EU Ecolabel Water-based heaters Commission Decision

User Manual

EU ECOLABEL WATER-BASED HEATERS USER MANUAL

Commission Decision of for the award of the EU Ecolabel for water-based heaters (2014/314/EU)

Contents

Using this manual

This manual guides you through the process of applying for an EU Ecolabel, in accordance with the criteria requirements. The following symbols are used throughout:

⚠ = Notable or important information.

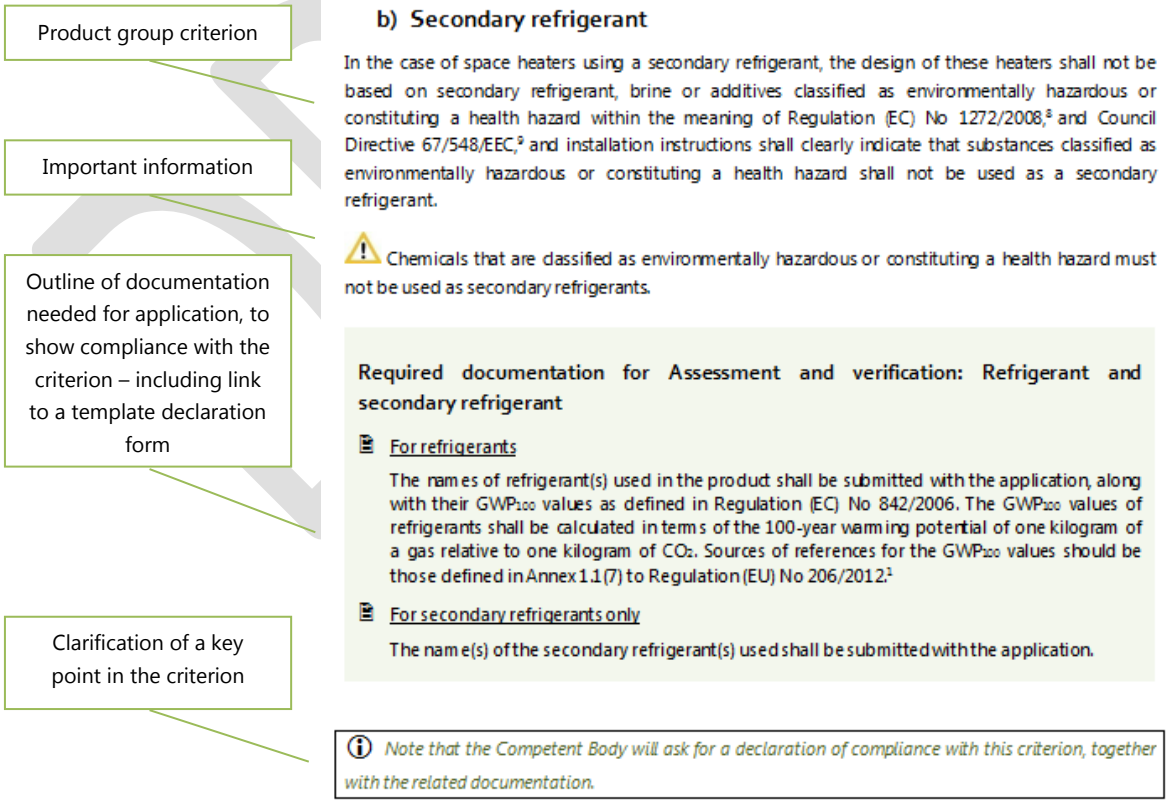
ⓘ = Clarification of a key point.

= Required documentation to verify compliance with criteria, including links to declarations where needed.

The manual is structured as follows:

Part A: General Information – Provides information about the EU Ecolabel (including a summary of the criteria), details of the application process, and answers to frequently asked questions about applying.

Part B: Product Assessment and Verification – Outlines the criteria for water-based heaters set out in the Commission Decision (2014/314/EU). An example from this section is shown below:



Part C: Application Form – This application form should be completed by all applicants.

Part D: Declarations – These declarations are to be completed as part of the application process. The relevant sections of Part B (Product Assessment and Verification) should be referred to when completing these declarations. An example declaration is shown below:

Title and reference to relevant criterion

Declaration, including sections to be completed by the applicant and/or supplier(s).

