

**Biomass Installations in Renfrewshire Council: An Advice Note for Developers**

**This leaflet explains how biomass installations can affect air quality, and what this means for the planning process for developments containing a biomass boiler or combined heat and power (CHP) unit or other biomass energy technology.**

Use of renewable fuels such as biomass can cut emissions of the greenhouse gas carbon dioxide, and therefore helps to avoid the consequences of dangerous climate change. Biomass can be an efficient, environmentally friendly fuel if attention is paid to the relevant issues and best practice is adopted. In all cases it is recommended that appropriate professional advice is sought to optimise financial and environmental operation.

**Why worry about air quality?**

The quality of the air we breathe has a direct effect on our health. Air quality in the UK has improved since the ‘Great Smogs’ of the 1950s. However polluted air is still a major threat to health in many towns, cities and even rural areas. Health based standards for many air pollutants have been set in the UK with more stringent regulations applying for some pollutants in Scotland.

**Air Quality in Renfrewshire**

Renfrewshire Council has an extensive network of air quality monitoring sites. Due to exceedences of the annual and hourly mean objective concentrations of nitrogen dioxide (NO2) and the annual mean objective concentration of particulate matter (PM10), Renfrewshire Council has declared most of Paisley town centre an Air Quality Management Area (AQMA).

While there are currently no additional AQMAs within the Council boundary, there are a number of areas where air quality is a concern and the introduction of a biomass combustion source could result in potential exceedences of air quality objectives.

**What air pollutants do biomass boilers produce?**

In common with conventional combustion systems, biomass burning boilers can emit a number of pollutants including Nitrogen Dioxide (NO2), Particulates (PM10, PM2.5) and Sulphur Dioxide (SO2). The mix and amounts of pollution produced will depend on the size and design of the boiler, the quality of the fuel used and the presence of any emissions abatement (cleaning) equipment. Generally a well maintained biomass boiler will produce more pollution than a similar gas system, but less than an equivalent coal or oil fired boiler. The maintenance of the boiler and its associated equipment will also affect pollutant emissions, i.e. poor maintenance will lead to higher emissions.

**How are biomass boilers regulated?**

The regulatory system that applies to a biomass boiler depends upon its size (rated by its maximum heat input), its location and the type of fuel it burns. Large biomass boilers (heat input greater than 20 MW) are regulated under the Pollution Prevention and Control (Scotland) Regulations 2012. To install and operate such a boiler (>20 MW) a permit will be required from the Scottish Environment Protection Agency (SEPA), and emissions control must be provided by 'Best Available Techniques'. Medium sized boilers (45 - 20,000 kW) fall under the Clean Air Act 1993 and are regulated by the appropriate local authority. This legislation ensures that newly installed plant has adequate arrestment equipment and that where emissions from plant appear excessive measurements of emissions to the atmosphere can be required. Small boilers (heat input less than 45 kW) are also regulated under the Clean Air Act. In accordance with this legislation all biomass boilers operated within a Smoke Control Area must be certified as ‘exempt’ appliances and boiler stack height will need to be calculated and approved. Where an appliance is designed to burn fuel at a rate greater than 45.4 kg per hour Renfrewshire Council will be required to approve the chimney height.

Boilers burning contaminated waste wood (and other waste) can emit other pollutants, including highly toxic heavy metal compounds. For these reason boilers burning waste may be subject to more stringent regulations than boilers burning clean, new wood. For installations other than those burning virgin wood fuels, the applicant is advised to contact their local SEPA office in the first instance.

SEPA GLASGOW OFFICE

Law House  
Todd Campus  
West of Scotland Science Park  
Maryhill Road  
Glasgow  
G20 0XA

Tel: 0141 945 6350

**How does air quality affect my planning application?**

In the planning system air quality is a 'material consideration'. This means that a developer submitting a planning application that may adversely affect air quality can be required to include suitable measures to mitigate (rectify) the impacts on air quality, or, in the worst case, have planning permission refused. The weight given to air quality in deciding the application will depend on such factors as:

* The severity of the impacts on air quality;
* The air quality in the area surrounding the proposed development;
* The likely use of the development, i.e. the length of time people are likely to be residing or working at the location; and
* The positive benefits provided through other material considerations.

When preparing a planning application for a biomass installation, you ‘the applicant’ are advised to consult the latest Renfrewshire Council LAQM review and assessment reports for an update on current air quality issues and a map of the declared AQMA. These can be downloaded from the Council’s Air Quality webpage

<http://www.renfrewshire.gov.uk/webcontent/home/services/environment/pollution/es-airquality>

Details of Renfrewshire Council’s Smoke Control Areas can be found from the following Council webpage.

http://www.renfrewshire.gov.uk/webcontent/home/services/environment/pollution/es-md-airquality-smokecontrolareas

**What information might Renfrewshire Council require when I make my planning application?**

If the Council is concerned that a biomass boiler may adversely affect air quality, you will be required to provide further detailed information on the type of system you are proposing to install. Most of these questions relate to the type of boiler proposed, so it is essential that you know the make, model and size of boiler you are proposing to use before you submit your planning application. If your development is in a Smoke Control Area, and the size of your proposed boiler means that the Clean Air Act covers it, it is also essential that you check that your proposed boiler has been approved as an Exempt Appliance and provide certification evidence.

A Biomass Boiler Information Request Form requires to be completed and can be downloaded from

<http://www.renfrewshire.gov.uk/webcontent/home/services/environment/pollution/es-airquality>,

There are circumstances where you will be required to submit a detailed dispersion modelling study to demonstrate that the proposed appliance has no adverse impact on local air quality. Some of these are listed below:

* The proposed development is in the AQMA;
* The existing ambient air quality is within 10% of the annual mean objective for NO2 and/or PM10;
* The installation has multiple flues;
* The proposed site is in complex terrain;
* The proposed plant is surrounded by complex and variable building structures and heights and the stack may be lower than some parts of a neighbouring roof;
* The biomass plant is dual fuelled;
* There are significant traffic movements generated by the development;

**The applicant is advised to contact Renfrewshire Council Community Resources staff at the earliest opportunity in the application process in order to discuss the level of detail that will be required in order for Renfrewshire Council to assess the likely impact on local air quality of your proposed biomass installation.**

Environmental Improvements  
Community Resources   
Renfrewshire Council  
Renfrewshire House,

Cotton St,

Paisley

PA1 1BR

0300 300 0380

Email: [e-prot.es@renfrewshire.gov.uk](mailto:e-prot.es@renfrewshire.gov.uk)

**What other considerations are there with biomass?**

*System design and maintenance:* Biomass boilers operate most efficiently when running under load using fuel of the correct specification, reducing both fuel costs and emissions of pollutants. It is therefore important that the system (including fuel) is well specified, installed and maintained. Professional advice is therefore recommended for system design.

*Fuel delivery and storage:* The space and infrastructure available for delivery, storage and ash removal is very important. If your fuel store is too small more vehicle movements will be needed, and the consequent environmental and nuisance impacts may be high. Adequate space will be needed to ensure delivery vehicles can enter, manoeuvre and exit the fuel store area. Inadequate space will mean smaller vehicles have to be used, with consequent increased frequencies of deliveries and restrictions in the choice of fuel supplier.

**Additional Resources**

You may find the Carbon Trust publication ‘Biomass heating: a practical guide for potential users’ a useful source of information when preparing your biomass planning application. This publication provides guidance on the type of additional information you may need to provide with your application.