



**CLEAN AIR ACT 1993**

**BIOMASS AND AIR QUALITY**

**SUPPLEMENTARY INFORMATION FOR DEVELOPERS**

V2.3 August 2020



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## **1. Scope of this Guidance**

This guidance covers the burning of dry and unseasoned woody fuels only including wood chips, pellets and logs with up to 50% moisture content and the aim is to assist developers to comply with relevant air pollution control legislation. It is intended to supplement guidance<sup>1</sup> provided to assist developers in complying with the legislative requirements of the planning regime. Capacity of boilers dealt with by the Clean Air Act ranges from 16.12 kW thermal output to 20MW thermal input. It does not cover the burning of fuels derived from waste wood or other materials which would be covered by the Waste Incineration Directive (WID) or Pollution Prevention & Control (PPC) regime.

## **2. Air Quality Impacts of Biomass Plant**

It is generally accepted that the combustion of biomass for energy production is environmentally beneficial due to its effect on the reduction in volume of greenhouse gases produced by the burning of non-renewable fossil fuels such as coal, gas and oil. However, there can be a

**Is the fuel covered**

**Figure 1**

## Table 1

11(2)	An operator may ask the LA to carry out the monitoring at its own expense if the boiler burns < 1.02 tonnes/hr
12(1)	The LA may require an operator to provide information about the boiler or fuel
14(2)	The height of the chimney that serves a boiler burning biomass at a rate > than 45.4 kg/hr must be approved by the LA
18	Creation of smoke control areas

#### **4.1 Notification of Installation for Boilers > 16.12kW Output**

It is a requirement of Section 4 of CAA that proposals to install new biomass boilers must be notified to the local authority before installation. Where possible it is recommended that a notification should be made at the design stage and includes the details relating to arrestment plant and chimney height described below.

#### **4.2 Arrestment Plant for Boilers > 45.4 kg/hour Capacity**

Section 6(1) requires biomass boilers to be equipped with particulate arrestment plant unless an application for exemption is made and approved under Section 7(2). An application for exemption should include technical details relating to capacity, specification of fuel, rate of fuel consumption and the design and control of the combustion system. It is likely that smaller boilers will not require abatement equipment but sufficient information should be provided to allow the local authority to reach a decision.

#### **4.3 Chimney Height for Boilers > 45.4 kg/hour Capacity**

The correct height of a chimney is critical in ensuring that fumes from

There are no smoke control areas in Argyll and Bute. In other areas the local authority will be able to tell you whether the proposed boiler will be sited in a designated smoke control area.

## **5. Assessing the Impact of Biomass Boilers.**

Whether the local authority receives notification that a biomass boiler is proposed either through submission of a planning application or Clean Air Act

## Appendix 1

### **Clean Air Act 1993 Notification of Biomass Boiler Installation and Provision of Technical Data**

In common with other types of combustion appliances, biomass boilers are potentially a source of air pollution. Pollutants associated with biomass combustion include particulate matter (PM<sub>10</sub>/PM<sub>2.5</sub>) and nitrogen oxides (NO<sub>x</sub>) emissions. These pollution emissions can have an impact on local air quality and affect human health. It is essential that any new biomass boilers installed in Argyll and Bute meet certain emission control requirements in order to protect local air quality.

To support a notification under CAA or to support a planning application associated with a biomass boiler, the following information below must be supplied to the local authority.

This template is adapted from a version produced by EPUK & London Borough of Camden.



## 1. Installation Details

- a) Planning Application  
Reference (if applicable)

h) Describe the fuel feed system.

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i) Provide details of the abatement equipment in place for controlling particulate matter emissions including capacity and rated emission limit.

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j)
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### 3. Boiler Operation and Maintenance

System efficiency and emissions performance very much depend upon regular maintenance. Your installer should be able to recommend a suitable maintenance schedule.

l) Describe arrangements for cleaning and de-ashing the boiler.

m) Provide details of the maintenance schedule associated with boiler, abatement equipment and flue

#### 4. Boiler Flue Details

The design of the flue greatly affects how pollutants produced in the boiler disperse over the surrounding area. Where the area is heavily built up, or has existing air quality issues, dispersion becomes more complicated and a computer modelling technique known as dispersion modelling may be required. Your installer should be able to provide most of the details and make a calculation on flue height and design. When dispersion modelling is required you or your installer may need to engage a specialist consultant.

o)	Identify the height of the boiler exhaust flue above ground. Details should be provided of the method used to calculate flue height. Evidence should be attached to demonstrate that predicted emission concentrations associated with the calculated flue height do not have a significant impact on the air quality objectives for NO <sub>2</sub> and PM <sub>10</sub> .
p)	Identify flue internal diameter (m).
q)	Provide maximum particulate matter and nitrogen dioxide emission rates (mg/m <sup>3</sup> or g/hr) <b>including reference conditions</b> .
r)	Identify the exhaust gas efflux velocity (m/s) and temperature (°C).
s)	Provide the grid reference of boiler exhaust flue.

## 5. Fuel Details

Emissions from a biomass boiler depend greatly on the type and quality of the fuel used. Reasonable guarantees are therefore needed that the fuel is compatible with the boiler, is of a high quality and that quality will be assured for a reasonable period of time. Your fuel supplier and installer should be able to provide this information.

t)	Describe the fuel specification including origin, type of wood (chips, pellet, briquettes), nitrogen, moisture, ash content (%).
u)	Does the fuel comply with European or equivalent fuel quality standards such as CEN/TS 335 or ONORM?
v)	Describe what fuel quality control procedures will be adopted to guarantee constant fuel quality from your supplier.
w)	Provide evidence to demonstrate that the biomass boiler combustion system is applicable to the fuel specification.
x)	Identify where and how fuel will be stored on site (e.g. bunker or silo).