Information to be completed by the person responsible for this declaration

Declaration: Criterion 11: Plastic parts (Part A)

4. any attached Safety Data Sheets (listed in the table below) are in accordance with Annex II to Regulation (EC) No 1907/2006 for substances or mixtures, and include concentration limits.

Substance(s) or material(s) for which Safety Data Sheets are attached

Responsible person's position:	
Responsible person's signature:	
Date:	
Company Stamp:	

⚠ ***Please read this manual all the way through before completing and submitting the application form or any other documentation.***

Part A: General Information

1 Introduction

This User Manual[1] is for guidance only and is designed to help you apply for the EU Ecolabel for water-based heaters. It includes an outline of all data, tests and documentation that are required to demonstrate compliance.

The basis for the manual is the Commission Decision of 28 May 2014 establishing the ecological criteria for the award of the EU Ecolabel for water-based heaters (2014/312/EU). A copy of the criteria can be found at:

[add link one product group has been added to the Ecolabel page]

Please read the criteria document carefully before filling in the application form!

1.1 Is my product eligible for the EU Ecolabel?

The product group 'water-based heaters' comprises products that are used to generate heat as part of a water-based central heating system, where the heated water is distributed by means of circulators and heat emitters in order to reach and maintain the indoor temperature of an enclosed space such as a building, a dwelling, or a room, at a desired level. The lists below show products which are eligible for the EU Ecolabel, and those that are excluded.

1. The product group 'water-based heaters' **includes** products where:
    a. The heat generator generates heat by means of one or more of the following processes and technologies:
        (1) combustion of gaseous, liquid or solid **fossil fuels**;
        (2) combustion of gaseous, liquid or solid **biomass**;
        (3) use of the **Joule effect** in electric resistance heating elements;
        (4) capture of **ambient heat** from air, water or ground source, and/or waste heat;
        (5) **cogeneration** (the simultaneous generation in one process of heat and electricity);
        (6) **solar** energy (auxiliary);
    b. The maximum output power of the water-based heaters is 400 kW;

[1] This User Manual is for guidance only; it does not have any legal standing and does not, in any way, replace the Commission Decision or any relevant legislation. In case of doubt on specific points in the Manual, please refer directly to the national Competent Body.

c. Combination heaters are included in the scope of this product group, provided that their primary function is to provide space heat.

2. The following products are **excluded**:

   a. heaters whose primary function is to provide hot drinking or sanitary water;

   b. heaters for heating and distributing gaseous heat transfer media such as vapour or air;

   c. cogeneration space heaters with a maximum electrical capacity of 50 kW or above;

   d. space heaters that combine both indirect heating, using water-based central heating system, and direct heating, by direct emission of heat into the room or space where the appliance is installed.

ⓘ *Some examples of eligible products: packages of space heaters (condensing boiler and solar device); air-water heat pumps; water-water heat pumps; biomass boilers.*

1.2 Aims of the criteria

The EU Ecolabel seeks to minimise the various environmental impacts at each stage of a product's life. The criteria are set at levels that promote products which have a lower overall environmental impact. In particular, the criteria aim to promote and support those water-based heaters that are energy-efficient and low greenhouse gas-emitting as well as those using more environmental friendly technologies and that are proven to be safe for consumers.

The criteria are valid until 28 May 2018.

1.3 Who can apply for the EU Ecolabel?

Manufacturers, importers and service providers may submit applications for the award of the EU Ecolabel. Traders and retailers may also apply, but may only submit applications for products marketed under their own brand names.

1.4 Where do I apply?

EU Ecolabel applications are made via a single application that covers all of the European Economic Area (EEA). Details about the EEA member states are available here:

http://eeas.europa.eu/eea/index_en.htm

Every country has a representative, known as a Competent Body, which assesses the applications. The choice of which country you should apply to is determined by the EEA Member State in which the product originates. If your product originates from outside the EEA, you should apply to the EEA Member State in which the product is (or is about to be) placed on sale.

All EEA Member States assess applications against the same criteria, but individual States have slightly different procedures and fee levels for handling applications. For contact details for each Member State's Competent Body, please visit:

http://ec.europa.eu/environment/ecolabel/competent-bodies.html

1.5 What does an application/contract cover?

An application for an EU Ecolabel covers a product, regardless of how many different names or brands are used for that product. Therefore, the applicant must report all the trade names or reference numbers of the product(s) in question during the process of application.

