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Non-Domestic Renewable Heat Incentive

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Emissions Certificate

In order to accredit any biomass boiler or stove applications received for the domestic or non-domestic Renewable Heat Incentive (RHI) schemes, Ofgem must be satisfied that a valid emissions certificate exists for the specific model in the application (or alternatively for the non-domestic RHI, an environmental permit for the site). This template incorporates all information required to demonstrate that the tested plant meets the air quality requirements of the RHI. It must be fully completed and issued by a testing laboratory in order to be a valid certificate.

1. TEST HOUSE	
a) Name and address of the testing laboratory that has carried out the required tests and issued this certificate * **if different, include details of both*	**Testing Laboratory:** Element Materials Technology, Unit C6, Emery Court, The Embankment Business Park, Heaton Mersey, Stockport, SK4 3GL **Certificate Issuer:** Element Materials Technology, Unit C6, Emery Court, The Embankment Business Park, Heaton Mersey, Stockport, SK4 3GL
b) Name and signature of the person authorised by the testing laboratory to issue the certificate	Name: James Eldridge, Senior Technical Advisor - Stockport Signature:
c) Date of issue of this certificate, together with certificate reference number for this certificate **Please see Note A*	Date: *06/07/2023* Certificate reference number: EMT-04518-GF210-V2 (175 - 300kW) *Optional:*reference number of original test report on which this certificate is based: EMT04518 Glen Farrow UK Ltd – Biomass Boiler Report
d) If the testing laboratory that has carried out the required tests is accredited to BS EN ISO/IEC 17025:2005, date of accreditation and accreditation number *(if testing conducted on or after 24 September 2013, the testing laboratory **must be** BS EN ISO/IEC 17025:2005 accredited at the time of testing)*	Date: *30/06/2008* Accreditation number: UKAS 4279

2. PLANT - *Please see Note B*	
a) Name of the plant tested	Glen Farrow UK Ltd – Biomass Boiler GF210
b) Model of the plant tested* **Please ensure this is the same as in the manufacturer's documentation and boiler nameplate*	GF210
c) Manufacturer of the plant tested	Glen Farrow UK Ltd
d) Installation capacity* of the **tested** plant in kilowatts (kW) **The total installed peak heat output capacity*	210kW
e) Is the plant a manually stoked, natural draught plant? (without a fan providing forced or induced draught)	No
f) (i) Date the plant was tested* (ii) Please confirm that NOx and PM have been tested on the same occasion **This is in reference to the emissions testing for PM and NOx, not any wider range of tests. A specific date is required. Please provide the date of test performed at ≥85% of the installation capacity.* *If more than one model has been tested or testing has been conducted on different dates for different fuels, please list each date with details.*	*24/10/2022* Yes
g) Please list all the plants in the type-testing range* of the tested plants to which the certificate applies, if any.[1] Please include the **installation capacity** of each model. **This must follow the ratio rules:* *If the smallest plant in the range is 500kW or less, the largest plant in the range can't be more than double the smallest.* *If the smallest plant in the range is over 500kW, the largest plant in the range can't be more than 500kW greater than the smallest.*	GF210 – 210kW GF175 – 175kW GF295 – 295kW GF300 – 300kW

[1] The type-testing approach enables testing laboratories to provide assurance that all boilers in a given range meet the air quality requirements, without needing to specifically test each boiler.

3. FUELS	
a) Types of fuels used when testing *(Where relevant, the fuel should be classified according to EN303-5, referencing the relevant EN14961 standard for **specific classification** (superseded by EN17225). We don't expect broader categories such as 'beech'.*	Woodchip – (EN ISO 17725-4: 2021, Class A2) Ash Content: 0.3 w-% Dry Volatile Matter: 84.3 w-% Dry Fixed Carbon: 15.4 w-% Dry Total Sulphur: <0.01 w-% Dry Chlorine: 0.02 w-% Dry Carbon: 51.9 w-% Dry Hydrogen: 6.13 w-% Dry Nitrogen: 0.17 w-% Dry Net CV: 15.949 MJ/Kg
b) Based on the testing, list the range of fuels that can be used in compliance with the emission limits of 30 grams per gigajoule (g/GJ) net heat input for particulate matter (PM), and 150 g/GJ net heat input for oxides of nitrogen (NOx) *(Where relevant, the fuel should be classified according to EN303-5, referencing the relevant EN14961 standard for **specific classification** (superseded by EN17225). We don't expect broader categories such as 'beech'.*	Woodchip – (EN ISO 17725-4: 2021, Class A2, B1 & B2)
c) Moisture content of the fuel used during testing. (If multiple fuel types have been tested state all.)	Woodchip - (EN ISO 17725-4: 2021, Class A2) – 14.2% (M35)
d) Maximum allowable moisture content* of fuel that can be used with the certified plant(s) that ensures RHI emission limits are not exceeded. **This value may be obtained from ranges specified in relevant EN14961 standard for specific fuel classifications or EN303-5 when not applicable. Different fuel types should state different maximum allowable moisture contents.*	Woodchip (EN ISO 17725-4: 2021) a) Class A2 – 35% b) Class B1 & B2 – 40%

4. TESTS	
Confirm which requirements the emissions of NOx and PM have been tested in accordance with. **Either 4a or 4b must be confirmed to be a valid RHI certificate.**	
a) **Was the testing carried out in accordance* with all of the provisions relevant to emissions of PM and NOx in either BS EN 303-5:1999 or BS EN 303-5:2012?**[2] **It is **not** a requirement that the tested plant must be within the scope of one of these standards, as long as the test lab can confirm that **all of the relevant provisions** were followed appropriately*	BS EN 303-5:1999: not applicable BS EN 303-5:2012: not applicable
b) **Was the testing carried out in accordance with <u>all</u> of the following requirements?** (i) - EN 14792:2005 in respect of NOx emissions - EN 13284-1:2002 or ISO 9096:2003 in respect of PM emissions[3] (ii) emissions of PM represent the average of at least three measurements of emissions of PM, each of at least 30 minutes duration (iii) the value for NOx emissions is derived from the average of measurements made throughout the PM emission tests.	Yes Yes Yes
c) Please confirm the plant was tested at ≥85% of the installation capacity of the plant.	Yes
d) Please confirm the test shows that emissions from the plant were no greater than 30 g/GJ PM and 150 g/GJ NOx.	Yes
e) Measured* emissions of PM in **g/GJ** net heat input **This average value should be from the test confirmed in 4c* *Results from partial load tests are not required.* *This value must be in the specified units.*	27.2g/GJ – Wood Chips
f) Measured* emissions of NOx in **g/GJ** net heat input **This average value should be from the test confirmed in 4c.* *Results from partial load tests are not required.* *This value must be in the specified units.*	34.6g/GJ – Wood Chips

Note A: If details from a previously issued certificate or an original test report are being transferred to this RHI emission certificate template, please note that this document must be **issued by the testing laboratory** as a separate certificate. The issue date and certificate reference number should be in relation to *this* certificate produced using the RHI template, not the issue date and reference number of the original certificate or test report.

[2] BS EN303-5:1999 and 2012 explain what should be measured and when.
[3] These standards explain how to make the PM and NOx measurements.

Note B: If you are including multiple tested plants on one certificate, please ensure that all sections are completed for each tested plant, and are laid out such that it is clear which details relate to which tested plant. If a type-testing range is included as well, please show clearly which type-testing range relates to which tested plant(s), following the type-testing range ratio rules outlined in 2g