

Boilers and Hot Water Heaters

Summary of proposed Triple E eligibility criteria changes.

To increase the ease of product submission and modernisation of test data requirements, the supporting documentation required to demonstrate Triple E compliance for Boilers and Hot Water Heaters will include for EU Regulations implementing the Ecodesign Directive.

- Condition 7 - Minimum performance criteria is measured and calculated in line with EU regulations (EU) 811/2013 to 814/2013

The proposed eligibility criteria document is contained on the following pages.

Please follow this [link](#) to view the currently published eligibility criteria.

Triple E Eligibility Criteria

Category: Heating and Electricity Provision

Technology: Boilers and Water Heaters

Boilers and Water Heaters are defined as advanced equipment which provide heating and/or hot water primarily for on-site use.

Hot Water Generation equipment is considered to include the following:

Instantaneous condensing gas fired water heaters.

Instantaneous gas fired water heaters combust fuel to provide hot water on demand usually for sanitary purposes, whereby the water is heated directly by the unit.

Boilers

Boilers combust fuel to generate hot water which can be used to provide heating through a closed loop hot water system delivery medium. Such boilers can also indirectly heat water for sanitary purposes for on-site use. The equipment consists of the boiler and/or burner.

Boilers and Water Heaters Eligibility criteria:

In order to be included on the Triple E Register, the specific boiler and hot water heating equipment must meet *all* of the relevant requirements set out below.

***Note:** Supporting documentation that clearly demonstrates Triple E compliance according to the conditions below will be required as part of the Triple E checking process. Detailed information on the types of documents accepted can be found in the separate Supporting Documentation guidelines.*

General Eligibility Criteria

(Applicable to all boiler and hot water heater equipment)

No.	Condition
1.	Condensing only
2.	All equipment and/or components must be CE marked as required by the specific EU Directive(s)

Hot Water Heater - specific Eligibility Criteria

(To be met in addition to the general eligibility criteria)

No.	Condition
3.	<p>Net Thermal Efficiency demonstrated when tested at full load:</p> <ul style="list-style-type: none"> Storage and non-storage instantaneous water heating types must be $\geq 102\%$ Non storage boiler types must be $\geq 93\%$

4.	<ul style="list-style-type: none"> Gas condensing water heaters must comply with all the requirements in the standard IS EN 89 “Gas-fired storage water heaters for the production of domestic hot water”, or scientific equivalent. Gas condensing water heaters with atmospheric burners must comply with DIN EN 26 “Gas-fired instantaneous water heaters for sanitary uses production, fitted with atmospheric burners (Including Corrigendum 1998)”, or scientific equivalent.
5.	Modulating output – non-storage types must have the capability to vary their hot water output in response to changes in water demand, without initiating a purge cycle.
6.	Balanced flue on units with a rated output less than 70kW.

Boiler - specific Eligibility Criteria

(To be met in addition to the general eligibility criteria)

No.	Condition																
7.	<p>Meet the performance criteria set out in Table 1 below:</p> <table border="1"> <thead> <tr> <th>Fuel Type</th> <th>Turndown Ratio</th> <th>Test Point (% of Maximum Nominal Input)</th> <th>Net Thermal Efficiency %</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Gas fired or dual fuelled</td> <td rowspan="2">$\geq 4.0:1$</td> <td>30</td> <td>$\geq 108.0\%$</td> </tr> <tr> <td>100</td> <td>$\geq 97.0\%$</td> </tr> <tr> <td rowspan="2">Oil Fired</td> <td rowspan="2">$\geq 3.33:1$</td> <td>30</td> <td>$\geq 101.0\%$</td> </tr> <tr> <td>100</td> <td>$\geq 95.0\%$</td> </tr> </tbody> </table> <p>‘\geq’ means “greater than or equal to”</p> <p>Net thermal efficiency test data must be presented to 1 decimal place. A condensing oil boiler with a net thermal efficiency of 94.5% at 100% of its maximum rated output would be deemed to be a fail.</p>	Fuel Type	Turndown Ratio	Test Point (% of Maximum Nominal Input)	Net Thermal Efficiency %	Gas fired or dual fuelled	$\geq 4.0:1$	30	$\geq 108.0\%$	100	$\geq 97.0\%$	Oil Fired	$\geq 3.33:1$	30	$\geq 101.0\%$	100	$\geq 95.0\%$
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Oil Fired	$\geq 3.33:1$	30	$\geq 101.0\%$														
		100	$\geq 95.0\%$														

