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Informal document GRPE-77-26
77th GRPE, 6-8 June 2017
Agenda item 4(a)

Adaptation process of UN Regulation No. 132

Adolfo Perujo

GRPE 77th Session

7-8 June, 2018

Regulation No. 132 - background

- UN Regulation No. 132
Uniform provisions concerning the approval of Retrofit Emission Control devices (REC) for heavy duty vehicles, agricultural and forestry tractors and non-road mobile machinery equipped with compression ignition engines
- Addresses the need to align the text of Regulation No. 132 to the provisions of the 05 series of amendments to Regulation No. 96.

Regulation No. 132 - Status

- The working document proposing a “Supplement 1 to the 01 Series of amendments to UN Regulation No. 132” is discussed in this Session of the GRPE
(ECE/TRANS/WP.29/GRPE/2018/12)
- It has been developed in accordance with the mandate given by the GRPE during its 74th Session in January 2017
(ECE/TRANS/WP.29/GRPE/74)

UN Regulation No. 132

Equivalence Matrix for Regulation No. 96 / REC Class I / II/III/IV to include Stage V

Table A9/2 of Annex 9, amend to read:

Equivalence Matrix for Regulation No. 96 / REC Class I / II

Baseline *	Net Power [kW]	Component [g/kWh]	Class I / II, to the standard of										Stage V
			H	I	J	K	L	M	N	P	Q	R	
E	$130 \leq P \leq 560$	PM	-	-	-	-	0.025	-	-	-	0.025	-	0.015
F	$75 \leq P < 130$	PM	-	-	-	-	-	0.025	-	-	-	0.025	0.015
G	$37 \leq P < 75$	PM	-	-	-	-	-	-	0.025 ⁽¹⁾	0.025 ⁽²⁾	-	0.025 ⁽¹⁾	0.015
D ⁽³⁾	$19 \leq P < 37$	PM	-	-	-	0.6	-	-	-	-	-	-	0.015
H	$130 \leq P \leq 560$	PM	-	-	-	-	0.025	-	-	-	0.025	-	0.015
I	$75 \leq P < 130$	PM	-	-	-	-	-	0.025	-	-	-	0.025	0.015
J	$37 \leq P < 75$	PM	-	-	-	-	-	-	0.025 ⁽¹⁾	0.025 ⁽²⁾	-	0.025 ⁽¹⁾	0.015
K	$19 \leq P < 37$	PM	-	-	-	-	-	-	-	-	-	-	0.015
L	$130 \leq P \leq 560$	PM	-	-	-	-	-	-	-	-	-	-	0.015
M	$75 \leq P < 130$	PM	-	-	-	-	-	-	-	-	-	-	0.015
N	$56 \leq P < 75$	PM	-	-	-	-	-	-	-	-	-	-	0.015
P	$37 \leq P < 56$	PM	-	-	-	-	-	-	-	-	-	-	0.015
Q	$130 \leq P \leq 560$	PM	-	-	-	-	-	-	-	-	-	-	0.015
R	$56 \leq P < 130$	PM	-	-	-	-	-	-	-	-	-	-	0.015

⁽¹⁾ Only for engines $56 \leq P < 75$

⁽²⁾ Only for engines $37 \leq P < 56$

⁽³⁾ Power band $19 \leq P < 37$ adapted to the subdivision defined in 05 series of amendment of Regulation No. 96 (Stage V)

* Where the baseline corresponds to that in 04 series of amendment of Regulation No. 96.

UN Regulation No. 132

Equivalence Matrix for Regulation No. 96 / REC Class I / II/III/IV to include Stage V

Table A9/3 of Annex 9, amend to read:

Equivalence Matrix for Regulation No. 96 / REC Class III

eline*	Net Power [kW]	Component [g/kWh]	Class III, to the standard of										
			H	I	J	K	L	M	N	P	Q	R	Stage V
E	130 ≤ P ≤ 560	NO _x	4.0 ⁽⁴⁾	-	-	-	2.0	-	-	-	0.4	-	-
F	75 ≤ P < 130	NO _x	-	4.0 ⁽⁴⁾	-	-	-	3.3	-	-	-	0.4	-
G	37 ≤ P < 75	NO _x	-	-	4.7 ⁽⁴⁾	-	-	-	3.3 ⁽¹⁾	4.7 ^(2,4)	-	0.4 ⁽¹⁾	-
y ⁽³⁾	19 ≤ P < 37	NO _x	-	-	-	7.5 ⁽⁴⁾	-	-	-	-	-	-	4.70 ⁽⁴⁾
H	130 ≤ P ≤ 560	NO _x	-	-	-	-	2.0	-	-	-	0.4	-	-
I	75 ≤ P < 130	NO _x	-	-	-	-	-	3.3	-	-	-	0.4	-
J	37 ≤ P < 75	NO _x	-	-	-	-	-	-	3.3 ⁽¹⁾	4.7 ^(2,4)	-	0.4 ⁽¹⁾	-
K	19 ≤ P < 37	NO _x	-	-	-	-	-	-	-	-	-	-	-
L	130 ≤ P ≤ 560	NO _x	-	-	-	-	-	-	-	-	0.4	-	-
M	75 ≤ P < 130	NO _x	-	-	-	-	-	-	-	-	-	0.4	-
N	56 ≤ P < 75	NO _x	-	-	-	-	-	-	-	-	-	0.4	-
P	37 ≤ P < 56	NO _x	-	-	-	-	-	-	-	-	-	-	4.70 ⁽⁴⁾
Q	130 ≤ P ≤ 560	NO _x	-	-	-	-	-	-	-	-	-	-	-
R	56 ≤ P < 130	NO _x	-	-	-	-	-	-	-	-	-	-	-

⁽¹⁾ Only for engines 56 ≤ P < 75

⁽²⁾ Only for engines 37 ≤ P < 56

⁽³⁾ Power band 19 ≤ P < 37 adapted to the subdivision defined in 05 series of amendment of Regulation No. 96 (Stage V)

⁽⁴⁾ Sum of hydrocarbons and oxides of nitrogen

where the baseline corresponds to that in 04 series of amendment of Regulation No. 96.

