



**Directive (EU) 2015/2193
of the European Parliament and of the Council of 25
November 2015
on the limitation of emissions of
certain pollutants into the air
from medium combustion plants
(MCP Directive)**

**European Commission
DG Environment**



Regulatory landscape on combustion sources

- Directive 2010/75/EU on industrial emissions (IED)
 - *"large" combustion plants, i.e. ≥ 50 MWth (input) (successor of LCP Directive 2001/80 and IPPC Directive 96/61)*
- Ecodesign Directive (and implementing acts)
 - *Internal market based → product standards for energy efficiency and emissions*
 - *Current scope for combustion appliances: < 500 kW (output)*
- **New legislation** – MCP Directive - **1 to 50 MWth**
 - *Implements provisions of the amended Gothenburg Protocol and beyond*



Approaches of MCP Directive

- *Problem definition*
 - Contribution to overall EU air policy objectives
 - Filling regulatory gap
 - Different approaches across MS require EU action, considering national circumstances
 - Cover all sources categories in 1 to 50 MWth, all fuel types, all relevant pollutants, (overall some 150,000 individual sources)
- *Options assessed*
 - emission limit values: dust, NOx, SO2
 - regulatory approaches
 - **registration - permitting, monitoring, reporting, ...**

MCP Directive as part of the Clean Air Policy Package 2013

| 2025 | SO ₂ , kt | NO _x , kt | PM, kt | Cost, M€ |
|---------------------------------|-----------------------------|-----------------------------|---------------------------|----------------------------|
| Clean Air Policy Package | -681 | -452 | -396 | 3334 |
| MCPD proposal | -135 (20%) | -107 (24%) | -23 (6%) | 382 (11%) |



Key Elements of the MCP Directive

Subject matter and scope

- **Control emissions of SO₂, NO_x and dust from medium combustion plants and engines and turbines (1 – 50 MWth)**
- **Plants not covered (examples)**
 - Plants covered by IED Chapter III (LCP) or IV (waste incineration)
 - Plants in which flue gases are used for direct heating/drying/ treatment of objects or materials (e.g. kilns, ovens)
 - Post-combustion plants
 - Apparatus used for propulsion of vehicles, ships or aircraft
 - Gas turbines and engines used on offshore platforms
 - Reactors used in the chemical industry
 - Coke battery furnaces and cowpers
 - Crematoria
 - Combustion plants firing refinery fuels alone or with other fuels for the production of energy within mineral oil and gas refineries
 - (...)



Definitions and aggregation rule

- **'existing combustion plant'**

a combustion plant put into operation before 20 December 2018

- **aggregation rule**

combinations of **new** MCPs which **are or could be** emitting through common stack shall be considered to be a single plant



Permits and registration

- **Flexibility for MSs** to permit and register **or** only register
- **New MCP**: to be permitted or registered **before operation**
- **Existing MCP**: to be permitted or registered
 - **> 5 MW: by 1 January 2024**
 - **≤ 5 MW: by 1 January 2029**
- Authorities in Member States shall hold a **register** with information on each MCP (publicly available)



Emission limit values – general (Art. 6 – Annex II)

- **Differentiation according to:**
 - **technology:** boilers, engines, turbines, other
 - **fuel:** biomass, other solid, gas oil, other liquid, natural gas, other gases
 - **rated thermal input:** 1-5-(20)-50 MW
 - **new and existing plants**

- **Implementation deadlines**

| | |
|-----------------------|-------------------|
| new plants | 20.12.2018 |
| existing plants >5 MW | 01.01.2025 |
| existing plants ≤5 MW | 01.01.2030 |



Emission limit values – exemptions

- **MCP located in Canary Islands, French Overseas Depts., Azores, Madeira → MS to decide on ELVs**
- MS may exempt **MCP operating ≤ 500 h/yr**
(≤ 1000 h/yr for some special types of existing plants)
 - safeguard ELV for dust (solid fuels): 100 (new) / 200 (exist) mg/Nm³
- **Several temporary derogations (01.01.2030 for existing)**
 - Isolated Systems (SIS/MIS) (not connected with mainland)
 - district heating
 - solid biomass plants in compliant AQ zones (dust derogation)
 - MCP driving gas compressor stations (NO_x derogation)In some cases: safeguard ELVs are set

