

## Accelerated Capital Allowances Eligibility Criteria

### **Category: Heating and Electricity Provision**

### **Technology: Boilers and Water Heaters**

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

**Hot Water Generation equipment is considered to include the following:**

#### Instantaneous gas fired water heaters

Instantaneous gas fired water heaters combust fuel to provide hot water on demand, whereby the water used is heated directly by the unit. They also have the facility to recover heat from the flue gases to maximise the heat output.

#### Boilers

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

## **Eligibility criteria**

In order to be included on the ACA Specified List, the specific boiler and hot water heater equipment must meet *all* of the relevant requirements set out below.

***Note:** Supporting documentation that clearly demonstrates ACA compliance according to the conditions below will be required as part of the ACA 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.	Net Thermal Efficiency tested at full load: <ul style="list-style-type: none"> <li>• Storage &amp; non-storage instantaneous types must be <math>\geq 102\%</math></li> <li>• Non storage circulator types must be <math>\geq 93\%</math></li> </ul>

4.	<ul style="list-style-type: none"> <li>▪ 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.</li> <li>▪ Gas condensing water heaters with atmospheric burners must comply with EN 26/A1 “Gas-fired instantaneous water heaters for sanitary uses production, fitted with atmospheric burners (Including Corrigendum 1998)”, or scientific equivalent.</li> </ul>
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">≥ 4.0:1</td> <td>30</td> <td>≥ 108.0%</td> </tr> <tr> <td>100</td> <td>≥ 97.0%</td> </tr> <tr> <td rowspan="2">Oil Fired</td> <td rowspan="2">≥ 3.33:1</td> <td>30</td> <td>≥ 101.0%</td> </tr> <tr> <td>100</td> <td>≥ 95.0%</td> </tr> </tbody> </table> <p>'&gt;=' 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	≥ 4.0:1	30	≥ 108.0%	100	≥ 97.0%	Oil Fired	≥ 3.33:1	30	≥ 101.0%	100	≥ 95.0%
Fuel Type	Turndown Ratio	Test Point (% of Maximum Nominal Input)	Net Thermal Efficiency %														
Gas fired or dual fuelled	≥ 4.0:1	30	≥ 108.0%														
		100	≥ 97.0%														
Oil Fired	≥ 3.33:1	30	≥ 101.0%														
		100	≥ 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"> <li>▪ Gas or dual fuelled: ≥4.0 to 1</li> <li>▪ Oil: ≥3.33 to 1</li> </ul> <p>Note: Turn-down ratio is a measure of the range within which the burner can be adjusted. Turn down 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 ACA 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 as a value for the product submission. 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 for the product submission. 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><b>OR</b></p> <p>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 ACA 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.	Net Thermal Efficiency tested at full load: <ul style="list-style-type: none"> <li>•Storage &amp; non-storage instantaneous types must be <math>\geq 102\%</math></li> <li>•Non storage circulator types must be <math>\geq 93\%</math></li> </ul>	Official and published manufacturer's technical data sheet or brochure that demonstrates the requirements of the condition.

No.	Condition	Supporting Documentation Requirement
4.	<ul style="list-style-type: none"> <li>▪ 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.</li> <li>▪ Gas condensing water heaters with atmospheric burners must comply with EN 26/A1 “ Gas-fired instantaneous water heaters for sanitary uses production, fitted with atmospheric burners (Including Corrigendum 1998)”, or scientific equivalent.</li> </ul>	<p><u>For gas condensing water heaters:</u></p> <p>Accredited certification that the equipment complies with all the requirements of the named standard.</p> <p><b>OR</b></p> <p>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.</p> <p>Acceptable Standard: EN 89 “Gas Fired Storage Water Heaters for the production of domestic Hot Water”.</p> <p>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></p> <p>Accredited certification that the equipment complies with the named standard.</p> <p><b>OR</b></p> <p>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.</p> <p>Acceptable Standard: EN 26/A1 “Gas-fired instantaneous water heaters for sanitary uses production, fitted with atmospheric burners (Including Corrigendum 1998)”.</p> <p>See note on ‘Scientific Equivalence’ in the ‘Important Notes to Product Providers’ section at end of this document.</p>
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.	Official and published manufacturer’s technical data sheet or brochure that demonstrates the requirements of the condition.
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.

