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Item 3 (b) of the provisional agenda

**Options for revising the annexes to the Gothenburg Protocol to
Abate Acidification, Eutrophication and Ground-level Ozone:
technical annexes**

Draft revised annex VIII

Note by the secretariat

Summary

This document presents proposals for amendments to annex VIII to the Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone for consideration by the Working Group on Strategies and Review at its forty-ninth session. It is based on documents ECE/EB.AIR/WG.5/2009/20, ECE/EB.AIR/WG.5/2011/2, and further proposals made by the European Union and provisionally agreed at the forty-eighth session of the Working Group in April 2011.

Proposed new text is indicated in bold. Text in square brackets that is not marked for deletion has not been provisionally agreed by the Working Group.

Limit values for fuels and new mobile sources

Introduction

1. Section A applies to Parties other than Canada and the United States of America, section B applies to Canada and section C applies to the United States of America.
2. The annex [~~contains – delete~~] **specifies emission** limit values for NO_x, expressed as nitrogen dioxide (NO₂) equivalents, for hydrocarbons, most of which are volatile organic compounds, for carbon monoxide (CO) and for dust,¹ as well as environmental specifications for marketed fuels for vehicles.
3. The timescales for applying the limit values in this annex are laid down in annex VII[, **unless specified in the tables below**].

A. Parties other than Canada and the United States of America

Passenger cars and light-duty vehicles

4. Limit values for power-driven vehicles with at least four wheels and used for the carriage of passengers (category M) and goods (category N) are given in table 1. [They are based on the European regulations Euro 3 to Euro 6. – ~~delete~~]

Heavy-duty vehicles

5. Limit values for engines for heavy-duty vehicles are given in tables 2, [~~and – delete~~] **3 and 3 bis**, depending on the applicable test procedures.

Compression-ignition (CI) and spark-ignition (SI) non-road vehicles and machines

6. Limit values for agricultural and forestry tractors and other non-road vehicle/machine engines are listed in tables 4 to [~~8 – delete~~] **6**.

[Locomotives and railcars – ~~delete~~]

7. Limit values for locomotives and railcars are listed in tables [~~9 to 12 – delete~~] **7 and 8**.

[Inland waterway vessels – ~~delete~~]

8. Limit values for inland waterway vessels are listed in table [~~13 – delete~~] **9**.

[Recreational crafts – ~~delete~~]

9. Limit values for [~~inland waterway vessels – delete~~] **recreational crafts** are listed in table [~~14 – delete~~] **10**.

[¹ In the context of this Protocol, dust and TSP have the same meaning. In the following tables, the terms Particulate Matter or Particulates are used to keep the coherence with the EC directives used. – ~~delete~~]

Motorcycles and mopeds

10. Limit values for motorcycles and mopeds are given in tables [15 to 18 – ~~delete~~] **11 and 12.**

Fuel quality

11. Environmental quality specifications for petrol and diesel are given in tables [19 to 20 – ~~delete~~] **13 and 14.**

