

Technical Annex prepared by EGTEI

Suggested Technical Annex X to the Gothenburg Protocol

The technical annexes have been delivered to WGS&R 44, as first release, in electronic and printed form, with the purpose of receiving preliminary comments and further guidance from the Parties, in view of the official submission of these annexes, along with the guidance documents, to WGS&R 45, September 2009.

[Tapez un texte]

Annex X

LIMIT VALUES FOR EMISSIONS OF DUST FROM STATIONARY SOURCES

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.

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

2. For the purpose of section A, limit value means the quantity of a gaseous substance contained in the waste gases from an installation that is not to be exceeded. Unless otherwise specified, it shall be calculated in terms of mass of pollutant per volume of the waste gases (expressed as mg/m³), assuming standard conditions for temperature and pressure for dry gas (volume at 273.15 K, 101.3 kPa). With regard to the oxygen content of exhaust gas, the values given in the tables below for each source category shall apply. Dilution for the purpose of lowering concentrations of pollutants in waste gases is not permitted. Limit values generally address NO together with NO₂, commonly named NO_x, expressed as NO₂. Start-up, shutdown and maintenance of equipment are excluded.

3. Sampling and analysis of relevant polluting substances and measurements of process parameters, as well as the quality assurance of automated measuring systems and the reference measurement methods to calibrate those systems shall be carried out in accordance with CEN standards. If CEN standards are not available, ISO standards, national or international standards which will ensure the provision of data of an equivalent scientific quality shall apply.

4. Special provision for combustion plants:

4.1 For combustion plants larger than 50 MW_{th}, the competent authority may grant derogation from the obligation to comply with the emission limit values provided for in paragraph 5 in the following cases:

[a] for combustion plants using only gaseous fuel who have to resort exceptionally to the use of other fuels because of a sudden interruption in the supply of gas and for this reason would need to be equipped with a waste gas purification facility]

[b] for old existing plants that will close down before a certain date]

[c] for emergency and/or peak plants with less than a certain number of operational hours per year]

4.2 Where a combustion plant is extended by at least 50MW, the emission limit value specified in paragraph 5 for new installation shall apply to the extensional part and to the plant affected by the change.

4.3 Parties shall ensure that provisions are made in the permits for procedures relating to malfunction or breakdown of the abatement equipment.

4.4 In the case of a multi-fuel firing combustion plant involving the simultaneous use of two or more fuels, the competent authority shall provide rules for setting the emission limit values

[5. An alternative emission reduction strategy for mineral oil refineries (like the use of the bubble concept) is currently being investigated and could be proposed in the next draft of this TA. The bubble concept, allowing flexibility but at the same time aiming at equivalent reductions, could be restricted to combustion plants above 50 MW (as it is in the current protocol) or could relate to the whole refinery to allow maximum flexibility.]

[Tapez un texte]

6. Boilers and process heaters with a rated thermal input exceeding 50 MWth:

Table 1. Suggested options for limit values for dust emissions released from boilers [and process heater]^{a/}

