

EU Medium Combustion Plant Directive

Implications for Data Centres



Will it affect my business?

The short answer to this is 'Yes'. The Medium Combustion Pollutants Directive will have a direct impact on data centre design and operation, primarily in relation to standby or primary generator sets.

Due to the typical capacities utilised in the industry, many data centre generators will be required to meet the Directive's local implementation requirements.

As a minimum, the Directive will require plant emissions to be monitored on a regular basis by the data centre operator. Where existing equipment is not meeting emission limits, the equipment will need to be abated/modified.

This implementation will likely affect permitting, procurement and maintenance procedures for new and existing data centres.



**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)**

What is driving the Directive?

Air pollution levels are still problematic in many parts of Europe, and citizens of the Union continue to be exposed to air-polluting substances, potentially compromising their health and wellbeing. Power generation has been identified as significantly contributing to the increasing issue. The directives aim is to reduce sulphur dioxides (SO₂), nitrogen oxides (NO_x) and dust, as agreed under the Gothenburg Protocol.

Scientific assessments show that the average 'lifetime loss for citizens of the Union due to air pollution is eight months.'

What is the Directive and what are the implications?

The Directive regulates the fuel emissions in plant machinery with a rated thermal input equal to or greater than 1 MW and less than 50 MW. The Directive also covers the issue of possible future regulation for monitoring emissions of carbon monoxide (CO). The Emission Limit Values (ELV) apply from 20 December 2018 for 'new plant', and from 1 January 2025 for bigger existing plants (5–50 MWth) and from 1 January 2030 for smaller existing plants (1–5 MWth). 'Existing plant' means a combustion plant put into operation before 20 December 2018 or for which a permit was granted before 19 December 2017, provided the plant is put into operation no later than 20 December 2018. The MCP from a data centre power perspective means for example generator sets standby and primary use.

Will there be any exemptions?

Existing plant may be exempt where the plant doesn't operate for more than 500 operating hours per year, as a rolling average over a period of five years. Firing solid fuels emission limit value for particulate of 200 mg/Nm³.

When will the Directive come into force?

The Medium Combustion Plant (MCP) Directive came into force on 18 December 2015 and will need to be transposed **into domestic law by each Member State by 19 December 2017.**

What about future developments?

The European Commission will review the need to revise Emission Limit Values for new plants to regulate CO emissions, by 1 January 2023. Following that, the MCP Directive will be reviewed every ten years with a focus on new plant provisions.

Key dates:

MCP Directive comes into force: 18 December 2015 and transposed by December 2017. New controls will then apply to all new plant from December 2018. Existing plant have until 2025 or 2030 to comply with Emission Limit Values depending on capacity.

In conclusion

The Medium Combustion Plant Directive intends to improve air quality and reduce the pollution impacting health by controlling air emissions to much of the generating plant located in urban areas. MCP Directive defines Emission Limit Values [ELV] for key pollutants, and periodic monitoring requirements. The method for assessing compliance are not clearly defined. This will challenge those aggregating MCPs with different types of combustion units, that are exhausting through a common stack and also for units fitted with pollution abatement equipment since the operator is required to demonstrate that the abatement is continually effective.

Monitoring still requires national guidance on which equipment, methods and quality assurance systems will be needed in order to demonstrate compliance. For dust measurement, the CEN standard defines sampling equipment for Large Combustion Plant that is not suitable for Medium Combustion Plant

More information:

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

<http://eurex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:32015L2193&from=EN>

EUDCA full version available from:

EUDCA
40 Square de Meeûs
1000 Brussels
Belgium

<http://www.eudca.org>

IT is Mega

It may help to define what these power terms mean:

1 **MW** (1,000kW) = energy transfer power. For Data Centres electrical power is relevant, which equates to electrical output of the power plant in **MWe**. The 'e' denotes electrical power (transfer). We often use MW as a short hand for MWe.

1 **MWth** is a megawatt of thermal power produced by the generating plant (thermal megawatt) = MWth.

The electric output of a power plant is equal to the thermal overall power multiplied by the efficiency of the plant . So plant efficiency has an impact to the MCP metric of measurement for of plant sizing which is in MWth.

For Data Centres a typical rule of thumb is 1MW of Data Centre IT load can have a standby generator thermal capacity of say 4 to 6 MWth.

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The Terms of the Directive

MCP Emission Monitoring (article 7, Annex 111)

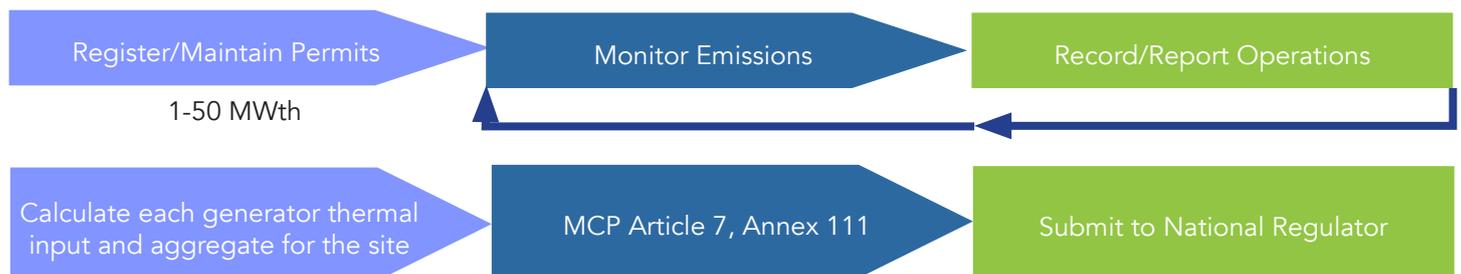
Periodic monitoring of ELV pollutants are a requirement (by the operator) of SO₂, NO_x, dust and CO. Monitoring is always required for carbon monoxide (CO) even though this is not subject to an Emission Limit Value.

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

Initial monitoring is required within four months of plant being permitted/registered for existing plants, or prior to starting operation for new plants. Test methods: 'Sampling and analysis': EN standards are presumed to satisfy requirement. Plant shall operate under stable conditions and representative load, start-up and shut-down periods can be excluded'. No requirement to use ISO 17025 accredited test laboratories or CEN standards (Standard Reference Methods for NO_x, SO₂, CO and dust are defined CEN standards). However, should ISO 17025 be satisfied then the MCP Directive monitoring requirements are met.

The MCP Directive does allow competent authorities to specify continuous monitoring, as alternative to periodic monitoring. This would normally require calibration according to EN 14181. Operators with abatement equipment are expected to define how they will demonstrate equipment continues to operate effectively.

Operator's actions



Operators may need guidance on the following:

- Seek advise on specific ELV's and monitoring requirements for each plant required for permitting.
- Review existing and planned MCP, and seek advise on the ability to comply with the MCP requirements; especially if the plant will not be operational before December 2018, and for recently commissioned plant to ensure future compliance (in 2025 or 2030) is achievable.

Retention of Data

The Directive places a number of obligations on operators with respect to the retention of data. Operators will be required to maintain proof of registration from, or the permit granted by, the competent authority; emissions monitoring results; a record of operating hours and of the fuels used; and any malfunctions or breakdown of secondary abatement equipment for at least ten years