

### What does it mean for you?

#### INTRODUCTION TO THE MCPD

In 2015 the UK government announced plans to introduce the Medium Combustion Plant Directive (MCPD) as a way of improving air quality by controlling emissions from plant equipment of a certain size.

To understand a bit more about the MCPD and what it means for you, we have explained the directive in more detail here, and are happy to provide further information if you have any questions.

#### IMPROVING AIR QUALITY



#### WHAT IS IT AND WHY HAS IT BEEN INTRODUCED?

The MCPD is a new piece of environmental legislation, intended to improve air quality.

It has been introduced by the UK government as a result of EU targets, to monitor equipment between 1MW - 50MW. It fills the largely unregulated gap that exists currently at EU level between smaller

appliances (less than 1 megawatt, covered by the Ecodesign Directive) and large combustion plants (those over 50 megawatt, covered by the Industrial Emissions Directive).

The MCPD will be transposed into UK law by 19th December 2017, with deadlines to comply with detailed to the right >

#### TIMESCALES:

##### > New Energy Plant

19th December 2017 - The MCPD will pass into UK law.

20th December 2018 - Must be registered and comply with ELV's.

##### > Existing Plant (above 5MW)

January 2024 - Must be registered/obtain a permit to operate.

1st January 2025 - Must comply with the proposed ELV's.

##### > Existing Plant (between 1MW & 5MW)

1st January 2029 - Must be registered/obtain a permit to operate.

2030 - Comply with the proposed ELV's and full implementation of the MCPD will be achieved.

#### WILL THE MCPD EFFECT YOUR PLANT?

The directive will regulate each piece of new or existing Medium-sized equipment which oxidises a fuel source to generate heat - i.e. carries out the process of combustion.

'Medium-sized' equipment is typically found in an energy network that supplies large buildings such as offices, hotels, hospitals, prisons and industrial processes, including

power generation. The thermal input guidelines of 1MW to 50MW refer to each piece of equipment independently (not the energy centre's combined thermal input).

As an example, if your energy centre contains 2 x 500kW boilers and a 1MW CHP engine, only the CHP engine will be regulated under the MCPD.

#### WHAT EMISSIONS WILL BE REGULATED?

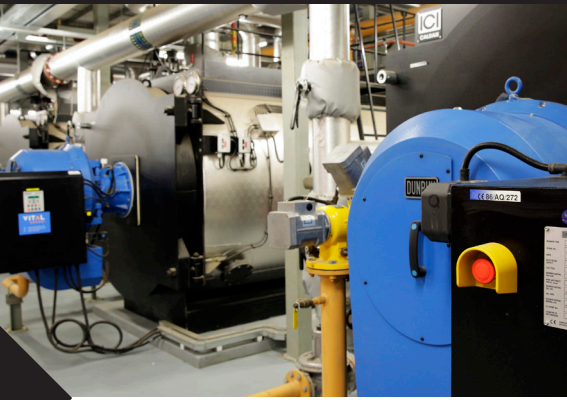
The directive will regulate the concentration levels of Sulphur Dioxide (SO<sub>2</sub>), oxides of Nitrogen (NO<sub>x</sub>), and dust within the exhaust gases. It also lays down rules to monitor emissions of Carbon Monoxide (CO).

There will also be limits on the levels of pollutants that these plants can emit depending on their type, size, age, fuel type and annual operating

hours. [Turn to page 3 for the detailed emission limit values and how they impact on existing legislation]

The UK-wide implementation of these restrictions will provide an estimated 24% of the SO<sub>2</sub> and 9% of the NO<sub>x</sub> emissions reductions we need to meet the UK's 2030 national emission ceilings.

▶ APPLICABLE TO PLANT  
SIZED BETWEEN 1MW & 50MW



## ▶ HOW WILL THE RESTRICTIONS BE MONITORED?

Under the MCPD, combustion plant emissions have to be formally measured and submitted to the relevant body at defined intervals. Combustion plants with a combined thermal input totalling between 1MW and 20MW will be inspected every 3 years to ensure compliance with the ELV's, while installations over 20MW will be tested annually.