Table 1. Limit values for passenger cars and light-duty vehicles

Category		Class, application date	Reference mass (RW) (kg)	Limit values ^{d/} - delete ^{d/}											
				Carbon monoxide		Total Hydrocarbons (HC)		NMVOC		Nitrogen oxides		Hydrocarbons and nitrogen oxides combined		[Particulates ^{a/} - delete] Particulate matter	
				L1 (g/km)		L2 (g/km)		L3 (g/km)		L4 (g/km)		L2 + L4 (g/km)		L5 (g/km)	
				Petrol	Diesel	Petrol	Diesel	Petrol	Diesel	Petrol	Diesel	Petrol	Diesel	Petrol	Diesel
Euro 3 - delete	M ^{b/} - delete		[All - delete]	[2.3 - delete]	[0.64 - delete]	[0.20 - delete]	-	-	-	[0.15 - delete]	[0.50 - delete]	-	[0.56 - delete]	-	[0.05 - delete]
	N ₁ ^{d/} - delete	[I - delete]	[RW ≤ 1305 - delete]	[2.3 - delete]	[0.64 - delete]	[0.20 - delete]	-	-	-	[0.15 - delete]	[0.50 - delete]	-	[0.56 - delete]	-	[0.05 - delete]
		[II - delete]	[1305 < RW ≤ 1760 - delete]	[4.17 - delete]	[0.80 - delete]	[0.25 - delete]	-	-	-	[0.18 - delete]	[0.65 - delete]	-	[0.72 - delete]	-	[0.07 - delete]
		[III - delete]	[1760 < RW delete]	[5.22 - delete]	[0.95 - delete]	[0.29 - delete]	-	-	-	[0.21 - delete]	[0.78 - delete]	-	[0.86 - delete]	-	[0.10 - delete]
Euro 4 - delete	M ^{b/} - delete		[All - delete]	[1.0 - delete]	[0.50 - delete]	[0.10 - delete]	-	-	-	[0.08 - delete]	[0.25 - delete]	-	[0.30 - delete]	-	[0.025 - delete]
	N ₁ ^{c/} - delete	[I - delete]	[RW 1305 - delete]	[1.0 - delete]	[0.50 - delete]	[0.10 - delete]	-	-	-	[0.08 - delete]	[0.25 - delete]	-	[0.30 - delete]	-	[0.025 - delete]
		[II - delete]	[1305 < RW ≤ 1760 - delete]	[1.81 - delete]	[0.63 - delete]	[0.13 - delete]	-	-	-	[0.10 - delete]	[0.33 - delete]	-	[0.39 - delete]	-	[0.04 - delete]
		[III - delete]	[1760 < RW - delete]	[2.27 - delete]	[0.74 - delete]	[0.16 - delete]	-	-	-	[0.11 - delete]	[0.39 - delete]	-	[0.46 - delete]	-	[0.06 - delete]
Euro 5	M ^{b/}	2009	All	1.0	0.50	0.10	-	0.068	-	0.06	0.18	-	0.23	0.0050	0.0050
	N ₁ ^{c/}	I, 2009	RW 1305	1.0	0.50	0.10	-	0.068	-	0.06	0.18	-	0.23	0.0050	0.0050
		II, 2010	1305 < RW ≤ 1760	1.81	0.63	0.13	-	0.090	-	0.075	0.235	-	0.295	0.0050	0.0050
		III, 2010	1760 < RW	2.27	0.74	0.16	-	0.108	-	0.082	0.28	-	0.35	0.0050	0.0050
	N ₂	2010		2.27	0.74	0.16	-	0.108	-	0.082	0.28	-	0.35	0.0050	0.0050

Euro 6	M ^{b/}	2014	All	1.0	0.50	0.10	-	0.068	-	0.06	0.08	-	0.17	0.0050	0.0050
	N ₁ ^{c/}	I, 2014	RW ≤ 1305	1.0	0.50	0.10	-	0.068	-	0.06	0.08	-	0.17	0.0050	0.0050
		II, 2015	1305 < RW ≤ 1760	1.81	0.63	0.13	-	0.090	-	0.075	0.105	-	0.195	0.0050	0.0050
		III, 2015	1760 < RW	2.27	0.74	0.16	-	0.108	-	0.082	0.125	-	0.215	0.0050	0.0050
	N ₂	2015		2.27	0.74	0.16	-	0.108	-	0.082	0.125	-	0.215	0.0050	0.0050

[^{a/} VLE expressed as a number of particulates/km are also defined for Euro 6 – ~~delete~~]

^{a/} **Test cycle specified by [...]**

^{b/} Except vehicles whose maximum mass exceeds 2,500 kg.

^{c/} And those category M vehicles specified in note b.

[^{e/} **Vehicle Category M; vehicles class I – ~~delete~~**].