UN Regulation No. 132

Equivalence Matrix for Regulation No. 96 / REC Class I / II/III/IV to include Stage V

Table A9/4 of Annex 9, amend to read:

Equivalence Matrix for Regulation No. 96 / REC Class IV

line*	Net Power [kW]	Component [g/kWh]	Class IV, to the standard of										Stage V
			H	I	J	K	L	M	N	P	Q	R	
3	130 ≤ P ≤ 560	PM	-	-	-	-	0.025	-	-	-	0.025	-	0.015
		NO _x	4.0 ⁽⁴⁾	-	-	-	2.0	-	-	-	0.4	-	-
7	75 ≤ P < 130	PM	-	-	-	-	-	0.025	-	-	-	0.025	0.015
		NO _x	-	4.0 ⁽⁴⁾	-	-	-	3.3	-	-	-	0.4	-
3	37 ≤ P < 75	PM	-	-	-	-	-	-	0.025 ⁽¹⁾	0.025 ⁽²⁾	-	0.025 ⁽¹⁾	0.015
		NO _x	-	-	4.7 ⁽⁴⁾	-	-	-	3.3 ⁽¹⁾	4.7 ^(2,4)	-	0.4 ⁽¹⁾	-
3 ⁽³⁾	19 ≤ P < 37	PM	-	-	-	0.6	-	-	-	-	-	-	0.015
		NO _x	-	-	-	7.5 ⁽⁴⁾	-	-	-	-	-	-	4.70⁽⁴⁾
1	130 ≤ P ≤ 560	PM	-	-	-	-	0.025	-	-	-	0.025	-	0.015
		NO _x	-	-	-	-	2.0	-	-	-	0.4	-	-
7	75 ≤ P < 130	PM	-	-	-	-	-	0.025	-	-	-	0.025	0.015
		NO _x	-	-	-	-	-	3.3	-	-	-	0.4	-
3	37 ≤ P < 75	PM	-	-	-	-	-	-	0.025 ⁽¹⁾	0.025 ⁽²⁾	-	0.025 ⁽¹⁾	0.015
		NO _x	-	-	-	-	-	-	3.3 ⁽¹⁾	4.7 ^(2,4)	-	0.4 ⁽¹⁾	-
3 ⁽³⁾	19 ≤ P < 37	PM	-	-	-	-	-	-	-	-	-	-	0.015
		NO _x	-	-	-	-	-	-	-	-	-	-	4.70⁽⁴⁾
7	130 ≤ P ≤ 560	PM	-	-	-	-	-	-	-	-	-	-	0.015
		NO _x	-	-	-	-	-	-	-	-	0.4	-	-
7	75 ≤ P < 130	PM	-	-	-	-	-	-	-	-	-	-	0.015
		NO _x	-	-	-	-	-	-	-	-	-	0.4	-
7	56 ≤ P < 75	PM	-	-	-	-	-	-	-	-	-	-	0.015
		NO _x	-	-	-	-	-	-	-	-	-	0.4	-
7	37 ≤ P < 56	PM	-	-	-	-	-	-	-	-	-	-	0.015
		NO _x	-	-	-	-	-	-	-	-	-	-	4.70⁽⁴⁾
7	130 ≤ P ≤ 560	PM	-	-	-	-	-	-	-	-	-	-	0.015
		NO _x	-	-	-	-	-	-	-	-	-	-	-
7	56 ≤ P < 130	PM	-	-	-	-	-	-	-	-	-	-	0.015
		NO _x	-	-	-	-	-	-	-	-	-	-	-

only for engines 56 ≤ P < 75

only for engines 37 ≤ P < 56

power band 19 ≤ P < 37 adapted to the subdivision defined in 05 series of amendment of Regulation No. 96 (Stage V)

limit of hydrocarbons and oxides of nitrogen

where the baseline corresponds to that in 04 series of amendments of Regulation No. 96.

UN Regulation No. 132

- Introduction of **Annex 13**: “Specific requirements regarding the approval of a REC with respect to the emission limits set out in the 05 series of amendments of Regulation No. 96
 1. Introduction

This annex sets out the specific requirements for the approval of a REC fitted to an engine, for the purpose of meeting the emission limits set out in the 05 series of amendments to Regulation No. 96.
 2. Specific requirements
 - 2.1. The retrofitted engine system shall meet the following specific requirement.
- [...]

Regulation No. 132

- Goals:

1. Approval of the working document in this 77th Session of the GRPE (June 2018)
2. Submit it for approval of WP29 (November 2018)



Thanks

Any questions?

You can find me at adolfo.perujo@ec.europa.eu

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