ELVs (mg/Nm³) – examples for existing plants

- **1-5 MW (not engines/turbines)**
 - **SO₂**: 200 (biomass), 300 (straw), 350 (liquid), 1100 (solid)
 - **NO_x**: 200 (gas oil), 250 (gas), 650 (other liquid, solid, biomass)
 - **dust**: 50
- **5-50 MW (not engines/turbines)**
 - **SO₂**: 200 (biomass), 300 (straw), 350 (liquid), 400 (solid)
 - **NO_x**: 200 (gas oil, nat gas), 650 (other liquid, solid, biomass)
 - **dust**: 30 (>20 MW), 50 (5-20 MW)
- **engines/turbines**
 - **SO₂**: 120 (liquid)
 - **NO_x**: 190-250 (engines), 150-200 (gas turbines)
 - **dust**: 10 (>20 MW), 20 (1-20 MW)

ELVs (mg/Nm³) – examples for **new** plants

- **other than engines/turbines**
 - **SO₂**: 200 (biomass), 350 (liquid), 400 (solid)
 - **NO_x**: 100 (nat gas), 200 (gas oil), 300 (solid >5 MW, other liquid), 500 (solid 1-5 MW)
 - **dust**: 20 (>5 MW), 30 (biomass 5-20 MW), 50 (1-5 MW)
- **engines/turbines**
 - **SO₂**: 120 (liquid)
 - **NO_x**: 95-225 (engines), 50-75 (gas turbines)
 - **dust**: 10 (>5 MW), 20 (1-5 MW)



Emission monitoring (Art. 7 , Annex III)

- **Periodic measurements (by operator) of SO₂, NO_x, dust, CO**
 - 1 - 20 MW: every 3 yrs
 - > 20 MW: annually
 - reduced frequency if ≤ 500 (1000) h/yr (but at least every 5 yrs)
- **Plants applying secondary abatement equipment: continuous monitoring of its effective operation**
- **Alternatives allowed for SO₂ monitoring (e.g. based on S content of fuel), if approved (by authorities)**
- **Continuous measurements may be required – measuring systems need to be checked regularly**



Thank you

More Information:

http://ec.europa.eu/environment/air/clean_air_policy.htm

<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015L2193&from=EN>

(Dedicated MCP web page soon to come ...)



Table 1

Emission Limit Values – new MCP

Emission limit values (mg/Nm³) for new medium combustion plants other than engines and gas turbines

| Pollutant | Solid biomass | Other solid fuels | Gas oil | Liquid fuels other than gas oil | Natural gas | Gaseous fuels other than natural gas |
|-----------------|--------------------|--------------------|---------|---------------------------------|-------------|--------------------------------------|
| SO ₂ | 200 ⁽¹⁾ | 400 | — | 350 ⁽²⁾ | — | 35 ⁽³⁾ ⁽⁴⁾ |
| NO _x | 300 ⁽⁵⁾ | 300 ⁽⁵⁾ | 200 | 300 ⁽⁶⁾ | 100 | 200 |
| Dust | 20 ⁽⁷⁾ | 20 ⁽⁷⁾ | — | 20 ⁽⁸⁾ | — | — |

⁽¹⁾ The value does not apply in the case of plants firing exclusively woody solid biomass.

⁽²⁾ Until 1 January 2025, 1 700 mg/Nm³ in the case of plants which are part of SIS or MIS.

⁽³⁾ 400 mg/Nm³ in the case of low calorific gases from coke ovens, and 200 mg/Nm³ in the case of low calorific gases from blast furnaces, in the iron and steel industry.

⁽⁴⁾ 100 mg/Nm³ in the case of biogas.

⁽⁵⁾ 500 mg/Nm³ in the case of plants with a total rated thermal input equal to or greater than 1 MW and less than or equal to 5 MW.

⁽⁶⁾ Until 1 January 2025, 450 mg/Nm³ when firing heavy fuel oil containing between 0,2 % and 0,3 % N and 360 mg/Nm³ when firing heavy fuel oil containing less than 0,2 % N in the case of plants which are part of SIS or MIS.