Table 2. Limit values for heavy-duty vehicles — European steady-state cycle (ESC) and European load-response (ELR) tests

[Row – delete]	Application date	Carbon monoxide (g/kWh)	Hydrocarbons (g/kWh)	Nitrogen oxides (g/kWh)	[Particulates – delete] Particulate matter (g/kWh)	Smoke (m ⁻¹)
[A (EURO III) – delete]		[2.1 – delete]	[0.66 – delete]	[5.0 – delete]	[0.10 / 0.13 ^{a/} – delete]	[0.8 – delete]
[B1 (EURO IV) – delete]		[1.5 – delete]	[0.46 – delete]	[3.5 – delete]	[0.02 – delete]	[0.5 – delete]
B2 ("EURO V") "EURO VI"	2008 2013	1.5 1.5	0.46 0.13	2.0 0.40	0.02 0.010	0.5

^{a/} For engines with a swept volume below 0.75 dm³ per cylinder and a rated power speed above 3,000 revolutions per minute.

Table 3. Limit values for heavy-duty vehicles — European transient cycle (ETC) test

[Row – delete]	Application date	Carbon monoxide (g/kWh)	Non-methane hydrocarbons (g/kWh)	Methane ^{a/} (g/kWh)	Nitrogen oxides (g/kWh)	Particulates (g/kWh) ^{b/}
[A (2000) EURO III – delete]		[5.45 – delete]	[0.78 – delete]	[1.6 – delete]	[5.0 – delete]	[0.16 / 0.21 ^{c/} – delete]
[B1 (2005) EURO IV – delete]		[4.0 – delete]	[0.55 – delete]	[1.1 – delete]	[3.5 – delete]	[0.03 – delete]
B2 [(2008) – delete] EURO V	2008	4.0	0.55	1.1	2.0	0.03

^{a/} For natural gas engines only.

^{b/} Not applicable to gas-fuelled engines at stage [A and stages B1 and – delete] B2.

^{c/} For engines with a swept volume below 0.75 dm³ per cylinder and a rated power speed above 3,000 revolutions per minute.

Table 3 bis. Limit values for heavy-duty vehicles — European transient cycle (ETC) test

	Application date	Carbon monoxide (g/kWh)	Total Hydrocarbons (g/kWh)	Non-methane hydrocarbons (g/kWh)	Methane (g/kWh)	Nitrogen oxides (g/kWh)	Particulates (g/kWh) ^{b/}
EURO VI (CI)	2013	4.0	0.160			0.40	0.010
EURO VI (PI)	2013	4.0		0.160	0.50	0.40	0.010

Note: PI = Positive ignition, CI = Compression ignition.

[Table 4. Limit values (stage IIIA) for diesel engines for non-road mobile machines, agricultural and forestry tractors

Net power (P) (kW)	Carbon monoxide (g/kWh)	Sum of hydrocarbons and oxides of nitrogen (g/kWh)	Particulate matter (g/kWh)
$130 \leq P \leq 560$	3.5	4.0	0.2
$75 \leq P < 130$	5.0	4.0	0.3
$37 \leq P < 75$	5.0	4.7	0.4
$19 \leq P < 37$	5.5	7.5	0.6

– delete]

Table 4. [5. – delete] Limit values [(stage IIIB) – delete] for diesel engines for non-road mobile machines, agricultural and forestry tractors

Net power (P) (kW)	Application date	Carbon monoxide (g/kWh)	Hydrocarbons (g/kWh)	Nitrogen oxides (g/kWh)	Particulate matter (g/kWh)
$130 \leq P \leq 560$	2009	3.5	0.19	2.0	0.025
$75 \leq P < 130$	2010	5.0	0.19	3.3	0.025
$56 \leq P < 75$	2010	5.0	0.19	3.3	0.025
$37 \leq P < 56$	2011	5.0	4.7		0.025

Table 5. [6. – delete] Limit values [(stage IV) – delete] for diesel engines for non-road mobile machines, agricultural and forestry tractors

Net power (P) (kW)	Application date	Carbon monoxide (g/kWh)	Hydrocarbons (g/kWh)	Nitrogen oxides (g/kWh)	Particulate matter (g/kWh)
$130 \leq P \leq 560$	2012	3.5	0.19	0.4	0.025
$56 \leq P < 130$	2013	5.0	0.19	0.4	0.025

[Note: Exhaust emissions from non-road machinery may not exceed the particle count of 1×10^{12} 1/kWh for solid particles with a diameter greater than 23 nm, calculated on the basis of the current recognized status of technology, namely the UNECE particle measurement programme, and in accordance with the NRSC and NRTC test cycles specified in Directive 97/68/EC.]

