

Regulation of biomass combustion.

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Regulation of biomass combustion

- “Clean,” untreated wood waste
- “Contaminated” wood waste
- Virgin biomass
- The way forward

Clean, untreated wood waste

- Who regulates clean, untreated wood waste combustion?
 - Appliance(s) <50kg/hr = Environment Agency U4 exemption.
 - Existing appliance(s) between 50kg/hr – 3t/hr = Local Authority Section 5.1 Part B(a)(v) permit.
 - New appliance(s) between 50kg/hr – 1MW = Local Authority Section 5.1 Part B(a)(v) permit.
 - New appliance(s) between 1MW – 3t/hr = Environment Agency Schedule 25a Medium Combustion Plant permit and Part B.
 - Appliance(s) > 3t/hr = Environment Agency Section 5.1 Part A1(b) permit.

What is clean, untreated wood waste?

- Industrial Emissions Directive regulation 3(31)(b) states “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;”
- EPR 2016 Section 5.1 Part B(a)(v) states “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 coatings;”

Technical note 5.1(18)

European Waste Classification Codes	Description	Further restriction
02 01 03 02 01 07	Plant tissue waste from agriculture, horticulture and forestry	
03 01 01	Waste bark and cork from wood processing and the production of panels and furniture	No chemical treatments applied.
03 01 05	sawdust, shavings, cuttings, wood, particle board and veneer ⁽¹⁾ other than those mentioned in 03 01 04	No chemical treatments applied. ⁽¹⁾ Only veneer that is fixed to the board.
03 03 01	Waste bark and wood from pulp, paper and cardboard production and processing	No chemical treatments applied.

European Waste Classification Codes	Description	Further restriction
15 01 03	Wooden packaging	Visibly clean wooden packaging including pallets, no chemical treatments applied.
19 12 07	Wood other than wood containing hazardous substances (19 12 06) from waste management facilities	<p>Source segregated visibly clean single waste wood streams such as pallets, where no chemical treatments have been applied.</p> <p>Post segregation of mixed waste wood streams from civic amenity sites or skip hire operators is not sufficient.</p>

For the avoidance of doubt, any waste wood which has been classified as hazardous waste or any waste wood originating from construction and demolition works cannot be incinerated / combusted in a 5.1 Part B appliance.

Emission limits

- U4 exemption – No emission limits
- Section 5.1 Part B permit – 50kg/hr – 90kg/hr
 - No dark smoke.
- Section 5.1 Part B permit – >90kg/hr all existing plant and new plant up to 1MW
 - Dust = 90mg/Nm³
 - NO_x = 600mg/Nm³
- Medium Combustion Plant (new plant)
 - Dust – 50mg/Nm³ up to 5MW
 - 30mg/Nm³ 5MW to 3t/hr.
 - NO_x – 250mg/Nm³.

Contaminated wood waste

- Has to comply with Chapter IV and Annex VI of the IED.
- Appliance(s) $<3\text{t/hr}$ = Schedule 13 Small Waste Incineration Plant regulated by the Local Authority.
- Appliance(s) $>3\text{t/hr}$ = Section 5.1 Part A1 regulated by the Environment Agency.

Contaminated wood waste

- Plant “shall be designed, equipped, built and operated in such a way that the gas resulting from the co-incineration of waste is raised in a controlled and homogeneous fashion and even under the most unfavourable conditions, to a temperature of at least 850 °C for at least two seconds.”

Contaminated wood waste

- Emissions limits are subject continuous/periodic monitoring with limited scope for changes:
 - Particulate matter
 - Total Organic Carbon
 - Hydrogen Chloride
 - Hydrogen Fluoride
 - Carbon Monoxide
 - Sulphur Dioxide
 - NO₂
 - Cadmium & Thallium
 - Mercury
 - Sb, As, Pb, Cr, Co, Cu, Mn, Ni & V
 - Dioxins/furans

Virgin biomass

- Medium Combustion Plant
 - Regulated by the Environment Agency
 - Only relates to emissions to atmosphere.
 - Dust – 50mg/Nm³.
 - NOx – 250mg/Nm³.
 - New plant over 1MW net rated thermal input from 20th December 2018.
 - Existing plant between 5MW – 50MW from 1st January 2025.
 - Existing plant between 1MW – 5MW from 1st January 2030.
 - Any plant >20MW is also a Section 1.1 Part B.

The way forward

- Before you purchase the boiler and obtain a permit.
 - Be sure what wastes you want to incinerate, i.e. are they clean or contaminated.
 - If contaminated confirm that your boiler meets the IED requirements.
 - Determine what size boiler you need.
 - Determine who your regulator is, or if you need one.
 - Confirm what level of emissions monitoring you need.

Thank you for listening

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