⁽⁷⁾ 50 mg/Nm³ in the case of plants with a total rated thermal input equal to or greater than 1 MW and less than or equal to 5 MW; 30 mg/Nm³ in the case of plants with a total rated thermal input greater than 5 MW and less than or equal to 20 MW.

⁽⁸⁾ 50 mg/Nm³ in the case of plants with a total rated thermal input equal to or greater than 1 MW and less than or equal to 5 MW.

Emission Limit Values – existing MCP

Table 1

Emission limit values (mg/Nm³) for existing medium combustion plants with a rated thermal input equal to or greater than 1 MW and less than or equal to 5 MW, other than engines and gas turbines

| Pollutant | Solid biomass | Other solid fuels | Gas oil | Liquid fuels other than gas oil | Natural gas | Gaseous fuels other than natural gas |
|-----------------|-----------------------------------|-------------------|---------|---------------------------------|-------------|--------------------------------------|
| SO ₂ | 200 ⁽¹⁾ ⁽²⁾ | 1 100 | — | 350 | — | 200 ⁽³⁾ |
| NO _x | 650 | 650 | 200 | 650 | 250 | 250 |
| Dust | 50 | 50 | — | 50 | — | — |

⁽¹⁾ The value does not apply in the case of plants firing exclusively woody solid biomass.

⁽²⁾ 300 mg/Nm³ in the case of plants firing straw.

⁽³⁾ 400 mg/Nm³ in the case of low calorific gases from coke ovens in the iron and steel industry.

Table 2

Emission Limit Values – existing MCP

Emission limit values (mg/Nm³) for existing medium combustion plants with a rated thermal input greater than 5 MW, other than engines and gas turbines

| Pollutant | Solid biomass | Other solid fuels | Gas oil | Liquid fuels other than gas oil | Natural gas | Gaseous fuels other than natural gas |
|-----------------|-----------------------------------|--------------------|---------|---------------------------------|-------------|--------------------------------------|
| SO ₂ | 200 ⁽¹⁾ ⁽²⁾ | 400 ⁽³⁾ | — | 350 ⁽⁴⁾ | — | 35 ⁽⁵⁾ ⁽⁶⁾ |
| NO _x | 650 | 650 | 200 | 650 | 200 | 250 |
| Dust | 30 ⁽⁷⁾ | 30 ⁽⁷⁾ | — | 30 | — | — |

⁽¹⁾ The value does not apply in the case of plants firing exclusively woody solid biomass.

⁽²⁾ 300 mg/Nm³ in the case of plants firing straw.

⁽³⁾ 1 100 mg/Nm³ in the case of plants with a rated thermal input greater than 5 MW and less than or equal to 20 MW.

⁽⁴⁾ Until 1 January 2030, 850 mg/Nm³ in the case of plants with a rated thermal input greater than 5 MW and less than or equal to 20 MW firing heavy fuel oil.

⁽⁵⁾ 400 mg/Nm³ in the case of low calorific gases from coke ovens, and 200 mg/Nm³ in the case of low calorific gases from blast furnaces, in the iron and steel industry.

⁽⁶⁾ 170 mg/Nm³ in the case of biogas.

⁽⁷⁾ 50 mg/Nm³ in the case of plants with a rated thermal input greater than 5 MW and less than or equal to 20 MW.

Emission Limit Values – existing MCP (3)

Table 3
Emission limit values (mg/Nm³) for existing engines and gas turbines

| Pollutant | Type of medium combustion plant | Gas oil | Liquid fuels other than gas oil | Natural gas | Gaseous fuels other than natural gas |
|-----------------|---------------------------------|-----------------------------------|-----------------------------------|--------------------|--------------------------------------|
| SO ₂ | Engines and gas turbines | — | 120 | — | 15 ⁽¹⁾ ⁽²⁾ |
| NO _x | Engines | 190 ⁽³⁾ ⁽⁴⁾ | 190 ⁽³⁾ ⁽⁵⁾ | 190 ⁽⁶⁾ | 190 ⁽⁶⁾ |
| | Gas turbines ⁽⁷⁾ | 200 | 200 | 150 | 200 |
| Dust | Engines and gas turbines | — | 10 ⁽⁸⁾ | — | — |

⁽¹⁾ 60 mg/Nm³ in the case of biogas.

