

## Frequently asked questions

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### **What is a medium combustion plant?**

Combustion plant are defined as any technical apparatus in which fuels are oxidised in order to use the heat.

A medium combustion plant is any plant or equipment used to burn (combust) materials, with a net rated thermal input between 1 and 50MW.

Medium combustion plant are used to generate heat for large buildings (e.g., large office buildings, hotels, hospitals, prisons, shopping centres, etc) and industrial processes, as well as for power generation.

### **What is the difference between a new and existing medium combustion plant?**

A new medium combustion plant is a combustion unit that was first fired on or after 20 December 2018. Any plant in use before 20 December 2018 is an existing plant.

### **When does an existing medium combustion plant become a new medium combustion plant?**

An existing medium combustion plant will become a new medium combustion plant if it is either:

- altered or repaired which results in an increase to pollution levels (note: changing to a cleaner fuel would not be considered a change from new to existing); or
- substantially refurbished and the refurbishment costs are more than 50% of what a new comparable medium combustion plant would cost (taken from the definition in the Energy Efficiency Directive).

- In relation to a generator, if the generator is not an emergency or standby generator, ie used for peak loping, grid balancing or other purpose; then an existing generator is considered new when a new contract to supply / balance electricity is entered into after Dec 2016.

### **What should I do if I have a new medium combustion plant?**

You must obtain a PPC permit from your Local District Council or NIEA for new plant between 1 and 50MW net rated thermal input, before it is commissioned. The permit will set out emission limit values for sulphur dioxide (SO<sub>2</sub>), oxides of nitrogen (NO<sub>x</sub>) and dust based on plant type, fuel type and size. NIEA only permit plant on installations that have a PPC Part A or B permit.

### **What should I do if I have an existing medium combustion plant?**

All existing medium combustion plant with a net rated thermal input of between 20 and 50MW must already be permitted by the Local District Council or if on a PPC Part A or B site by NIEA.

Permit applications for existing medium combustion plant with a net rated thermal input of between 5 and 20MW must be submitted to your Local District Council now / before 30 June 2023. The plant must be able to demonstrate compliance with the emission limit values set out in the permit by 1 January 2025.

Permit applications for existing medium combustion plant with a net rated thermal input of between 1 and 5MW must be submitted to your Local District Council before 30 June 2028. The plant must comply with the emission limit values set out in the permit by 1 January 2030.

### **What should I do if I have an existing medium combustion plant located on an installation already permitted by NIEA under Part A or Part B of the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013 (as amended)?**

NIEA should have served a Notice under Regulation 32 of the PPC Regulations requiring operators to gather information on their medium combustion plant.

NIEA will vary the permit to insert a schedule of conditions relating to medium combustion plant including emission limit values which may on occasions be stricter than those specified in the Medium Combustion Plant Directive depending on the BAT-AELs specified in the relevant BREF if appropriate, and local air quality.

Please contact NIEA if you expected to receive an information notice but had not received one by 31 May 2023.

**What should I do if I plan to add a new medium combustion plant to my installation already permitted by NIEA under Part A or B of the PPC Regs?**

New medium combustion plant will usually be added to the existing permit by a standard variation.

You should be in liaison with your site inspector in relation to any proposed changes you intend to make on your installation.

**How do I apply for two or more medium combustion plant located on one site?**

You can apply for multiple medium combustion plant located on one site and operated by the same person using one application form provided the total on the site is less than 50 megawatts.

Only one application fee is payable in these circumstances.

Medium combustion plant discharging their waste gases through a common stack will be considered as a single plant.

**What are the monitoring requirements for medium combustion plant?**

The first monitoring of emissions must be undertaken within four months of the grant of the permit or the start of the operation of the medium combustion plant, whichever is later. For existing medium combustion plant we will accept the first monitoring up to two years before the permit application.

The permit conditions will specify the requirements and frequencies for the follow up monitoring which will be annually or once every three years depending on the size of the plant.

### **Are the rules different for standby medium combustion plant?**

Permits are required for medium combustion plant operating less than 500 hours per year. The 500 hour limit is based on a rolling average.

There is a five-year rolling average for existing standby plant and three-year rolling average for new standby plant. There is no annual limit, so in theory an existing standby plant could operate for 2,500 hours, and a new standby plant could operate for 1,500 hours in one year before failing to comply with the permit requirements.