8.	<p>Incorporated burners must have microprocessor-based controls that are capable of continuously modulating burner output in response to measured temperature or pressure values over a turn-down ratio as appropriate below:</p> <ul style="list-style-type: none"> • Gas or dual fuelled: ≥ 4.0 to 1 • Oil: ≥ 3.33 to 1 <p>Note: Turndown is the ratio between a boiler's maximum and minimum output. Depending on the burner's design, it may have a turndown ratio of 4 to 1 indicates adjustment in the range 25% to 100%.</p>
9.	Standing losses – 2% or less of boiler rated output.

----- *End of Triple E eligibility criteria* -----

Please see next section for guidance on:

- 1. Technical details required in product submission**
- 2. Supporting documentation required**

Guidance on product details and supporting documentation

NOTE: The following information is not part of the official criteria document published within the relevant Statutory Instrument. It has been added here for guidance purposes only in order to help you to provide (a) product details and (b) the required supporting documentation.

All information contained in this guidance document is subject to change without notice.

Technical information required in product submission

The following are the specific technical values required as part of the product submission for this technology:

Product type

As part of the product submission you must first select which type your product is. Only one type can be chosen per product.

Thermal output

The thermal output in kW of the product is required. It must be entered as whole number only (do not include kW symbol). There should also be no spaces or full stops after the number submitted.

Thermal efficiency

The efficiency (%) of the product is required as a value . It must be entered as number only (do not include units). There should also be no spaces or full stops after the number submitted. The figure must comply with the criteria requirements for minimum efficiency values.

Supporting documentation required

Described below is the list of documents that are accepted as proof of compliance for the specific conditions.

Note: This information will only be requested AFTER you submit your product's basic details online

Important Notes to Product Providers

Please ensure that you read the "Important Notes to Product Providers" section at the end of this document prior to submitting documentation.

General Eligibility Criteria

No.	Condition	Supporting Documentation Requirement
1.	Condensing only	Official and published manufacturer's technical data sheet or brochure that demonstrates the requirements of the condition.
2.	All equipment and/or components must be CE marked as required by the specific EU directive(s)	<p>Official and published manufacturer's technical data sheet or brochure that demonstrates CE marking compliance.</p> <p><u>OR</u> A copy of an official signed declaration on headed paper which confirms CE marking compliance.</p> <p>Official declarations should explicitly state the product for which CE marking is being confirmed (i.e. do not provide a letter simply stating general compliance with the relevant Triple E Condition).</p> <p>Where a document is used to demonstrate conformance for a number of products or range of products it should clearly specify each individual product covered by that document.</p>

Hot Water Heater - specific Eligibility Criteria:

No.	Condition	Supporting Documentation Requirement
3.	<p>Net Thermal Efficiency tested at full load:</p> <ul style="list-style-type: none"> • Storage and non-storage instantaneous types must be $\geq 102\%$ • Non storage circulator types must be $\geq 93\%$ 	Official and published manufacturer's technical data sheet or brochure that demonstrates the requirements of the condition.