⁽²⁾ 130 mg/Nm³ in the case of low calorific gases from coke ovens, and 65 mg/Nm³ in the case of low calorific gases from blast furnaces, in the iron and steel industry.

⁽³⁾ 1 850 mg/Nm³ in the following cases:

(i) for diesel engines the construction of which commenced before 18 May 2006;

(ii) for dual fuel engines in liquid mode.

⁽⁴⁾ 250 mg/Nm³ in the case of engines with a rated thermal input equal to or greater than 1 MW and less than or equal to 5 MW.

⁽⁵⁾ 250 mg/Nm³ in the case of engines with a rated thermal input equal to or greater than 1 MW and less than or equal to 5 MW; 225 mg/Nm³ in the case of engines with a rated thermal input greater than 5 MW and less than or equal to 20 MW.

⁽⁶⁾ 380 mg/Nm³ for dual fuel engines in gas mode.

⁽⁷⁾ Emission limit values are only applicable above 70 % load.

⁽⁸⁾ 20 mg/Nm³ in the case of plants with a rated thermal input equal to or greater than 1 MW and less than or equal to 20 MW.



Table 2

Emission Limit Values – new MCP

Emission limit values (mg/Nm³) for new engines and gas turbines

| Pollutant | Type of medium combustion plant | Gas oil | Liquid fuels other than gas oil | Natural gas | Gaseous fuels other than natural gas |
|-----------------|---------------------------------------|--------------------|------------------------------------|-------------------|--------------------------------------|
| SO ₂ | Engines and gas turbines | — | 120 ⁽¹⁾ | — | 15 ⁽²⁾ |
| NO _x | Engines ⁽³⁾ ⁽⁴⁾ | 190 ⁽⁵⁾ | 190 ⁽⁵⁾ ⁽⁶⁾ | 95 ⁽⁷⁾ | 190 |
| | Gas turbines ⁽⁸⁾ | 75 | 75 ⁽⁹⁾ | 50 | 75 |
| Dust | Engines and gas turbines | — | 10 ⁽¹⁰⁾ ⁽¹¹⁾ | — | — |

⁽¹⁾ Until 1 January 2025, 590 mg/Nm³ for diesel engines which are part of SIS or MIS.

⁽²⁾ 40 mg/Nm³ in the case of biogas.

⁽³⁾ Engines running between 500 and 1 500 hours per year may be exempted from compliance with those emission limit values if they are applying primary measures to limit NO_x emissions and meet the emission limit values set out in footnote (4).

⁽⁴⁾ Until 1 January 2025 in SIS and MIS, 1 850 mg/Nm³ for dual fuel engines in liquid mode and 380 mg/Nm³ in gas mode; 1 300 mg/Nm³ for diesel engines with ≤ 1 200 rpm with a total rated thermal input less than or equal to 20 MW and 1 850 mg/Nm³ for diesel engines with a total rated thermal input greater than 20 MW; 750 mg/Nm³ for diesel engines with > 1 200 rpm.

⁽⁵⁾ 225 mg/Nm³ for dual fuel engines in liquid mode.

⁽⁶⁾ 225 mg/Nm³ for diesel engines with a total rated thermal input less than or equal to 20 MW with ≤ 1 200 rpm.

⁽⁷⁾ 190 mg/Nm³ for dual fuel engines in gas mode.

⁽⁸⁾ These emission limit values are only applicable above 70 % load.

⁽⁹⁾ Until 1 January 2025, 550 mg/Nm³ for plants which are part of SIS or MIS.

⁽¹⁰⁾ Until 1 January 2025, 75 mg/Nm³ for diesel engines which are part of SIS or MIS.

⁽¹¹⁾ 20 mg/Nm³ in the case of plants with a total rated thermal input equal to or greater than 1 MW and less than or equal to 5 MW.