[Table 7. Limit values (stage I) for spark-ignition engines for non-road mobile machines

Hand-held engines			
Displacement (cm ³)	Carbon monoxide (g/kWh)	Hydrocarbons (g/kWh)	Nitrogen oxides (g/kWh)
Disp < 20	805	295	5.36
$20 \leq \text{disp.} < 50$	805	241	5.36
Disp ≥ 50	603	161	5.36
Non-hand-held engines			
Displacement (cm ³)	Carbon monoxide (g/kWh)	Sum of hydrocarbons and oxides of nitrogen (g/kWh)	
Disp < 66	519	50	
$66 \leq \text{disp.} < 100$	519	40	
$100 \leq \text{disp.} < 225$	519	16.1	
Disp ≥ 225	519	13.4	

– ~~delete~~]Table 6. [8. – ~~delete~~] Limit values [(stage II) – ~~delete~~] for spark-ignition engines for non-road mobile machines

Hand-held engines		
Displacement (cm ³)	Carbon monoxide (g/kWh)	Sum of hydrocarbons and oxides of nitrogen (g/kWh) ^{a/}
Disp < 20	805	50
20 ≤ disp. < 50	805	50
Disp ≥ 50	603	72
Non-hand-held engines		
Displacement (cm ³)	Carbon monoxide (g/kWh)	Sum of hydrocarbons and oxides of nitrogen (g/kWh)
Disp < 66	[519 – delete] 610	50
66 ≤ disp. < 100	[519 – delete] 610	40
100 ≤ disp. < 225	[519 – delete] 610	16.1
Disp ≥ 225	[519 – delete] 610	[12.4 – delete] 12.1

^{a/} The NO_x emissions for all engine classes must not exceed 10 g/kWh.

[Table 9. Limit values (stage IIIA) for propulsion of locomotives

Net power (P) (kW)	Carbon monoxide (g/kWh)	Sum of hydrocarbons and oxides of nitrogen (g/kWh)		Particulate matter (g/kWh)
RL A: 130 ≤ P ≤ 560	3.5	4.0		0.2
Net power (P) (kW)	Carbon monoxide (g/kWh)	Hydrocarbons (g/kWh)	Nitrogen oxides (g/kWh)	Particulate matter (g/kWh)
RH A: P > 560	3.5	[0.4 – delete] 0.5	6.0	0.2
RH A: Engines with P > 2,000 and disp. > 5 l/cylinder	3.5	0.4	7.4	0.2

– ~~delete~~]

[Table 10. Limit values (stage IIIA) for propulsion of railcars

Net power (P) (kW)	Carbon monoxide (g/kWh)	Sum of hydrocarbons and oxides of nitrogen (g/kWh)	Particulate matter (g/kWh)
RCA: 130 < P	3.5	4.0	0.2

– ~~delete~~]

Table 7. [~~11.~~] Limit values [(stage IIIB) – ~~delete~~] for engines used for propulsion of locomotives

Net power (P) (kW)	Carbon monoxide (g/kWh)	Hydrocarbons (g/kWh)	Nitrogen oxides (g/kWh)	Particulate matter (g/kWh)
[RCA RCB : – delete] 130 < P	3.5	0.19	2.0	0.025

Table 8. [~~12.~~] Limit values [(stage IIIB) – ~~delete~~] for engines used for propulsion of railcars