No.	Condition	Supporting Documentation Requirement
.	<ul style="list-style-type: none"> ▪ Gas condensing water heaters must comply with all the requirements in the standard EN 89 “Gas-fired storage water heaters for the production of domestic hot water”, or scientific equivalent. ▪ Gas condensing water heaters with atmospheric burners must comply with DIN EN 26:2015 “Gas-fired instantaneous water heaters for the production of domestic hot water, fitted with atmospheric burners (Including Corrigendum 1998)”, or scientific equivalent. 	<p><u>For gas condensing water heaters:</u> Accredited certification that the equipment complies with all the requirements of the named standard.</p> <p>OR Evidence of official testing by manufacturer or independent test lab carried out according to the principles outlined in the named standard. Test reports should be of the format described in the ‘Important Notes to Product Providers’ section of this document. See note on ‘Scientific Equivalence’ in the ‘Important Notes to Product Providers’ section at end of this document.</p> <p><u>For gas condensing water heaters with atmospheric burners:</u> Accredited certification that the equipment complies with the named standard.</p>
5.	<p>Modulating output – non-storage types must have the capability to vary their hot water output in response to changes in water demand, without initiating a purge cycle.</p>	<p>Official and published manufacturer’s technical data sheet or brochure that demonstrates the requirements of the condition.</p>

6.	Balanced flue on units with a rated output less than 70kW.	Official and published manufacturer's technical data sheet or brochure that demonstrates the requirements of the condition.
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Boiler - specific Eligibility Criteria:

No.	Condition	Supporting Documentation Requirement
7.	Meet the performance criteria set out in Table 1 above.	<p>Accredited certification that the equipment has been tested in accordance with the named standards that apply to the equipment.</p> <p>OR</p> <p>Evidence of official testing by manufacturer or independent test lab carried out according to the principles outlined in the named standards. Test reports should be of the format described in the 'Important Notes to Product Providers' section of this document.</p> <p>Accepted Standards:</p> <ul style="list-style-type: none"> • EN 15502-1:2012 Gas-fired heating boilers - Part 1:General requirements and tests; • EN 15502-2-1 "Gas-fired central heating boilers - Part 2-1: Specific standard for type C appliances and type B2, B3 and B5 appliances of a nominal heat input not exceeding 1 000 kW (includes Amendment 1:2016)" • EN 15502-2-2 "Gas-fired central heating boilers - Part 2-2: Specific standard for type B1 appliances" • DIN EN 13836 "Gas-fired central heating boilers - Type B boilers of nominal heat input exceeding 300 kW, but not exceeding 1000 kW" • EN 15420:2005 'EN 15420. Gas-fired central heating boilers. Type C boilers of nominal heat input exceeding 70 kW, but not exceeding 1000 kW' (CEN document code 06/30144913 DC) • EN 303-3:1999 "Heating boilers Gas-fired central heating boilers. Assembly comprising a boiler body and a forced draught burner" • DIN EN 303-4:1999 "Heating boilers - Part 4: Heating boilers with forced draught burners - Special requirements for boilers with forced draught oil burners with outputs up to 70 kW and a maximum operating pressure of 3 bar - Terminology, special requirements, testing and marking" • DIN EN 303-7: "Heating boilers - Part 7: Gas-fired central heating boilers equipped with a forced draft burner of nominal heat output not exceeding 1 000 kW"

		<ul style="list-style-type: none"> • DIN EN 304 ‘Heating boilers — Test code for heating boiler for atomising oil burners.’ • DIN EN 12953 “Shell boilers — Part 11: Acceptance tests”. • DIN EN 12952-15 “Water-tube boilers and auxiliary installations. Acceptance tests”. <p>See note on ‘Scientific Equivalence’ in the ‘Important Notes to Product Providers’ section at end of this document.</p> <p>See note on ‘Ecodesign Directive’ in the ‘Important Notes to Product Providers’ section at end of this document. EU Regulations implementing the Ecodesign Directive set minimum standards for the efficiency of energy using products that can be placed on the market. Products should also comply with these standards as they come into effect.</p>
No.	Condition	Supporting Documentation Requirement
8.	<p>Incorporated burners must have microprocessor-based controls that are capable of continuously modulating burner output in response to measured temperature or pressure values over a turn-down ratio as appropriate below:</p> <ul style="list-style-type: none"> ▪ Gas or dual fuelled: ≥ 4.0 to 1 ▪ Oil: ≥ 3.33 to 1 	Official and published manufacturer’s technical data sheet or brochure that demonstrates the requirements of the condition.
9.	Standing losses – 2% or less of boiler rated output.	Official and published manufacturer’s technical data sheet or brochure that demonstrates the requirements of the condition.

