

Questions & Answers and Pieces of Information (Q&A & POI)

1.1 Aggregation Rules

Where two or more combustion units discharge their waste gases through a common stack, those units will be regarded as a single combustion plant for the purposes of the Large Combustion Plant Directive. Capacities will therefore be added for the purpose of calculating the total rated thermal input. Note: The Directive applies to "combustion plants" with a rated thermal input of 50 MW or more.

The Industrial Emissions Directive 2010/75/EU clarifies the following:

- *Where two or more separate combustion plants which have been granted a permit for the first time on or after 1 July 1987, or the operators of which have submitted a complete application for a permit on or after that date, are installed in such a way that, taking technical and economic factors into account, their waste gases could in the judgement of the competent authority, be discharged through a common stack, the combination formed by such plants shall be considered as a single combustion plant and their capacities added for the purpose of calculating the total rated thermal input.*
- *For the purpose of calculating the total rated thermal input of a combination of combustion plants referred to in the above, individual combustion plants with a rated thermal input below 15 MW shall not be considered.*

1.2 Air Pollution

What is the purpose behind controlling sulphur dioxide (SO₂), nitrogen oxide (NO_x) and particulate emissions from Large Combustion Plants?

NO_x emissions contribute, particularly with the presence of intense sunlight and volatile organic compounds, to the formation of low level ozone. This low level ozone is not to be confused with the stratospheric ozone layer. In relation to health, ground level ozone and particulate matter ("fine dust") are the pollutants of most concern. The most severe impact is the chronic effect (the shortening of life expectancy) associated with long-term exposure to fine particles (PM_{2.5}). However, short-term exposure to various PM fractions, and to ozone in high concentration episodes, leads to acute effects which are also significant. The main acute impact is increased mortality in sensitive population groups such as elderly citizens, or those suffering from respiratory ailments. In addition, the World Health Organisation (WHO) has also recently reported evidence for chronic effects of long term exposure to ozone and acute effects of direct exposure to NO₂. Air pollution is also associated to other negative health effects besides increased mortality, such as chronic bronchitis, asthma, and lower respiratory symptoms.

The pollutants of most concern for ecosystem damage are sulphur oxides (SO_x), nitrogen oxides (NO_x) and ground-level ozone (O₃). The main impacts are acidification (the deposition of acidifying substances such as SO_x and NO_x in excess of the carrying capacity of ecosystems), and eutrophication (excess deposition of nutrients such as NO_x). Direct damage to certain physiological functions of plants (including forest and food crops) also occurs as an effect of ozone.

1.3 Multi-firing Plant

Classification of the plant as a multi-fuel firing unit, such as a coal plant with additional oil firing: Whether or not the plant is classified as a multi-fuel firing unit will depend on the purpose of using the oil. If the oil contributes to the firing of the plant, then the plant will be regarded as a multi-fuel firing unit, regardless of the amount used.

Article 2(8) of the Large Combustion Plant Directive defines a "multi-fuel firing unit" as:

- *"Any combustion plant which may be fired simultaneously or alternately by two or more types of fuel".*

"Fuel" is defined in Article 2(6) as:

- *"Any solid, liquid or gaseous combustible material used to fire the combustion plant with the exception of waste covered by [Council Directives 89/369/EEC, 89/442/EEC, 94/67/EC or any subsequent Community act repealing or replacing [the same]]."*

Therefore, if the oil is used for purposes other than start-up, the classification of the plant as a multi-fuel firing unit will normally affect the way in which the emission values are determined and measured, i.e. when granting the licence, the emission limit values set out in Annexes III to VII of the Directive corresponding to each fuel used shall be applied. See also Question on Start-up fuel.

1.4 Operating Hours

Start-up and shut-down periods should not be taken into account for the purposes of calculating the operational hours, a point clarified in the Directive. As the glossary of the questionnaire states:

- *Operating hours: The conditions during which a combustion plant is operating and discharging emissions, excluding start-up and shutdown periods.*

The whole plant will be regarded as operating when any part of it operates (irrespective of the number of units forming part of that combustion plant). Otherwise, a plant would not be regarded as operating unless it was running at full capacity. Equally, the operation of any number of units simultaneously for 1 hour represents 1 hour of operation of the combustion plant as a whole.

1.5 Standby Fuel

The use of standby fuel (i.e. fuel which is only used when the supply of the usual fuel has been interrupted) would be covered by either Article 7(2) or (3) of the Large Combustion Plant Directive, where the specified conditions are met, see below for these articles. Otherwise, the plant would have to comply with the Emission Limit Values applying to the fuel under the Large Combustion Plant Directive (assuming that the fuel is used to "fire" the plant).