Any operator anticipating or planning to exceed the 500-hour limit must apply to vary the permit beforehand.

There is a requirement for standby medium combustion plant to be monitored periodically for carbon monoxide and the required intervals will be specified in the permit. The standby plant should not be switched on just for the purposes of monitoring, although regular testing regimes required for generation purposes should allow for this.

### **What are the correct emission reference levels?**

All emission limit values, and monitoring results should be corrected as follows:

- (a) at a temperature of 273.15 K,
- (b) at a pressure of 101.3 kPa,

- (c) for the water vapour content of the waste gases,
- (d) at a standardised O<sub>2</sub> content of—
  - (i) 6 % for medium combustion plants using solid fuels,
  - (ii) 3 % for medium combustion plants, other than engines and gas turbines, using liquid and gaseous fuels,
  - (iii) 15 % for engines and gas turbines.

### **What is a habitats impact assessment?**

Before an application is granted the effect of the emissions from medium combustion plant on sensitive designated habitats must be assessed against Regulation 43(1) of the Conservation (Natural Habitats, etc) (Northern Ireland) 1995 (as amended). Medium combustion plant already permitted by NIEA under Part A or B of the PPC Regs 2013 (as amended) were assessed at the time of initial application and therefore shouldn't require further assessment.

The applicant must carry out a Habitats Impact Assessment screening assessment using tools that have been specifically developed for this purpose. [Medium combustion plant: screening tool - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/medium-combustion-plant-screening-tool)

I have six existing emergency generators on my site. Each one has a net rated thermal input of 2.1MW. In combination there is a total net rated thermal input of 12.6MW. When do I need to apply for a MCP Permit?

These are considered as individual plant and not as an aggregate, provided they are not subject to a contract with the Grid to provide balancing / peak loping.

The operator would therefore need to apply for a permit for these six existing MCP by 30 June 2028 and comply with the emission limit values set out in the permit by 1 January 2030. If you change the status of anyone of them by signing a contract that becomes a new generator and will require a Part C permit even if the generator is 20

years old and it must meet the emission limit values before operating in the new mode.

I have eight existing plant with net rated thermal inputs ranging from <1MW to 11.4MW. When do I need to apply for a MCP Permit?

Any plant <1MW is not considered a medium combustion plant and is not regulated except in the case of a generator being used to supply electricity to the grid for peak loping / balancing.

A permit application for the plant with a net rate thermal input between 5 and 20MW is required by 30 June 2023.

A permit application for the plant with a net rated thermal input between 1 and 5MW is not required until 30 June 2023. However, if the operator wishes to permit these plant at the same time as the plant >5MW, they may be added to the application form. Compliance with the emission limit values for the plant between 1 and 5MW will be post-dated until 1 January 2030 and this will be set out in the permit.

## Definitions

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### **Biomass**

Biomass means any of the following:

a) products consisting of any vegetable matter from agriculture or forestry which can be used as a fuel for the purpose of recovering its energy content;

b) The following waste:

(i) vegetable waste from agriculture and forestry;

(ii) vegetable waste from the food processing industry, if the heat generated is recovered;

(iii) fibrous vegetable waste from virgin pulp production and from production of paper from pulp, if it is co-incinerated at the place of production and the heat generated is recovered;

(iv) cork waste;

(v) wood waste with the exception of wood waste which may contain halogenated organic compounds or heavy metals as a result of treatment with wood preservatives or coating and which includes, in particular, such wood waste originating from construction and demolition waste.

NIEA's Permitting Guidance for Biomass Combustion provides guidance on when biomass is considered a fuel and when it is considered waste and therefore which permit is required.

### **Boiler**

Large vessel containing water that is heated by a burner (gas, oil, etc.) which then can be used to provide steam, or for other industrial purposes. Furnaces would usually be considered a boiler.

## **Combined cycle gas turbine (CCGT)**

The exhaust from a gas turbine is used to turn water into steam and run a steam turbine. A CCGT has good efficiency and can provide a rapid response. CCGT can be expensive to construct, but the lower running costs may offset the construction costs.