Continuous emission monitoring

can be utilised but is generally only applied to large combustion plant equipment as it is expensive to install and will require regular calibration and maintenance.

It is important to note that failure to meet these proposed deadlines or processes could result in a penalty for non-compliance. For further information on this, please see 'How we can help' >

## ▶ HOW WILL THE DIRECTIVE BE IMPLEMENTED ACROSS THE UK?

The directive will be implemented across the UK via amendments to the existing permitting laws; Environmental Permitting Regulations (England and Wales); Pollution Prevention and Control Regulations (Scotland), and Pollution Prevention Control (Industrial Emissions) Regulations (Northern Ireland).

Throughout the development of these proposals, the UK Government administrations have engaged with industry and regulators through a series of technical workshops across the UK to seek views on possible regulatory approaches.

In England and Wales the proposal is to jointly amend the Environmental Permitting Regulations to transpose

the MCPD and at the same time to introduce controls on generators with high NOX emissions. Northern Ireland will lay separate transposition legislation, and in Scotland the intention is to transpose the MCPD as part of the Integrated Authorisation Framework.

There is some debate about the difficulties of a 3 year (as opposed to annual) testing regime so this may yet change.

Whilst many of the requirements in the Directive are set, it has yet to be decided how to transpose the MCPD into domestic legislation. Accordingly, these are the focus of ongoing consultation.

## HOW WE CAN HELP

For existing clients, where the directive will impact combustion plant equipment that is already in operation, our Asset Management team will make contact and clarify the requirements of the MCPD and communicate what, if any, changes or adjustments will be required.

For new clients, technologies are available today that provide emissions well below the MCPD requirements. Our 65-strong team of designers have been designing energy centres that are compliant with the MCPD since the draft directive was issued in November 2015 and our proposals are always designed to be well within its limits.

If you require our help or have any questions, please email:

[sales@vitalenergi.co.uk](mailto:sales@vitalenergi.co.uk)

## EMISSION LIMIT VALUES (ELVS)

The ELV's will depend on the type of equipment, when it was put into service and the fuel used. We have outlined variations of these limits below.

**\*NB - Where limits already exist in a Local Authority that are more stringent than those laid out below, the more stringent requirement will apply.**

### For EXISTING engines and gas turbines:

Pollutant	Type of medium combustion plant	Type of fuel			
		Gas oil	Liquid fuels other than gas oil	Natural gas	Gaseous fuels other than natural gas
SO <sub>2</sub>	Engines and gas turbines	–	120	–	15(1)(2)
NO <sub>X</sub>	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/Nm<sup>3</sup> in the case of biogas.

(2) 130 mg/Nm<sup>3</sup> in the case of low calorific gases from coke ovens, and 65 mg/Nm<sup>3</sup> in the case of low calorific gases from blast furnaces, in the iron and steel industry.

(3) 1850 mg/Nm<sup>3</sup> 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/Nm<sup>3</sup> 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/Nm<sup>3</sup> 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/Nm<sup>3</sup> 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/Nm<sup>3</sup> for dual fuel engines in gas mode.

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

(8) 20 mg/Nm<sup>3</sup> 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.

### For EXISTING plant other than engines and gas turbines:

Pollutant	Type of fuel		Liquid fuels other than gas oil	Gas oil	Natural gas	Gaseous fuels other than natural gas
	Solid biomass	Other solid fuels				
SO <sub>2</sub>	200(1)	1100(2)	350(5)	–	–	35(3)
NO <sub>X</sub>	650	650	650	200	200	250
Dust	30(4)	30(4)	30	–	–	–

(1) 300 in the case of plant firing straw

(2) 400 mg/Nm<sup>3</sup> in the case of plants with a rated thermal input greater than 20 MW.