Net power (P) (kW)	Carbon monoxide (g/kWh)	Sum of hydrocarbons and oxides of nitrogen (g/kWh)	Particulate matter (g/kWh)
[RCA RB : – delete] 130 < P	3.5	4.0	0.025

Table 9. [~~13.~~] Limit values [(stage IIIA) – ~~delete~~] for engines for propulsion of inland waterways vessels

Displacement (liters per cylinder/kW)	Carbon monoxide (g/kWh)	Sum of hydrocarbons and oxides of nitrogen (g/kWh)	Particulate matter (g/kWh)
[V1:1 – delete] Disp. < 0.9 Power ≥ 37 kWth	5.0	7.5	0.4
[V1:2 – delete] 0.9 ≤ disp. < 1.2	5.0	7.2	0.3
[V1:3 – delete] 1.2 ≤ disp. < 2.5	5.0	7.2	0.2
[V1:4 – delete] 2.5 ≤ disp. < 5.0	5.0	7.2	0.2
[V2:1 – delete] 5.0 ≤ disp. < 15	5.0	7.8	0.27
[V2:2 – delete] 15 ≤ disp. < 20 Power < 3300 kWth	5.0	8.7	0.5
[V2:3 – delete] 15 ≤ disp. < 20 Power > 3300 kWth	5.0	9.8	0.5
[V2:4 – delete] 20 ≤ disp. < 25	5.0	9.8	0.5
[V2:5 – delete] 25 ≤ disp. < 30	5.0	11.0	0.5

Table 10. [14. – delete] Limit values [(stage IIIA) – delete] for engines in recreational crafts

Engine type	CO (g/kWh) CO = A + B/P ⁿ _N			[VOC – delete] Hydrocarbons (HC) (g/kWh) [VOC – delete] HC = A + B/P ⁿ _N ^{a/}			NO _x [g/kWh]	PM [g/kWh]
	A	B	n	A	B	n		
2-stroke	150	600	1	30	100	0,75	10	Not Appl.
4-stroke	150	600	1	6	50	0,75	15	Not Appl.
CI	5	0	0	1,5	2	0,5	9,8	1

Note: Not Appl. = Not Applicable.

^{a/} Where A, B and n are constants and [in accordance with table 3.1.1, – delete] P_N is the rate engine power in kW and the emissions are measured in accordance with the harmonised standards.

[Table 15. Limit values (stage I) for motorcycles and 3- and 4-wheelers (> 50 cm³; > 45 km/h)

Engine type	Limit values
2-stroke	CO = 8 g/km HC = 4 g/km NO _x = 0.1 g/km
4-stroke	CO = 13 g/km HC = 3 g/km NO _x = 0.3 g/km

Note: For 3- and 4-wheelers, the limit values have to be multiplied by 1.5. – delete]

[Table 16: Limit values (stage II) for motorcycles (> 50 cm³; > 45 km/h)

Engine type	Limit values
Motorcycle < 150cc	HC = 1.2 g/km NO _x = 0.3 g/km
Motorcycle > 150cc	HC = 1.0 g/km NO _x = 0.3 g/km

– delete]

Table 11. [17.: – delete] Limit values [(stage III) – delete] for motorcycles (> 50 cm³; > 45 km/h)

Engine [type – delete] size	Limit values
Motorcycle < 150cc	HC = 0.8 g/km NO _x = 0.15 g/km
Motorcycle > 150cc	HC = 0.3 g/km NO _x = 0.15 g/km

Table 12. [18. – delete] Limit values for mopeds ($\leq 50 \text{ cm}^3$; $< 45 \text{ km/h}$)

[Stage – delete]	Limit values	
	CO (g/km)	HC + NO _x (g/km)
[I – delete]	[6.0 ^{a/} – delete]	[3.0 ^{a/} – delete]
II	1.0 [b/ – delete] ^{a/}	1.2

^{a/} For 3- and 4-wheelers, multiply by 2. – delete]

^{a/[b/ – delete]} For 3- and 4-wheelers, 3.5 g/km.

