

# Air Quality Fact Sheet

## Non Domestic Renewable Heat Incentive

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### What are the new air quality requirements?

If you are applying for the RHI on or after 24 September 2013 with a biomass boiler (including CHP systems), your boiler must have either a RHI emission certificate or an environmental permit. The purpose of this requirement is to ensure that emissions from biomass boilers do not exceed a maximum level of particulate matter (PM) and oxides of nitrogen (NO<sub>x</sub>). For RHI emission certificates, the maximum permitted emissions are 30 grams per gigajoule (g/GJ) net heat input for PM and 150 g/GJ for NO<sub>x</sub> (expressed as NO<sub>2</sub>). Environmental permits also normally include emissions limits however these vary depending on the boiler in question. Biomass boilers that do not have a RHI emission certificate or an environmental permit will be ineligible for the RHI.

### When do the new air quality requirements apply from?

The air quality requirements apply to applications made after the date the regulations come in to force which is planned to be 24<sup>th</sup> September 2013.

### Who do the new air quality requirements apply to?

The air quality requirements apply to you if your application for the RHI was submitted on or after 24<sup>th</sup> September 2013.

If you were a participant in the RHI before 24<sup>th</sup> September 2013 and you apply for additional capacity for your boiler on or after 24<sup>th</sup> September 2013, your boiler's additional capacity will also need to meet the air quality requirements.

If you received preliminary accreditation before 24<sup>th</sup> September 2013 your boiler will not need to comply with the air quality requirements.

### How do I comply with the air quality requirements?

If these air quality requirements apply to you, your RHI application must contain either an RHI emission certificate with the specific information detailed in the regulations and shown in the example certificate attached, or where appropriate, a relevant environmental permit<sup>1</sup>. Ofgem needs these documents so they can verify whether your biomass boiler complies with the air quality requirements.

To avoid delays to your accreditation it is important that your RHI emission certificate contains all the information in the example RHI emission certificate below.

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<sup>1</sup> A relevant environmental permit for an RHI installation is a permit for an Energy or a Waste activity as defined in Schedule 2 of the Environmental Permitting Regulations 2010 (England and Wales) as amended, and Schedule 1 of Pollution Prevention and Control (Scotland) Regulations 2012 as amended. In addition, activities defined as small waste incineration or co-incineration plant (Schedule 13A of Environmental Permitting Regulations 2007 (as amended by 2013 Environmental Permitting Regulations) which meet the requirements of the RHI scheme may be relevant. It is not intended to apply to associated activities. Depending on the circumstances of its installation and fuel use, it is conceivable that the same model of boiler would not always require a permit and so may require a RHI emissions certificate.

If you provide an incomplete certificate Ofgem will contact you asking you to resubmit the certificate with the missing information included. Therefore to help avoid delays in your accreditation process we suggest checking with your installer, or the manufacturer of your boiler, that your boiler's RHI emission certificate has all the information required.

If you are providing an environmental permit for your biomass boiler Ofgem will verify it is a valid permit.

## **Why do you ask if the test laboratory is accredited to ISO 17025?**

Any emissions testing carried out after the enforcement of these regulations will need to be done by a test house accredited to ISO 17025. In the case where a boiler has been tested and certificated prior to the enforcement of these regulations it is not mandatory for the test house to have been accredited to this standard.

## **What is a type testing range?**

The type testing range approach has been chosen to avoid the need to test emissions from each model in a range of closely related designs of boiler. A type testing range is a range of different size boilers of the same make and family of designs. Boilers in a type testing range only show differences in design relating to the scale of the appliance rather than operating principle or the combustion chamber design. As a result the test house is able to certify that the boilers will have similar emissions of pollutants. Accordingly, boilers within the range may not need to be tested individually.

Where tests are used to certify results for a range of boilers, the smallest and largest boilers will need to be tested, and intermediate boilers may also need to be tested. Testing must ensure that the largest gap between boilers for which test reports are provided is either:

- where the smallest boiler is less than 500kW, a ratio of 2:1 to the next boiler
- or if greater or equal to 500kW, a difference in rated thermal input of 500kW.

This is done to provide additional assurance that boilers within the 2:1 ratio will meet the air quality requirements.

Note that for boilers under or equal to 500kW output, this requirement is different to the type-testing approach described in EN303-5 for boilers in a product range. However, it will in effect lead to a similar number of boilers being tested as an EN303-5 product range can cover several type testing ranges.

The certificate should identify which boilers have been tested to determine that the emissions of the model which is being certified are acceptable.

## **Does testing need to be completed on the whole model range?**

No, the type testing range may, at the discretion of the organisation marketing the appliance(s), only including those boilers that are planned to be targeted at claiming the RHI.