- *Article 7(2): The competent authority may allow a suspension for a maximum of six months from the obligation to comply with the emission limit values provided for in Article 4 for sulphur dioxide in respect of a plant which to this end normally uses low-sulphur fuel, in cases where the operator is unable to comply with these limit values because of an interruption in the supply of low-sulphur fuel resulting from a serious shortage. The Commission shall immediately be informed of such cases.*

- *Article 7(3): The competent authority may allow a derogation from the obligation to comply with the emission limit values provided for in Article 4 in cases where a plant which normally uses only gaseous fuel, and which would otherwise need to be equipped with a waste gas purification facility, has to resort exceptionally, and for a period not exceeding 10 days except where there is an overriding need to maintain energy supplies, to the use of other fuels because of a sudden interruption in the supply of gas. The competent authority shall immediately be informed of each specific case as it arises. Member States shall inform the Commission immediately of the cases referred to in this paragraph.*

1.6 Standby Generators and Supplementary Firing

A "Standby Generator" includes those generators used as back-up equipment or for the purpose of boosting performance (e.g. in cases of breakdown, malfunction, etc.); and

A "Supplementary Firing Apparatus", includes any appliances used to boost performance of a plant;

None of the definitions above shall include any apparatus being used in the normal operation of the plant.

If the Standby Generator or Supplementary Firing Apparatus is part of the "combustion plant", and could be used at the same time as the rest of the plant, then its rated thermal input should be included in the total rated thermal input (or capacity) of the combustion plant.

A Standby Generator or Supplementary Firing Apparatus will therefore fall within the scope of the Large Combustion Plant Directive if the following three requirements are met:

- *Do such items, Standby Generator or Supplementary Firing Apparatus form part of the Combustion Plant? The answer will be yes if they vent through a common stack with the other combustion units (or in case of new plants could do so);*
- *What is the "potential" thermal input of the plant, including the Standby Generator or Supplementary Firing Apparatus? If equal to or exceeding 50 MW , it will fall within the definition of a Large Combustion Plant (subject to the following paragraph);*
- *Are the Standby Generator or Supplementary Firing Apparatus merely substituting other parts or operating in addition to all those parts, for example to boost performance? There will be circumstances in which standby generators are simply there as back- up generators and they will not be used in normal circumstances, but only in emergency or breakdown of other equipment. If the units are used in all cases to substitute existing parts, then, they will "use-up" the allocation of that part they are substituting for aggregation purposes and their rated thermal input will not be counted towards calculation of the total. However, if the Standby Generator or Supplementary Firing Apparatus are used to boost performance in certain cases (as well as at times substituting), they will need to be counted towards the total calculation of the rated thermal input.*

If gas turbines are used as part of the supplementary firing process, both the boiler and the turbine (provided they vent through a "common stack") will form part of the combustion plant and all emissions will be taken into account for the purposes of the Large Combustion Plant Directive. However, this is a complex situation not prescribed in the legislation in respect of relevant Emission Limit Values. In principle, it will be necessary to monitor the emissions from the gas turbine(s) separately for compliance with those limits prescribed in the Directive for such a gas turbine. A Best Available Techniques assessment will be required in the individual case for the combined combustion plant, comprising both the gas turbine and the

supplementary firing unit, which will then determine the emission limit values to be applied for the overall combustion plant.

1.7 Start-up Fuel

It is normal practice that small amounts of diesel or propane can be used for start-up conditions on combustion units. As clarified above for operating hours, start-up and shut down periods are not included as part of the Large Combustion Plant Directive. Therefore, if these small amounts of fuel are restricted to those start-up and shut-down periods, they are not relevant operational fuels for the purpose of this Directive. See also multi-firing plant.

1.8 When a site has a number of combustion units less than 50 MWth

It would not be uncommon for a production facility to have a number of smaller combustion units less than 50 MW. Does the Large Combustion Plant Directive apply? See section on Aggregation Rules above.

(i) A number of small units under 50 MW on a single site would be aggregated together and regarded as a single combustion plant for Large Combustion Plant Directive purposes where they vent their waste gases through a "common stack" or, in the case of new plants, the regulator considers that they could do so (taking technical and economic factors into account). The Large Combustion Plant Directive would apply to that plant if the combined rated thermal input of the units was 50 MWth or more.

(ii) However, where such units do not vent through a common stack (and in the case of new plants, are not capable of doing so), they would not be aggregated to form a single combustion plant under the Large Combustion Plant Directive, even where they have some other form of technical connection or are in close proximity on the same site. Such factors are irrelevant to the definition of "combustion plant".

1.9 Biomass

Biomass is defined in European legislation. The Renewable Energy Directive 2009/28/EC gives the following definition of 'biomass':

'the biodegradable fraction of products, waste and residues from biological origin from agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste'.

The Industrial Emissions Directive 2010/75/EU gives the following definition:

(31) '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.