**Boiler - specific Eligibility Criteria:**

No.	Condition	Supporting Documentation Requirement																
7.	<p>Meet the performance criteria set out in Table 1 below:</p> <table border="1" data-bbox="264 312 889 855"> <thead> <tr> <th data-bbox="264 312 392 525">Fuel Type</th> <th data-bbox="392 312 560 525">Turndown Ratio</th> <th data-bbox="560 312 728 525">Test Point (% of Maximum Nominal Input)</th> <th data-bbox="728 312 889 525">Net Thermal Efficiency %</th> </tr> </thead> <tbody> <tr> <td data-bbox="264 525 392 700" rowspan="2">Gas fired or dual fuelled</td> <td data-bbox="392 525 560 700" rowspan="2">&gt;= 4.0:1</td> <td data-bbox="560 525 728 622">30</td> <td data-bbox="728 525 889 622">&gt;= 108.0%</td> </tr> <tr> <td data-bbox="560 622 728 700">100</td> <td data-bbox="728 622 889 700">&gt;= 97.0%</td> </tr> <tr> <td data-bbox="264 700 392 855" rowspan="2">Oil Fired</td> <td data-bbox="392 700 560 855" rowspan="2">&gt;= 3.33:1</td> <td data-bbox="560 700 728 796">30</td> <td data-bbox="728 700 889 796">&gt;= 101.0%</td> </tr> <tr> <td data-bbox="560 796 728 855">100</td> <td data-bbox="728 796 889 855">&gt;= 95.0%</td> </tr> </tbody> </table> <p data-bbox="264 868 757 900">'&gt;=' means 'greater than or equal to'</p> <p data-bbox="264 912 889 1038">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	>= 4.0:1	30	>= 108.0%	100	>= 97.0%	Oil Fired	>= 3.33:1	30	>= 101.0%	100	>= 95.0%	<p>Accredited certification that the equipment has been tested in accordance with the named standards that apply to the equipment.</p> <p><b>OR</b></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 data-bbox="965 533 2069 1417" style="list-style-type: none"> <li>• BS EN 625:1996 'Gas-fired central heating boilers. Specific requirements for the domestic hot water operation of combination boilers of nominal heat input not exceeding 70 kW'</li> <li>• BS EN 483:1999+A4:2007 'Gas-fired central heating boilers. Type C boilers of nominal heat input not exceeding 70 kW'</li> <li>• BS EN 677:1998 'Gas-fired central heating boilers. Specific requirements for condensing boilers with a nominal heat input not exceeding 70 kW'</li> <li>• BS EN 13836:2006 'Gas fired central heating boilers. Type B boilers of nominal heat input exceeding 300 kW, but not exceeding 1 000 kW'</li> <li>• BS EN 15417:2006 'Gas-fired central heating boilers. Specific requirements for condensing boilers with a nominal heat input greater than 70 kW but not exceeding 1000 kW'</li> <li>• 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)</li> <li>• BS 845-1:1987 'Methods for Assessing thermal performance of boilers for steam, hot water and high temperature heat transfer fluids — Part 1: Concise procedure'. BS 7190:1989 'Method for assessing thermal performance of low temperature hot water boilers using a test rig'</li> <li>• BS EN 303-3:1999 'Heating boilers — Part 3: Gas-fired central heating boilers — Assembly comprising a boiler body and a forced draught burner'.</li> <li>• BS EN 303-7:2006 'Heating boilers — Part 7: Gas-fired central heating boilers equipped with a forced draught burner of nominal heat output not exceeding 1,000 kW'.</li> <li>• BS EN 304:1992 'Heating boilers — Test code for heating boiler for atomising oil burners' (as amended).</li> <li>• BS EN 12953-11:2003 "Shell boilers — Part 11: Acceptance tests".</li> <li>• BS EN 12952-15:2003 "Water-tube boilers and auxiliary installations. Acceptance tests".</li> </ul> <p>See note on 'Scientific Equivalence' in the 'Important Notes to Product Providers' section at end of this document.</p>
Fuel Type	Turndown Ratio	Test Point (% of Maximum Nominal Input)	Net Thermal Efficiency %															
Gas fired or dual fuelled	>= 4.0:1	30	>= 108.0%															
		100	>= 97.0%															
Oil Fired	>= 3.33:1	30	>= 101.0%															
		100	>= 95.0%															

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"> <li>▪ Gas or dual fuelled: <math>\geq 4.0</math> to 1</li> <li>▪ Oil: <math>\geq 3.33</math> to 1</li> <li>▪ Note: Turn-down ratio is a measure of the range within which the burner can be adjusted. Turn down of 4 to 1 indicates adjustment in the range 25% to 100%.</li> </ul>	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 ACA criteria or help documentation reference 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 ACA.

**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 compliance with the relevant condition is being demonstrated. An explanatory note should also be given where more than one page number is referenced.

### Test Report

A test report must comprise of the following elements:

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, and a 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 ACA 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 ACA 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 ACA. **All documentation must be in English**, or include adequate translation.

**Note:** Where specific standards are cited in a condition or in the ACA 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.

### **Representative testing**

Where test information is required for a range of technically similar products (e.g. configurations of one base product) then in exceptional instances a form of representative testing may be utilised once agreed in advance with SEAI. Such testing is where only representative products are tested from a technically similar group or range of products. Provided a clear correlation can be demonstrated between the tested product and technically similar non-tested product, and that such a correlation clearly demonstrates the compliance of the non-tested product, representative testing may form an acceptable basis for supporting documentation.

**Note:** Where representative testing is used for a group or range of products, if the tested or representative product is removed from the list of eligible products then all related products are also removed.