Important Notes to Product Providers

General

There should be a clear link between all supporting documentation supplied and the product being submitted. This will typically take the form of a product code or product name that can be cross referenced between the submitted product and relevant supporting documentation. If product codes / names have been changed since publication of the supporting documentation, then official evidence of this must be provided with the supporting documentation supplied.

Any deviation from these requirements will result in the supporting documentation not being considered adequate for the purposes of demonstrating compliance with the criteria conditions. This will in turn delay the submission and/or result in the product not being considered eligible.

Where the Triple E criteria or help documentation references compliance to appropriate rather than specific standards, the onus is on the product provider to ensure that supporting documentation supplied references recognised standards that apply to the submitted product, i.e. the product must be covered under the scope of a recognised standard.

If any product submitted is later found not to meet the performance or specification criteria, then this product will cease to be considered eligible for the Triple E.

Note: When supplying the supporting documentation through the online process you must ensure that the correct page number(s) of the document is referenced when demonstrating compliance with the relevant condition. An explanatory note should also be given where more than one page number is referenced.

Test Report

A test report must include an outline of the complete test, including:

- √ Introduction
- √ Details on test conditions
- √ The specific model details of the product tested
- √ The steps taken in the test
- √ The results
- √ Graphical representations
- √ Conclusion

All documents should be on headed paper and the document should be officially signed off.

All documentation must be in English or include adequate translation.

Certification

Where certificates are provided, all tests must be carried out by an organisation that is accredited by a national accreditation body recognised via the European Cooperation for Accreditation (preferred) or the International Accreditation Forum.

All documentation must be in English or include adequate translation.

Scientific Equivalence

Some Triple E criteria conditions allow for scientifically equivalent tests and/or standards to be used. In the event that a product has not been designed, manufactured or tested to the specific standard named, then documentation relating to an equivalent internationally recognised standard may be used (where the phrase 'Or scientific equivalent' is included in the Triple E condition or help documentation). In such applications, the onus will be on the product submitter to demonstrate satisfactory equivalence of the standards. However, submissions which reference such supporting documentation may take longer to process, and if the product provider does not provide satisfactory evidence of equivalence, then the product will not be considered eligible for the Triple E register.

All documentation must be in English or include adequate translation.

Note: Where specific standards are cited in a condition or in the Triple E help documentation, then documentation demonstrating that the relevant products have been designed, manufactured or tested to these specific standards is preferred. Scientific equivalence is considered the exception rather than the norm.

Ecodesign Directive

EU Regulations implementing the Ecodesign Directive set minimum standards for the efficiency of energy using products that can be placed on the market. Products should also comply with these standards as they come into effect. Current regulations are listed at <https://ec.europa.eu/energy/en/topics/energyefficiency/energy-efficient-products>

S.I. No. 625/2020 - European Union (Ecodesign Requirements for Certain Energy-related Products) (Amendment) Regulations 2020.

These Regulations apply to boilers or appliances fired by liquid or gaseous fuels with a rated output of no less than 4 kW and no more than 400 kW to which the Directive applies.

Products with a thermal input greater than or equal to 1MW, and less than 50MW, must comply with the minimum requirements as stated in Annex II of the Medium Combustion Plant Directive (EU) 2015/2193[3]

Commission Delegated Regulations (EU) No 811 to 814 of 2013 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to the energy labelling and Eco-design of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar device where relevant also applies.