Table 13. [19. – delete] Environmental specifications for marketed fuels to be used for vehicles equipped with positive-ignition engines

Type: Petrol

Parameter	Unit	Limits	
		Minimum	Maximum
Research octane number		95	-
Motor octane number		85	-
Reid vapour pressure, summer period ^{a/}	kPa	-	60
Distillation:			
evaporated at 100°C	% v/v	46	-
evaporated at 150°C	% v/v	75	-
Hydrocarbon analysis:			
- olefins	% v/v	-	18.0 ^{b/}
- aromatics		-	35
- benzene		-	1
Oxygen content	% m/m	-	[2.73 – delete] 3.7
Oxygenates:			
- Methanol, stabilizing agents must be added	% v/v	-	3
- Ethanol, stabilizing agents may be necessary	% v/v	-	[5 – delete] 10
- Iso-propyl alcohol	% v/v	-	[10 – delete] 12
- Tert-butyl alcohol	% v/v	-	[7 – delete] 15
- Iso-butyl alcohol	% v/v	-	[10 – delete] 15
- Ethers containing 5 or more carbon atoms per molecule	% v/v	-	[15 – delete] 22
Other oxygenates ^{c/}	% v/v	-	[10 – delete] 15
Sulphur content	mg/kg	-	10

^{a/} The summer period shall begin no later than 1 May and shall not end before 30 September. For [member States – delete] **Parties** with arctic conditions the summer period shall begin no later than 1 June and not end before 31 August and the **Reid Vapour Pressure (RVP)** is limited to 70 kPa.

^{b/} Except for regular unleaded petrol (minimum motor octane number (MON) of 81 and minimum research octane number (RON) of 91), for which the maximum olefin content shall be 21% v/v. These

limits shall not preclude the introduction on the market of a [member State – ~~delete~~] **Party** of another unleaded petrol with lower octane numbers than set out here.

^{c/} Other mono-alcohols with a final distillation point no higher than the final distillation point laid down in national specifications or, where these do not exist, in industrial specifications for motor fuels.

Table 14. [20. – ~~delete~~] *Environmental specifications for marketed fuels to be used for vehicles equipped with compression-ignition engines*

Type: Diesel fuel

Parameter	Unit	Limits	
		Minimum	Maximum
Cetane number		51	-
Density at 15° C	kg/m ³	-	845
Distillation point: 95%	°C	-	360
Polycyclic aromatic hydrocarbons	% m/m	-	[11 – delete] 8
Sulphur content	mg/kg	-	10

B. Canada

[9. New vehicle emission standards for light-duty vehicles, light-duty trucks, heavy-duty vehicles, heavy-duty engines and motorcycles: Motor Vehicle Safety Act (and successor legislation), Schedule V of the Motor Vehicle Safety Regulations: Vehicle Emissions (Standard 1100), SOR/97-376, (28 July, 1997), as amended from time to time.

10. Canadian Environmental Protection Act, Diesel Fuel Regulations, SOR/97-110 (4 February, 1997, sulphur in diesel fuel), as amended from time to time.

11. Canadian Environmental Protection Act, Benzene in Gasoline Regulations, SOR/97-493 (6 November, 1997), as amended from time to time. – ~~delete~~]

12. [Canadian Environmental Protection Act, Sulphur in Gasoline Regulations, Canada Gazette, Part II, June 4, 1999, as amended from time to time. – ~~delete~~] [**Limit values for controlling emissions from fuels and mobile sources will be determined, as appropriate, taking into account information on available control technologies, limit values applied in other jurisdictions, and the documents below. These documents vary in the degree to which they are mandatory, and in some cases the authority for implementation is not at the federal level, but rests with sub-national jurisdictions. The inclusion of a particular document should not be understood to imply that Canada agrees to be bound by it under the Gothenburg Protocol:**

(a) **Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations, SOR/2010-201;**

(b) **Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations, SOR/2011-10;**