Fuel type	Thermal input [MWth]	Suggested ELV for dust [mg/Nm ³] ^{b/} [hourly, monthly, daily] ^{2/}		
		Option 1 ^{1/}	Option 2 ^{1/}	Option 3 ^{1/}
Solid fuels	50-100	New plants: [10] (coal, lignite) [10] (biomass, peat)	New plants: [20] (coal, lignite) [20] (biomass, peat)	New plants: [50] (coal, lignite) [50] (biomass, peat)
		Existing plants: [15] (coal, lignite) [15] (biomass, peat)	Existing plants: [30] (coal, lignite) [30] (biomass, peat)	Existing plants: [50] (coal, lignite) [50] (biomass, peat)
	100-300	New plants: [10] (coal, lignite) [10] (biomass, peat)	New plants: [20] (coal, lignite) [20] (biomass, peat)	New plants: [30] (coal, lignite) [30] (biomass, peat)
		Existing plants: [15] (coal, lignite) [10] (biomass, peat)	Existing plants: [30] (coal, lignite) 20 (biomass, peat)	Existing plants: [50] (coal, lignite) [50] (biomass, peat)
	>300	New plants: [10] (coal, lignite) [10] (biomass, peat)	New plants: [20] (coal, lignite) [20] (biomass, peat)	New plants: [30] (coal, lignite) [30] (biomass, peat)
		Existing plants: [10] (coal, lignite) [10] (biomass, peat)	Existing plants: [20] (coal, lignite) [20] (biomass, peat)	Existing plants: [50] (coal, lignite) [50] (biomass, peat)
Liquid fuels	50-100	New plants: [10]	New plants: [20]	New plants: [50]
		Existing plants: [15]	Existing plants: [30]	Existing plants: [50]
	100-300	New plants: [10]	New plants: [20]	New plants: [30]
		Existing plants: [15]	Existing plants: [25]	Existing plants: [50]
	>300	New plants: [5]	New plants: [10]	New plants: [30]
		Existing plants: [10]	Existing plants: [20]	Existing plants: [50]
Natural gas	>50	[5]	[5]	[5]
Combustion plants in refineries	>50	[10]	[20]	[50]

^{a/} In particular, the limit values shall not apply to:

- Plant where the combustion process is an integrated part of a specific production, for example the coke oven used in the Iron and Steel industry and glass and ceramics production plants;
- Plant in which the products of combustion are used for direct heating, drying, or any other treatment of objects or materials, e.g. reheating furnaces, furnaces for heat treatment;
- Post-combustion plant, i.e. any technical apparatus designed to purify the waste gases by combustion that is not operated as an independent combustion plant;
- Facilities for the regeneration of catalytic cracking catalysts;

[Tapez un texte]

- Facilities for the conversion of hydrogen sulphide into sulphur;
- Reactors used in the chemical industry;
- Coke battery furnaces;
- Cowpers;
- Waste incinerators; and
- Plant powered by diesel, petrol or gas engines or by combustion turbines, irrespective of the fuel used.

b/ These values do not apply to boilers running less than 500 hours a year.

7. Mineral oil and gas refineries

Table 2. Suggested options for limit values for dust emissions released from mineral oil and gas refineries

Emission source	Suggested ELV for dust [mg/Nm ³] [hourly, monthly, daily] ^{2/}		
	Option 1 ^{1/}	Option 2 ^{1/}	Option 3 ^{1/}
FCC regenerators	[20]	[30]	[300]

8. Cement production:

Table 3. Suggested options for limit values for dust emissions released from cement production^{a/}

	Suggested ELV for dust [mg/Nm ³] [hourly, monthly, daily] ^{2/}		
	Option 1 ^{1/}	Option 2 ^{1/}	Option 3 ^{1/}
Cement installations	[15]	[20]	[50]

a/ Installations for the production of cement clinker in rotary kilns with a capacity >500 Mg/day or in other furnaces with a capacity >50 Mg/day. .

9. Lime production:

Table 4. Suggested options for limit values for dust emissions released from lime production

	Suggested ELV for dust [mg/Nm ³] [hourly, monthly, daily] ^{2/}		
	Option 1 ^{1/}	Option 2 ^{1/}	Option 3 ^{1/}
Lime production	[15]	[20]	[30]

[Tapez un texte]

10. Production and processing of metals:

Iron and steel production:

Table 5. Suggested options for limit values for dust emissions released from primary iron and steel production

	Suggested ELV for dust [mg/Nm ³] [hourly, monthly, daily] ^{2/}		
	Option 1 ^{1/}	Option 2 ^{1/}	Option 3 ^{1/}
Sinter plant (>150 t/day)	[10]	[20]	[50]
Pelletization plant (>150 t/day)	[5]	[10]	[25]
Blast furnace: Hot stoves (>2.5 t/hour)	[5]	[10]	[50]
Basic oxygen steelmaking and casting (>2.5 t/hour)	[10]	[30]	[50]
Electric steelmaking and casting (>2.5 t/hour)	[10] (existing) [5] (new)	[15] (existing) [5] (new)	[20]