## **Will there be a change to my ongoing obligations?**

Yes, you will need to make sure that you use the right fuel for your boiler and that you use your boiler correctly. The type of fuel you can use will be specified in the certificate. Your boiler handbook will explain how to set the controls correctly to minimise emissions to the air. You will also need to make sure that the fuel you use has the right moisture content. Using fuel with excessive moisture content could result in emissions above the permitted limits.

## What about the domestic RHI?

The domestic RHI scheme, due to launch in spring 2014, will introduce air quality requirements similar to those set out in this factsheet for new applicants. Further information specifically relating to the domestic scheme will be published before the launch of the scheme.

## Example RHI emission certificate

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 * <i>*if different, include details of both</i>	
b) Name and signature of the person authorised by the testing laboratory to issue the certificate	Name:
	Signature:
c) Date of issue of this certificate, together with certificate reference number for this certificate <i>*Please see Note A</i>	Date: <i>dd/mm/yyyy</i>
	Certificate reference number:
	<i>Optional: reference number of original test report on which this certificate is based:</i>
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 <i>(if testing conducted on or after 24 September 2013, the testing laboratory <b>must be</b> BS EN ISO/IEC 17025:2005 accredited at the time of testing)</i>	Date: <i>dd/mm/yyyy</i>
	Accreditation number:

2. PLANT - Please see Note B	
a) Name of the plant tested	
b) Model of the plant tested* <i>*Please ensure this is the same as in the manufacturer's documentation and boiler nameplate</i>	
c) Manufacturer of the plant tested	
d) Installation capacity* of the <b>tested</b> plant in kilowatts (kW) <i>*The total installed peak heat output capacity</i>	
e) Is the plant a <u>manually stoked, natural draught</u> plant? (without a fan providing forced or induced draught)	yes/no
f) (i) Date the plant was tested* (ii) Please confirm that NO <sub>x</sub> and PM have been tested on the same occasion <i>*This is in reference to the emissions testing for PM and NO<sub>x</sub>, 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</i>	<i>dd/mm/yyyy</i>  yes/no

date with details.	
<p>g) Please list all the plants in the type-testing range* of the tested plants to which the certificate applies, if any.<sup>2</sup> Please include the <b>installation capacity</b> of each model.</p> <p><i>*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.</i></p>	

<b>3. FUELS</b>	
<p>a) Types of fuels used when testing (where relevant, this should include how the fuel has been processed and based if relevant on classifications from EN14961 or EN303-5. eg. wood pellets/compressed wood, wood chip. We don't expect broader categories such as 'beech', 'wood'.)</p>	
<p>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, this should include how the fuel has been processed and based if relevant on classifications from EN14961 or EN303-5. eg. wood pellets/compressed wood, wood chips. We don't expect broader categories such as 'beech', 'wood')</p>	
c) Moisture content of the fuel used during testing	xx%
<p>d) Maximum allowable moisture content* of fuel that can be used with the certified plant(s) that ensures RHI emission limits are not exceeded. <i>*This value may be obtained from ranges specified in EN 303-5 based on the fuel type(s) tested</i></p>	yy%

<b>4. TESTS</b>	
Confirm which requirements the emissions of NOx and PM have been tested in accordance with. <b><u>Either 4a or 4b must be confirmed to be a valid RHI certificate.</u></b>	
<p>a) <b>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?</b><sup>3</sup> <i>*It is <b>not</b> 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 <b>all of the relevant provisions</b> were followed appropriately</i></p>	yes/no
b) <b>Was the testing carried out in accordance with <u>all</u> of the following requirements?</b>	

<sup>2</sup> 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.

<sup>3</sup> BS EN303-5:1999 and 2012 explain what should be measured and when.

<sup>3</sup> These standards explain how to make the PM and NOx measurements.

<p>(i) - EN 14792:2005 in respect of NOx emissions - EN 13284-1:2002 or ISO 9096:2003 in respect of PM emissions<sup>3</sup></p> <p>(ii) emissions of PM represent the average of at least three measurements of emissions of PM, each of at least 30 minutes duration</p> <p>(iii) the value for NOx emissions is derived from the average of measurements made throughout the PM emission tests.</p>	yes/no
<p>c) Please confirm the plant was tested at <math>\geq 85\%</math> of the installation capacity of the plant.</p>	yes/no
<p>d) Please confirm the test shows that emissions from the plant were no greater than 30 g/GJ PM and 150 g/GJ NOx.</p>	yes/no
<p>e) Measured* emissions of PM in <b>g/GJ</b> net heat input <i>*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.</i></p>	
<p>f) Measured* emissions of NOx in <b>g/GJ</b> net heat input <i>*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.</i></p>	

**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.

**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.