European Barge Union

Revision of Directive 97/68/EC on NRMM
Joint position paper by EBU and ESO

Finding a sound balance between new emission standards and economical and technical feasibility! Changing the proposal is inevitable!

Introduction

The European Commission recently released its proposal for a regulation on requirements relating to emission limits and type-approval for internal combustion engines for non-road mobile machinery (COM (2014) 581 final). With the proposal the European Commission aims to cut emissions of major air pollutants from engines in non-road mobile machinery and cut the complexity of the legal framework for the sector.
Besides improving air quality throughout the EU, the new proposal according to the Commission should provide the NRMM sector with a predictable and stable regulatory framework that is fit for the future: a clear focus in this context was therefore put on international alignment of technical requirements, particularly with a view to bringing those of the EU and the US closer together. This is expected to ensure a level playing field for European industry and avoid unfair competition from low-cost imports of non-regulated machinery. Beyond that, the proposal is expected to alleviate the pressure on individual Member States for additional regulatory action at national level that would eventually hamper the internal market.

Where the inland shipping industry in terms of CO_2 emission already is the cleanest modality, it welcomes the proposed revision of the Non Road Mobile Machinery (NRMM) directive 97/86/EC and the objectives on which the regulation is based, in particular the aim of better air quality and emission limits for all new engines. This objective of the inland shipping industry is regardless the better emission performance than apparently was assumed and taken into account in the preliminary hypothesis of

the assessment and the proposal. Reference is made to the recent report of the 'Institute for Applied Ecology', ("Aktualisierung der Emissionsfaktoren und Verkehrsleistungen von Binnenschiffen und Übertragung ins Tremod Programm, Heidelberg, 15 Dezember 2011) as well its updated version („Aktualisierung der Emissionsberechnung für die Binnenschifffahrt und Übertragung der Daten in Tremod", 30 November 2013) http://www.ifeu.de.

Ship-owners are committed to reach the objectives as referred to in the Commission proposal. That implies however that they must have the opportunity to do so within reasonable perimeters. If and when the proposed engines are available at reasonable, i.e. affordable prices inland shipping will comply with all demands to implement those measures on engines. As the market of inland vessel engines is strongly linked to the maritime engines its development follows the global maritime market rather than stand alone EU standards.
To actually reach these objectives amending of the proposed regulation is necessary. Therefore the following amendments are proposed to the Parliament and the Council to be taken into account in the upcoming negotiations of the Commission proposal.

Table II-5: Stage V emission limits for engine category IWP defined in Article 4 point (5) of the NRMM annexes in combination with the proposal.

The emission limits from the proposal (COM (2014)581 final) for the Parliament and the Council) should be changed in alignment with US standards (option 2 in the proposal, on page 5). Changing of the proposal means that the stage V emission limits for engine category IWP defined in Article 4 Point (5) of the proposal have to be changed into the USA EPA Tier 4 emission limits for the category IWP.

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Current emission limits:

Table II-5: Stage V emission limits for engine category IWP defined in Article 4 point (5)

Emission stage	Engine sub-category	Power range	Engine ignition type	CO	HC	NOx	PM mass	PN	A
		kW		g/kWh	g/kWh	g/kWh	g/kWh	#/kWh	
Stage V	IWP-v-1 IWP-c-1	37≤P<75	all	5,00	(HC+NOx≤4,70)		0,30	-	6,00
Stage V	IWP-v-2 IWP-c-2	75≤P<130	all	5,00	(HC+NOx≤5,40)		0,14	-	6,00
Stage V	IWP-v-3 IWP-c-3	130≤P<300	all	3,50	1,00	2,10	0,11	-	6,00
Stage V	IWP-v-4 IWP-c-4	300≤P<1000	all	3,50	0,19	1,20	0,02	$1x10^{12}$	6,00
Stage V	IWP-v-5 IWP-c-5	P>1000	all	3,50	0,19	0,40	0,01	$1x10^{12}$	6,00

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***Proposed new limits**: **Table 8.** Tier 4 Standards for Marine Diesel Category 1/2 Engines*

Power (P)	NOx	HC	PM	
kW	g/kWh	g/kWh	g/kWh	
P ≥ 3700	1.8	0.19	0.12a	2014 c
	1.8	0.19	0.06	2016 b, c
2000 ≤ P < 3700	1.8	0.19	0.04	2014 c, d
1400 ≤ P < 2000	1.8	0.19	0.04	2016 c
600 ≤ P < 1400	1.8	0.19	0.04	2017 d

a 0.25 g/kWh for engines with 15-30 dm3/cylinder displacement.

b Optional compliance start dates can be used within these model years.

c Option for Cat. 2: Tier 3 PM/NOx+HC at 0.14/7.8 g/kWh in 2012, and Tier 4 in 2015.

d The Tier 3 PM standards continue to apply for these engines in model years 2014 and 2015 only.

