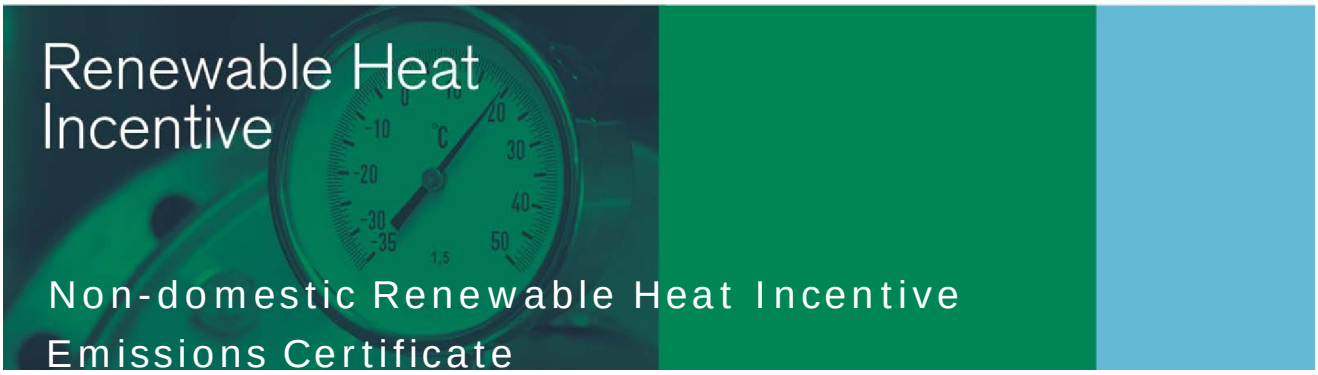
ofgem e-serve Making a positive difference for energy consumers



This certificate provides evidence that the tested boiler meets the air quality requirements of the non-domestic Renewable Heat Incentive (RHI). It must be issued by a testing laboratory. Applicants applying for the RHI with biomass boilers must submit a certificate with their application, or alternatively, an environmental permit.

1. TEST HOUSE	
a) name and address of testing laboratory	Müller–BBM GmbH Branch Office Stuttgart Carl-Zeiss-Strasse 25 72770 Reutlingen Germany
b) name and signature of the person authorised by the testing laboratory to issue the certificate	Dipl.-Ing. (FH) Jochen Eder Jochen Eder
c) date of issue of the certificate together with certificate reference number	date: 2013/12/02 reference number: M107386/8
d) if testing laboratory is accredited to ISO 17025, date of accreditation and accreditation number	accredited to ISO 17025 since 2001/07/31 valid to 2014/12/21 accreditation number: DGA-PL-2465.20

2. PLANT	
a) name of the plant tested	Ökotherm C198 Biomasss boiler
b) model of the plant tested	Ökotherm C198 (MS) Biomass boiler
c) manufacturer of the plant tested	A.P. Bioenergietechnik GmbH
d) installation capacity of the plant in kilowatts (kW)	198 kW
e) is the plant a manually stoked, natural draught plant? (that is, without a fan providing forced or induced draught)	no
f) the date the plant was tested	16/8/2013
g) list of all the plants in the type-testing range of plants to which the certificate applies, if any[1]	C198 (MS): 198 kW

[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	Woodchip: • Grade A ''Clean'' woodchip in accordance to BSI PAS 2012 Grasses / Miscanthus
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) *(based if relevant on classifications from EN14961 or EN303-5)*	Woodchip: • Virgin • Grade A ''Clean'' woodchip in accordance to BSI PAS 2012 Woodchip A1, A2, B1 & B2 in accordance to EN14961-4, 2011 Herbaceous Biomass EN 14961: 2010 Table 1 2.1.1.2 2.1.2.2 2.1.1.4 2.1.3.2 2.1.2.1 2.1.5.2
c) moisture content of the fuel used during testing	Woodchip: • Grade A ''Clean'' woodchip in accordance to BSI PAS 2012 = 7,7% Grasses / Miscanthus=10,0%
d) maximum moisture content of the fuel which can be used so as to ensure that the emission limits are not exceeded	Woodchip: • Grade A ''Clean'' woodchip in accordance to BSI PAS 2012 = 35% Grasses / Miscanthus = 20%

4. TESTS	
a) if the plant is 500kW or lower, and BS EN 303-5:1999 or EN 303-5:2012[2] applies to it, please confirm: - tests were conducted to whichever standard was current at the time of testing. *(please circle the applicable standard)*	BS EN 303-5:2012: yes
b) if the plant is 500kW or lower, and BS EN 303-5:1999 or BS EN 303-5:2012 do not apply to it, please confirm: - emissions of PM represent the average of at least three measurements, each of at least 30 minutes duration and; - the value for NOx emissions is derived from the mean of measurements made throughout the PM tests.	 no no
c) if the plant is 500kW or higher, please confirm: - emissions of PM represent the average of at least three measurements, each of at least 30 minutes duration and; - the value for NOx emissions is derived from the mean of PM measurements made throughout the PM tests.	 not applicable not applicable
d) please confirm the tests were conducted to: - EN 14792:2005 in respect of NOx, and; - EN 13284-1:2002 or ISO 9096:2003 in respect of PM[3]	 yes yes
e) please confirm the plant tested at ≥85% of its rated output	yes
f) please confirm the tests show that emissions were no greater than 30 g/GJ PM and 150 g/GJ NOx	yes
g) measured emissions of PM in g/GJ net heat input	Woodchip: • Grade A ''Clean'' woodchip in accordance to BSI PAS 2012 = 13.5 g/Gj Grasses / Miscanthus = 17.6 g/GJ
h) measured emissions of NOx in g/GJ net heat input	Woodchip: • Grade A ''Clean'' woodchip in accordance to BSI PAS 2012 = 64.2 g/Gj Grasses / Miscanthus = 116.4 g/GJ

[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.