Iron foundries:

Table 6. Suggested options for limit values for dust emissions released from iron foundries

	Suggested ELV for dust [mg/Nm ³] [hourly, monthly, daily] ^{2/}		
	Option 1 ^{1/}	Option 2 ^{1/}	Option 3 ^{1/}
Iron foundries (>20 t/day): - all furnaces (cupola, induction, rotary) - all mouldings (lost, permanent)	[10]	[20]	[50]
Hot and cold rolling	[10]	[20]	[30]

Production and processing of non ferrous metals:

Table 7. Suggested options for limit values for dust emissions released from non ferrous metals production and processing

	Suggested ELV for dust [mg/Nm ³] [hourly, monthly, daily] ^{1/}		
	Option 1 ^{1/}	Option 2 ^{1/}	Option 3 ^{1/}
non ferrous metal processing	[3]	[5]	[20]

¹ Proposed ELVs for options 1 and 2 are based on BAT AEL which are defined for a certain averaging period (mainly hourly, daily or monthly). The same averaging period could be also used for setting ELVs. In addition, the averaging period could be also related to the ambition level of the ELVs (options 1 to 3). In general, the lower the averaging period is, the stricter the associated ELV is. More information in the next draft of TA.

[Tapez un texte]

11. Glass production:

Table 8. Suggested options for limit values for dust emissions released from glass production

	Suggested ELV for dust [mg/Nm ³] [hourly, monthly, daily] ^{2/}		
	Option 1 ^{1/}	Option 2 ^{1/}	Option 3 ^{1/}
New installations	[10]	[30]	[50]
Existing installations	[15]	[30]	[50]

12. Pulp production:

Table 9. Suggested options for limit values for dust emissions released from pulp production

	Suggested ELV for dust [mg/Nm ³] [hourly, monthly, daily] ^{2/}		
	Option 1 ^{1/}	Option 2 ^{1/}	Option 3 ^{1/}
Auxiliary boiler	[25]	[40]	[40]
Recovery boiler and lime kiln	[40]	[50]	[80]

13. Waste incineration:

Table 10. Suggested options for limit values for dust emissions released from waste incineration

	Suggested ELV for dust [mg/Nm ³] [hourly, monthly, daily] ^{2/}		
	Option 1 ^{1/}	Option 2 ^{1/}	Option 3 ^{1/}
Municipal waste incineration plants (> 3 tonnes/hour)	[3]	[5]	[10]
Hazardous and medical waste incineration (> 1 tonne/hour)	[3]	[5]	[10]

14. Titanium dioxide production:

Table 11. Suggested options for limit values for dust emissions released from titanium dioxide production

	Suggested ELV for dust [hourly, monthly, daily] ^{2/}		
	Option 1 ^{1/}	Option 2 ^{1/}	Option 3 ^{1/}
Sulphate process, emission main sources [mg/Nm ³]	[12]	[20]	[50]
Chloride process, emission main sources [kg/t of TiO ₂]	[0.15]	[0.2]	[50] [mg/Nm ³]

[Tapez un texte]

B. Canada^{3/}

C. United States of America^{3/}

Note

1/The definitions of option 1, option 2 and option 3 are available in Informal document prepared by EGTEI for the 44th WGSR meeting. These options were designed to leave maximum flexibility for discussion at the WGSR

2/ Proposed ELVs are based on BAT-AEL or current ELVs which usually are defined for a certain averaging period (mainly hourly, daily or monthly). The same averaging period could be also used for setting ELVs. See reference documents for more information. More specifics will be presented in the next drafts of the TA. Averaging periods normally relate to continuous measurements and can be made dependent to the height (ambition level) of the ELVs that will be finally selected. Higher (less strict) ELVs could be associated with shorter averaging periods and vice versa.

3/ Up to now, no information has been provided by North America, then part B and C of the annex have not been written yet.