Justification

The amendment to change the stage V emission limits for engine category IWP defined in Article 4 Point (5) of the proposal into the USA EPA Tier 4 emission limits for the category IWP is based on the following arguments.

- the 'Panteia assessment' (on which much of the proposal is based) is referring to and based on assumptions, statistics, functions and calculations 'as if those engines were available'. Given the small niche market of inland vessel engines these will not be available other than tailor made. Therefore a balance between ecological and economic feasibility must be found.

- the methodology of the Panteia assessment is based on the Marco Polo calculator which is based on wrong assumptions regarding the performance of inland

vessel engines. Reference is made to the recent report of the 'Institute for Applied Ecology', ("Aktualisierung der Emissionsfaktoren und Verkehrsleistungen von Binnenschiffen und Übertragung ins Tremod Programm, Heidelberg, 15 Dezember 2011) as well its updated version („Aktualisierung der Emissionsberechnung für die Binnenschifffahrt und Übertragung der Daten in Tremod", 30 November 2013) http://www.ifeu.de which leads to a much better emission record for inland vessels.

- engines which can comply with the proposed emission levels are not available yet in the market. Engine manufacturers are not able to develop engines according to the proposed emission limits. Reason is partly the technical (im)possibilities at the moment and partly the huge investments needed for a relatively small (niche)sector. Inland shipping in Europe is only in need of approximately 100 new engines each year. (see 'Euromot' positions on marine engines on www.euromot.eu).

- after treatment of new engines is theoretically possible in some cases but no real solution. Smaller ships do not have the space for after treatment devices and the costs (because it will be customization for each ship separately) are very high. Also maintenance costs are unknown. Smaller ships will then be scrapped and owners of ships which have the space will overhaul their engines as long as possible.

- the goals of the proposal will not be achieved as long as these new engines are not available and lead to a reverse effect of overhauling old engines. The introduction of the proposed (isolated EU) emission standard for inland vessels would result in an environmental backlash for inland shipping as regards airpollutants. Furthermore, "new emission limits reflecting technological progress" have to be based on real technological progress and more realistic limits.

- according to LNG engine suppliers the new emission standard even with new LNG engines cannot be achieved. While LNG vessels are expected to be one of

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the future solutions in terms of emission reduction towards zero emission, the proposal would hamper investment in LNG engines.

- engines meeting the proposed US standard criteria are directly available in every size. Those engines are more than 80% cleaner than the engines based upon the current standard which would imply a major improvement compared to the actual situation regarding air pollutants (see attachment).

The associations representing the inland navigation industry call upon the negotiating parties to take into account these considerations and amend Article 4 Point (5) in line with the above proposal. Following the existing marine engine emission standard (EPA Tier 4) a sound balance between the economic feasibility and environmental improvement is guaranteed leading to a tremendous improvement of the emission record of inland navigation.

8 January 2014

The European Barge Union (EBU) represents the majority of the inland navigation freight and passenger carrying industry in Europe. Its members are the national associations of barge owners and barge operators as well as international associations in the field of inland navigation and related areas. EBU's main objective is to represent the interests of the inland shipping industry and Rivers-See shipping industry at a Pan-European level and to contribute to the development of a sustainable and efficient Pan-European transport system.

The European Skippers' Organisation (ESO) is the voice of the European private inland shipping entrepreneurs in Belgium, Germany, France, Poland and The Netherlands since 1975.

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Attachment

Environmental progress related to the actual CCNR limits for inland shipping is substantial: (see table below)

Table of EPA Tier 4 emission limits compared to CCNR limits

	CCR2				**Tier 4 Standards for Marine Diesel Category 1/2 Engines**				**Emission reduction Tier 4 versus CCR2**			
Pn	CO	HC	NO_x	PT	CO	HC	NO_x	PT	CO	HC	NO_x	PT
[kW]	[g/kWh]	[g/kWh]	[g/kWh]	[g/kWh]	[g/kWh]	[g/kWh]	[g/kWh]	[g/kWh]	%	%	%	%
600 =< P_N < 1000	3,5	1	6-11	0,2	5	0,19	1,8	0,04	-42,86%	81,00%	70%-83,6%	80,00%
1000 =< P_N	3,5	1	6-11	0,2	5	0,19	1,8	0,04	-42,86%	81,00%	70%-83,6%	80,00%