## **Combustion engine**

An internal combustion engine (ICE) like in a car, with pistons which move in cycles. It is inefficient but can be easily scaled down to very small sizes.

Combustion engines are usually used as a backup in industrial settings.

Combustion engines lose efficiency due to heat loss and to the number of moving parts (in different directions).

## **Dual Fuel Engine**

An internal combustion engine which uses compression ignition and operates according to the Diesel cycle when burning liquid fuels and according to the Otto cycle when burning gaseous fuels.

Dual Fuel combustion plant is capable of burning more than one fuel without a significant change to the setup e.g., natural gas and diesel.

There are some emission limit values categories that differ with dual fuel combustion plant.

## **Gas Turbine**

Any rotating machine which converts thermal energy into mechanical work, consisting mainly of a compressor, a thermal device in which fuel is oxidised in order to heat the working fluid, and a turbine; this includes both open cycle and combined cycle gas turbines, and gas turbines in cogeneration mode; all with or without supplementary firing.



Gas turbines are commonly used in power plant, these are very similar in construction to jet engines, where gas is the fuel. The torque produced is used to run the generator.

Gas turbines are not as efficient as steam or combined cycle but more efficient than combustion engines. The power output can quickly meet changing demands.

### **Generator**

An internal combustion engine with a built-in alternator. Fuel is combusted to provide momentum which the alternator then converts to electrical power. Generators are usually diesel but can be converted to other fuel types.

### **Heavy and liquid fuel oils (HFO/LFO)**

(a) any petroleum-derived liquid fuel falling within CN codes 2710 19 51 to 2710 19 68, 2710 20 31, 2710 20 35, or 2710 20 39; or

(b) any petroleum-derived liquid fuel, other than gas oil as defined in point 19, which, by reason of its distillation limits, falls within the category of heavy oils intended for use as fuel and of which less than 65 % by volume (including losses) distils at 250 °C by the ASTM D86 method. If the distillation cannot be determined by the ASTM D86 method, the petroleum product is likewise categorised as a heavy fuel oil.

HFO/LFO are not gas oil and biodiesel is not gas oil.

### **Multiple fuels**

Where a medium combustion plant simultaneously uses two or more fuels, the emission limit value for each pollutant shall be calculated by:

(a) taking the emission limit value relevant for each individual fuel as set out in Annex II of the MCPD;

(b) determining the fuel-weighted emission limit value, which is obtained by multiplying the individual emission limit value;

(c) by the thermal input delivered by each fuel, and dividing the product of multiplication by the sum of the thermal inputs delivered by all fuels;

(d) aggregating the fuel-weighted emission limit values.

See Article 6(13) of the MCPD. [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 \(europa.eu\)](#)

### **Natural gas**

Means naturally occurring methane with no more than 20% (by volume) of inerts and other constituents. Natural gas must contain a minimum of 80% methane. Landfill gas tends to contain 60% methane and 40% CO<sub>2</sub> so is not natural gas.

### **Net rated thermal input**

The rate at which fuel can be burned at the maximum continuous rating of the appliance multiplied by the net calorific value of the fuel expressed as megawatts thermal.

### **Permitted Installation**

A Permitted installation is where one or more regulated activities, and any directly connected activities, are carried out under the conditions imposed by a Pollution Prevention and Control Permit.

### **Steam turbine**

Gas heats water in a boiler; the overheated steam runs through turbines and is then cooled. Steam turbines use the same principle as most other thermal power plants (coal, nuclear, geothermal).

Steam turbines are usually large installations and can take a long time to get up to speed (so no rapid response to demand) but are very efficient.

## Further guidance

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### Where can I get further guidance?

Contact the local Council at [ehealth@armaghbanbridgecriagavon.gov.uk](mailto:ehealth@armaghbanbridgecriagavon.gov.uk)

In addition further technical information can be obtained from:

[Medium Combustion Plant Directive and Specified Generators | Department of Agriculture, Environment and Rural Affairs \(daera-ni.gov.uk\)](#)

[Medium combustion plant | Scottish Environment Protection Agency \(SEPA\)](#)

[Natural Resources Wales / Medium combustion plants and specified generators](#)

[Medium combustion plant and specified generators: environmental permits - GOV.UK \(www.gov.uk\)](#)