
EUROMOT POSITION

15 April 2013



EUROMOT Response on the Stakeholder Consultation on the
Revision of Directive 97/68/EC on Emissions from Non-road
Mobile Machinery Engines:

Proposal for the inclusion of large spark ignited engines
(petrol-fuelled, 19-56 kW)

This document is additional to the main Euromot submission to the Commission consultation.¹
It specifically addresses the topic of inclusion of large spark ignited engines (petrol-fuelled,
19-56 kW).

1. OVERVIEW

Euromot supports the inclusion of large spark ignited petrol-fuelled engines in the range $19 \leq \text{kW} < 56$. Euromot notes that Commission provides a proposed set of limit values in the summary table of the consultation document that deviate from those of the U.S., but that Commission does not elaborate the rationale or cost/benefit analysis for the proposed limit values. Therefore Euromot does not support these proposed limit values.

Euromot recommends that a further evaluation of appropriate limit values be conducted, taking into account the full range of products that Commission anticipates bringing into the scope of the legal act. It is observed that test cycles appropriate to the intended in-scope applications will also be required.

¹ As submitted to European Commission – DG ENTR / Unit B.4 on 8 April 2013. Available from the Euromot website under <http://euromot.org/download/907346c4-08f9-4424-9a1a-3ed3930d23e6/EU%20NRMM%20TechRev%20Public%20Stakeholder%20Consultation%202013-04-08.pdf>.

For reference see chapter 1.4 of the main paper.

In order to move forward the discussion on this topic, Euromot would like to make the following outline proposal for inclusion in the legal act. Due to the relatively small EU market for SI engines in this power range, and the fact that this market is international in scope, Euromot proposes to align with existing U.S. EPA exhaust emissions limit values and test cycles, expressed in a manner appropriate for inclusion in the EU legal act.

2. SCOPE

This document is intended to provide a proposal for SI engines $19 \leq kW < 56$ operated on petrol, intended for use in applications other than all terrain vehicles (ATVs) and side-by-side vehicles (SbS). This proposal does NOT cover engines for use in ATVs, SbS or other related off-road utility vehicles. Euromot believes that these vehicles should be considered separately and will not comment on these.

3. ENGINE CATEGORIES

Euromot proposes two new categories of SI engines operated on petrol for use in applications other than ATVs and SbS, as follows:

- (a) SI engines $19 \leq kW \leq 30$ with swept volume < 1 litre
- (b) SI engines $19 \leq kW < 56$ not included under (a) above

4. LIMIT VALUES, TEST CYCLES AND TECHNICAL REQUIREMENTS

- (a) SI engines $19 \leq kW \leq 30$ with swept volume < 1 litre

Limit value	- HC+NOx: 8.0 g/kWh - CO: 610 g/kWh
Test cycle	G2 discrete mode NRSC or equivalent ramped modal cycle (RMC)
Emission Durability Period (Useful Life)	1000 hours
Crankcase emissions	Crankcase emissions may not be discharged directly into the ambient atmosphere from any engine throughout its useful life, unless the crankcase emissions are added to the exhaust emissions (either physically or mathematically) during all emission testing.

(b) SI engines $19 \leq kW < 56$ not included under (a) above

Limit value	<ul style="list-style-type: none"> - For each engine family to be type approved the engine manufacturer must select HC+NOx and CO emission limits that satisfy the following formula: $(HC+NOx) \times CO^{0.784} \leq 8.57$. - The HC + NOx limit must be rounded to the nearest 0.1 g/kWh and may not exceed 2.7 g/kWh. - The CO limit must be rounded to the nearest 0.1 g/kWh and shall not exceed 20.6 g/kWh. 	
Test cycles	Variable speed engines with maximum test speed ≤ 3400 rpm	<ul style="list-style-type: none"> - C2 discrete mode NRSC or equivalent ramped modal cycle (RMC); plus - Large spark-ignition (SI) composite transient cycle, as specified in Appendix II to U.S. 40CFR1048
	Variable speed engines with maximum test speed > 3400 rpm	<ul style="list-style-type: none"> - C2 discrete mode NRSC or equivalent ramped modal cycle (RMC)
	Constant speed engines	<ul style="list-style-type: none"> - D2 discrete mode NRSC or equivalent ramped modal cycle (RMC)
Emission Durability Period (Useful Life)	5000 hours	
Crankcase emissions	Crankcase emissions may not be discharged directly into the ambient atmosphere from any engine throughout its useful life, unless the crankcase emissions are added to the exhaust emissions (either physically or mathematically) during all emission testing.	

Examples of permitted pairs of HC+NOx and CO limits (non-exhaustive)

HC + NOx (g/kWh)	CO (g/kWh)
2.7 (highest permitted)	4.4
2.2	5.6
1.7	7.9
1.3	11.1
1.0	15.5
0.8	20.6 (highest permitted)

5. INTRODUCTION DATES

If limits remain aligned with those in the U.S., Euromot recommends an engine placing on the EU market date no sooner than three years after publication in the *Official Journal (OJ)*, with a type approval date two years earlier.

6. TEST PROCEDURES & DEROGATIONS

Euromot notes that it will be necessary to review the SI engine test procedures and derogations and consider any necessary adjustments prior to implementation of the legal act. Euromot would welcome the opportunity to work with the Commission on this topic.

7. MARKET SURVEILLANCE

Euromot requests that any introduction of new engine categories into the legal act is coupled with action to introduce more effective measures for market surveillance, with the objective to avoid the placing on the market in the EU of products that do not conform to these newly proposed requirements. The placing on the market of non-conforming engines would have a strongly negative impact on those manufacturers who invest in introducing new products into the EU market to comply with the published requirements, as is already apparent in existing SI engine categories. Moreover, there is the danger that non-compliant products can negatively affect health and the environment in the EU.

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