1.6 How do I extend or make changes to my EU Ecolabel licence?

Once the EU Ecolabel has been awarded, if the licence holder wants to extend the range of products covered by the licence, the following conditions apply:

- Extension with new commercial identification/reference names, which do not affect compliance with the criteria: In this case, the relevant information should be sent to the Competent Body. After scrutiny, and if accepted, the Competent Body will issue a revised licence with the new/additional commercial references/trade names added.
- Extension with new technical characteristics which affect compliance with the criteria (for example new materials): These must be approved by the Competent Body before use. A request for extension must be sent to the Competent Body together with all the necessary supporting documentation as required in the *Assessment and verification* section(s) of the relevant affected criterion/criteria.
- Addition or substitution of new suppliers: The Competent Body should be provided with appropriate documentation proving the suppliers' compliance with the criteria. In addition, an updated list of suppliers must be provided.

1.7 Continuous control – the responsibility of the applicant

The applicant is responsible for ensuring that the product, once awarded the EU Ecolabel, always remains in compliance with the EU Ecolabel criteria.

After an EU Ecolabel licence has been granted, the licence holder must keep the application dossier up to date. In cases where continued tests or measurements are required, the licence holder is responsible for keeping a record of the test results and other relevant documentation. This documentation may not need to be sent to the Competent Body, unless there is a specific requirement to do so (which will be set out in the relevant criterion, but must be available at any time if requested.

If at any time during the validity period of the licence the product falls out of compliance with the criteria this must be reported to the Competent Body immediately, together with a statement of the reasons for non-compliance. The Competent Body will decide the consequences of the non-compliance, e.g. a demand for additional measurements, suspension of the licence etc.

1.8 Assessment of the compliance to the criteria

The Competent Body may undertake any necessary investigations to monitor the licence holder's ongoing compliance with the EU Ecolabel criteria and the terms of use and provisions of the contract. To this end, the Competent Body may request, and the licence holder shall provide, any relevant documentation to prove such compliance.

1.9 Costs

The applicant is responsible for compiling the application and obtaining all the necessary supporting evidence, which may include tests etc.

In addition the applicant must pay an application fee[2], and an annual licence fee where this is asked for by the Competent Body. In some cases, applicants may be charged for an on-site verification, which may include travel and accommodation costs. Subsequent to the award of the licence, Competent Bodies may also charge for extension/modification fees and on-site inspections. Further information can be found at: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[2] According to the Commission Regulation (EU) No 782/2013 of 14 August 2013 amending Annex III to the Regulation (EC) No 66/2010 of the European Parliament and of the Council on the EU Ecolabel 25 November 2009.