(3) or whichever is the higher of 200 in the case of plant rated 5 MW or less or 170 mg/Nm<sup>3</sup> in the case of biogas

(4) 50 in the case of plant rated 20 MW or less

(5) 850 mg/Nm<sup>3</sup> for plants 5MW<>20MW firing heavy fuel oil until January 1st 2030

## EMISSION LIMIT VALUES (ELV'S)

For new plant put into service after 20th December 2018, the following ELV's will apply

### For NEW engines and gas turbines:

Pollutant	Type of medium combustion plant	Type of medium combustion plant			
		Gas oil	Liquid fuels other than gas oil	Natural gas	Gaseous fuels other than natural gas
SO <sub>2</sub>	Engines and gas turbines	–	120	–	15(1)
NO <sub>X</sub>	Engines	190(2)	190(2)	95(3)	190
	Gas turbines(4)	75	75	50	75
Dust	Engines and gas turbines	–	10(5)	–	–

(1) 40 mg/Nm<sup>3</sup> in the case of biogas

(2) 225 mg/Nm<sup>3</sup> for dual fuel engines in liquid mode.

(3) 190 mg/Nm<sup>3</sup> for dual fuel engines in gas mode

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

(5) 20 mg/Nm<sup>3</sup> 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

### For NEW plant other than engines and gas turbines:

Pollutant	Type of medium combustion plant		Liquid fuels other than gas oil	Gas oil	Natural gas	Gaseous fuels other than natural gas
	Solid biomass	Other solid fuels				
SO <sub>2</sub>	200	400	350	-	-	3
NO <sub>X</sub>	300(2)	300(2)	300	200	100	200
Particulate Matter	20(3)	20(3)	20(4)	-	-	-

(1) 100 mg/Nm<sup>3</sup> in the case of biogas

(2) 500 mg/Nm<sup>3</sup> 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.

(3) 50 mg/Nm<sup>3</sup> 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/Nm<sup>3</sup> in the case of plants with a total rated thermal input greater than 5 MW and less than or equal to 20 MW

(4) 50 mg/Nm<sup>3</sup> 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.

Note that these figures are normalised to 3% O<sub>2</sub> for liquid and gaseous fuels and 6% O<sub>2</sub> for solid fuels for plants other than engines and turbines. Engines and turbines are all normalised to 15% O<sub>2</sub>. All figures are in mg/Nm<sup>3</sup>.

## HOW DO THE NEW RULES IMPACT ON EXISTING LEGISLATION?

The rules imposed by the MCPD will work alongside existing emissions limits to standardise the UK to the same levels. They will apply to new and existing medium-sized combustion plants and all qualifying plant equipment will require a permit to operate and will need to meet the proposed Emission Limit Values (EVL's).

The existing rules make it possible for monitoring of SO<sub>2</sub> to be avoided by burning fuel of sufficiently low sulphur content. It is most likely that record keeping to show the SO<sub>2</sub> content of the fuel used, will be the simplest method of demonstrating compliance with the SO<sub>2</sub> EVL's for the majority of operators.

SO<sub>2</sub> emissions are already limited through The Sulphur Content of Liquid Fuels Regulations (SCoLF) however, will either need to be updated or repealed to reflect the new target figures.

Biomass boilers installed under the Renewable Heat Incentive (RHI) since 2013 already have ELV's in place for particulates and NO<sub>x</sub> but did not include SO<sub>2</sub>. The proposed MCPD limits are tighter and include SO<sub>2</sub> so existing biomass boilers will need to be checked for compliance if they were not installed under the RHI.

The UK also has obligations through the EU Ambient Air Quality Directive to ensure that concentrations of NO<sub>x</sub> do not exceed World Health Organisation guideline levels more than 18 times each year. The MCPD will not provide the controls required to adequately address this problem. It does however set periodic emissions monitoring requirements to demonstrate compliance with emission limits.

Additionally, the carbon monoxide emissions will be recorded for all installations but currently no limit has been proposed.

Some cities in the UK already have their own rules in place with, potentially, tighter limits. Where such rules pertain, the legislation that enforces tighter limits will apply. An example is the London Plan 2011 Implementation Framework, which holds sections appertaining to combustion plant emissions within the Sustainable Design and Construction Supplementary Planning Guide of April 2014.

\*Data taken from the Department for Environment, Food & Rural Affairs Consultation document, 'Improving Air Quality: Reducing Emissions from Medium Combustion Plants and Generators' November 2016