturbinen, weitere stationäre Anlagen sowie Brennstoffe und Marktüberwachung - Erläuternder Bericht vom 31. August 2014

- The proposed limit values will be met by gaseous fuelled engines without any further change
- The proposed limit value will be met if engines listed in the BAFU Engines List² or if soot filters listed in the BAFU filter list³ are applied

These justifications seem to follow a “**one size fits all**” approach rather than taking into account the characteristics of stationary vs. mobile applications and of the individual engine power categories. Both the BAFU engine list and the filter list are including typical small and medium-size NRMM engines. The by far largest unit in the engine list is a 446 kW / Tier 4 final engine; the majority of engines are much smaller. The same applies for the filters from the filter list.

We question an approach which apparently was followed here, i.e. to readily adapt whatever is available for small engines and mobile machinery to stationary applications of basically unlimited size.

The proposed particulate matter emission limit value for medium/slow speed liquid-fired engines is stricter than the current values set for large combustion plants in the EU best available technology reference document (LCP BREF, 2006),⁴ i.e. beyond BAT. Currently available stationary medium/slow speed engine plants (by applying primary or secondary emission abatement measures) running on the light-fuel oil or heavy fuel oil cannot fulfil the proposed particulate matter emission limit value.

Particulate Matter reduction technologies based on catalysts, such as Diesel Particulate Filters for engines are very sensitive to the sulphur content of the fuel. This technology is used on smaller high-speed engines designed to operate on ULSD (ultra-low sulphur Diesel with 10 ppm sulphur), typically in the automotive industry. The technology is not suitable for the current stationary engine fuel sulphur levels. **Typically, DPFs are only available for smaller high-speed engines of less than 5 MWth. E.g. the US only applies limit values that might require a DPF to engines of less than 10 Litres/cylinder.**

In addition to above the different exhaust gas compositions between the different engine types/sizes will further complicate the situation. E.g. bigger reciprocating engines have a higher oxygen content than small non road / heavy duty type units and thus normalizing the emission limit value to 5 vol-% O₂ will give a **very skewed overall picture** of the required reduction capacity of the secondary emission abatement technique. E.g. for a big stationary engine the set emission limit might then in practice become almost 3 times stricter than the set emission limit value appears to be due to the set artificial reference oxygen content (5 % O₂) for all applications. See Euromot Position paper /1/ for more information.

²http://www.bafu.admin.ch/partikelfilterliste/11647/index.html?lang=en&download=NHZLpZeg7t,Inp6I0NTU042I2Z6In1ad1IZn4Z2qZpnO2YUq2Z6gpJCGe3t5fWym162epYbg2c_JjKbNoKSn6A--

³http://www.bafu.admin.ch/partikelfilterliste/index.html?lang=en&download=NHZLpZeg7t,Inp6I0NTU042I2Z6In1ad1IZn4Z2qZpnO2YUq2Z6gpJCGeX57fmym162epYbg2c_JjKbNoKSn6A--

⁴ EU LCP BREF 2006 at http://eippcb.jrc.ec.europa.eu/reference/BREF/lcp_bref_0706.pdf, page 405 chapter 6.5.5.2 table 6.47 (at steady stater loads at 85 .. 100 % of MCR)

Concerning the references to cities in Switzerland's which already have applied locally very dust stringent emission limits, such as Zürich (5 mg/Nm³ dust¹), we would like to state that this would require the use of specially designed smaller non road derivatives equipped with particulate traps and operating on ultralow sulphur Diesel fuel. Whilst we do not question the technical feasibility of these applications specialised for operation in urban conditions, we do not believe that it should be applied as a general rule for all stationary applications and the whole of Switzerland.

Proposal for Dust limit values

EUROMOT recommends setting particulate emission limit values in line with the current LCP BREF (2006) values developed for large internal combustion engine plants. These are strict and challenging to achieve and would help reducing particulate matter emissions.

- LFO: particulate limit < 30 mg/Nm³ (15 % O₂)
- HFO: particulate limit < 50 mg/Nm³ (15 % O₂)

2. NOx limit for engines operated on biogas

The proposed reduction in the NOx limit for engines operated on biogas from the existing value of 400 mg/Nm³ at 5% O₂ to values of 250 and 100 mg/Nm³ for engines > 100 kW and > 1 MW respectively is of concern to Euromot. In particular the emission limit of 100 mg/Nm³ can only be achieved with the use of a secondary abatement system (selective catalytic reduction, or 'SCR') positioned in the exhaust stream of the engine to 'clean up' the exhaust leaving the engine. Biogas is commonly produced by anaerobic digestion of sewage and other waste and is a renewable energy source, but contains impurities (such as siloxanes). Unfortunately, these impurities in the gas can poison the catalyst after even a short exposure, preventing the operation of the SCR system, and consequently it is suggested this value is maintained at the present value of 400 mg/Nm³ at 5% O₂ in order to ensure that it remains feasible to operate engines directly on biogas such as at sewage and waste treatment plants.

3. Ziffer 827: Emergency engines

We understand it is still at the discretion of the individual authorities to set up limit values for engines used in emergency applications, i.e. operating at less than 50 hours per year. We would regard any requirement to apply aftertreatment systems to those engines as seriously disproportionate.

4. Demonstrating compliance of engines < 1 MWth

Engines <1 MW thermal power (1 MWth) are expected to be outside the scope of the proposed EU medium combustion plant (MCP) legislation. Liquid-fuelled engines below this

power threshold will generally be series-produced non-road engines that are being used in a stationary application. To reduce the administrative burden and ensure a level playing field for all manufacturers and operators, we would recommend Switzerland accept EU or UN ECE type approved non-road liquid fuelled engines in this power range, especially for the <100 kW category, in place of the requirement for on-site measurements. Euromot recommends EU stage IIIA non-road engines (or equivalent UN ECE R96 categories) for emergency applications <1 MWth. Subsequent to the introduction of EU stage V from 2019 onwards, these engines could be used for non-emergency applications <1 MWth,

5. Sources

/1/ Euromot Position: "O2 Reference Point in Exhaust Emission Legislation" at link <http://www.euromot.eu/download/543838c8de278fdb4d095cf>

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EUROMOT is the European Association of Internal Combustion Engine Manufacturers. It is committed to promoting the central role of the IC engine in modern society, reflects the importance of advanced technologies to sustain economic growth without endangering the global environment and communicates the assets of IC engine power to regulators worldwide. For more than 20 years we have been supporting our members - the leading manufacturers of internal combustion engines in Europe, USA and Japan - by providing expertise and up-to-date information and by campaigning on their behalf for internationally aligned legislation. The EUROMOT member companies employ all over the world about 200,000 highly skilled and motivated men and women. The European market turnover for the business represented exceeds 25 bn euros. Our **EU Transparency Register** identification number is **6284937371-73**.

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