(c) **Renewable Fuels Regulations, SOR/2010-189;**

(d) **Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals, SOR/2007-86;**

(e) **Off-Road Compression-Ignition Engine Emission Regulations, SOR/2005-32;**

- (f) On-Road Vehicle and Engine Emission Regulations, SOR/2003-2;
- (g) Off-Road Small Spark-Ignition Engine Emission Regulations, SOR/2003-355;
- (h) Sulphur in Diesel Fuel Regulations, SOR/2002-254;
- (i) Gasoline and Gasoline Blend Dispensing Flow Rate Regulations SOR/2000-43;
- (j) Sulphur in Gasoline Regulations, SOR/99-236;
- (k) Benzene in Gasoline Regulations, SOR/97-493;
- (l) Gasoline Regulations, SOR/90-247;
- (m) Federal Mobile PCB Treatment and Destruction Regulations, SOR/90-5;
- (n) Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products;
- (o) Canada-Wide Standards for Benzene, Phase 2;
- (p) Environmental Guidelines for Controlling Emissions of Volatile Organic Compounds from Aboveground Storage Tanks. PN 1180;
- (q) Environmental Code of Practice for Vapour Recovery in Gasoline Distribution Networks. PN 1057;
- (r) Environmental Code of Practice for Light Duty Motor Vehicle Emission Inspection and Maintenance Programs - 2nd Edition. PN 1293;
- (s) Joint Initial Actions to Reduce Pollutant Emissions that Contribute to Particulate Matter and Ground-level Ozone; and
- (t) Operating and Emission Guidelines for Municipal Solid Waste Incinerators. PN1085.]

C. United States of America

13. Implementation of a mobile source emission control programme for light-duty vehicles, light-duty trucks, heavy-duty trucks and fuels to the extent required by sections 202 (a), 202 (g) and 202 (h) of the Clean Air Act, as implemented through:

- (a) [40 Code of Federal Regulations (C.F.R.) Part 80, Subpart D – Reformulated Gasoline – ~~delete~~] **Registration of fuels and fuel additives — 40 C.F.R Part 79;**
- (b) [40 C.F.R. Part 86, Subpart A – General Provisions for Emission Regulations – ~~delete~~] **Regulation of fuels and fuel additives — 40 C.F.R Part 80, including: Subpart A — general provisions; Subpart B — controls and prohibitions; Subpart D — reformulated gasoline; Subpart H — gasoline sulphur standards; Subpart I — motor vehicle diesel fuel; non-road, locomotive, and marine diesel fuel; and ECA marine fuel; Subpart L — gasoline benzene; and**
- (c) [40 C.F.R. Part 80, section 80.29 – Controls and Prohibitions on Diesel Fuel Quality – ~~delete~~] **Control of emissions from new and in-use highway vehicles and engines — 40 C.F.R Part 85 and Part 86.**

14. Standards for non-road engines and vehicles are specified in the following documents:

- (a) Fuel sulphur standards for non-road diesel engines — 40 C.F.R Part 80, Subpart I;
 - (b) Aircraft engines — 40 C.F.R Part 87;
 - (c) Exhaust emission standards for non-road diesel engines — Tier 2 and 3; 40 C.F.R Part 89;
 - (d) Non-road compression-ignition engines — 40 C.F.R Part 89 and Part 1039;
 - (e) Non-road and marine spark-ignition engines — 40 C.F.R Part 90, Part 91, Part 1045, and Part 1054;
 - (f) Locomotives — 40 C.F.R Part 92 and Part 1033;
 - (g) Marine compression-ignition engines — 40 C.F.R Part 94 and Part 1042;
 - (h) New large non-road spark-ignition engines — 40 C.F.R Part 1048;
 - (i) Recreational engines and vehicles — 40 C.F.R Part 1051;
 - (j) Control of evaporative emissions from new and in-use non-road and stationary equipment — 40 C.F.R. Part 1060;
 - (k) Engine testing procedures — 40 C.F.R Part 1065; and
 - (l) General compliance provisions for non-road programs — 40 C.F.R Part 1068.
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