2. The application process

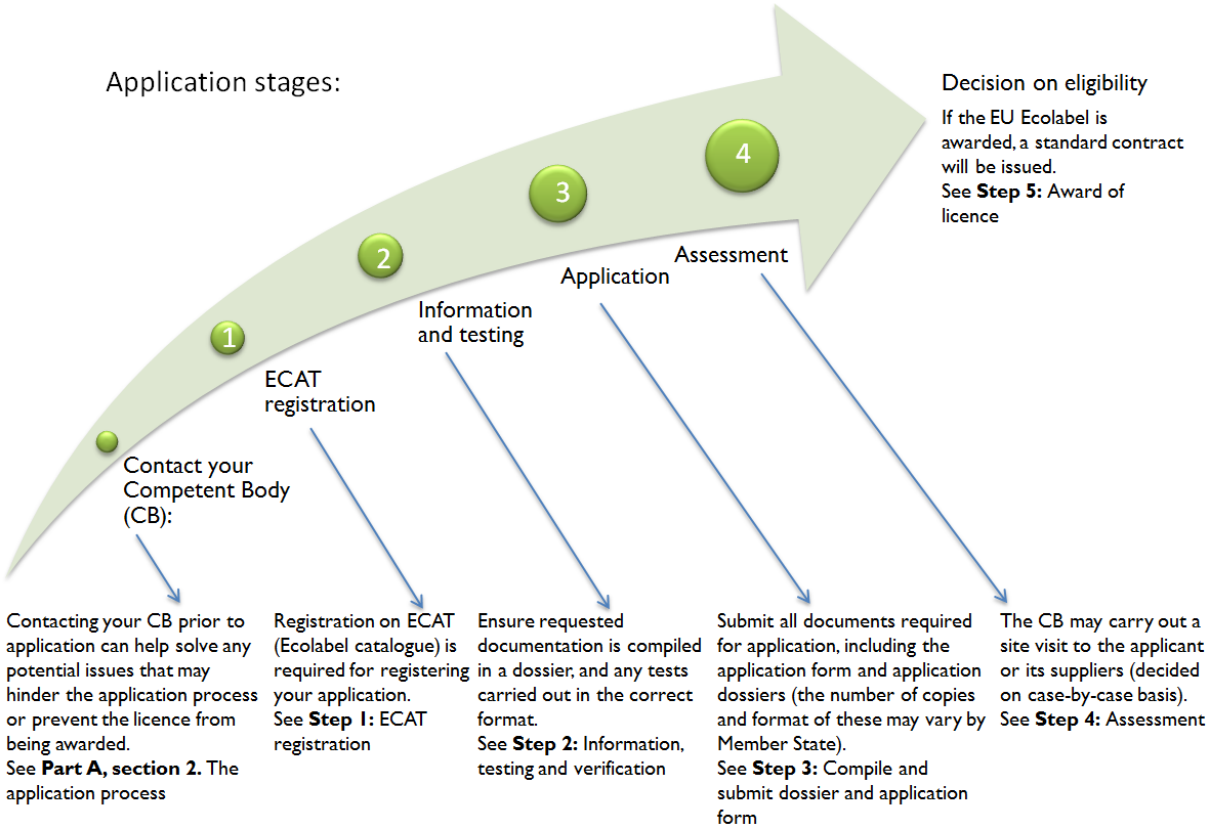
The first step in starting the application process is to contact your Competent Body, as they can help you in compiling your application. See section above 'Who can apply?' to find out which Competent Body(ies) you should apply to.

The contact details of all the EU Ecolabel Competent Bodies are available at:

http://ec.europa.eu/environment/ecolabel/competent-bodies.html

Figure 1 outlines the stages involved in applying for the EU Ecolabel. Further detail is given in the explanations that follow.

Figure 1: Ecolabel application stages



Step 1: ECAT registration

The online tool **ECAT** (the EU Ecolabel E-Catalogue) must be used to initially register your application for an EU Ecolabel licence.


Follow the instructions on the E-Catalogue User Manual which you can download from http://ec.europa.eu/environment/ecolabel/ecolabelled_products/pdf/user_manual/Ecat_admin%20user%20manual%20for%20Applicants.pdf. This user manual outlines the process for registration, which will include registering under the European Commission Authentication Service (ECAS) system. If you have any problems using the system, contact your Competent Body, or the Ecolabel Helpdesk..

Step 2: Information, testing and verification requirements

Use the criteria document, and the information and checklists in this User Manual, to assemble a dossier containing all the information and test results needed to show how the product has met each criterion. Each criterion will include a section setting out the Assessment and verification requirements which may include product tests, declarations of compliance, or independent verification. It is essential that data is accurate and substantiated; further checks may be carried out by the Competent Body if deemed appropriate.


All test and independent verification costs must be met by the applicant. You should factor in these costs before you decide to apply.

Step 3: Compile and submit dossier and application form

Please note that a dossier, comprising an application form with all the above supporting documentation, will need to be submitted to the relevant Competent Body. If your application is successful, you will be expected to retain a copy of the dossier and keep it up to date for the duration of your licence.


Send all of the documents required for application (typically a completed and signed copy (or copies) of the application form, and the application dossier – the number of copies and format of these may vary by Member State), to the relevant Member State Competent Body. For further information, please contact your Competent Body.

Step 4: Assessment

After receiving an application, the Competent Body examines the documentation including any material sent directly by suppliers. The Competent Body can ask for further information if necessary, within two months of receipt of an application. The Competent Body may make a list of any additional

documentation required in order to comply with the EU Ecolabel product group criteria. This list will be forwarded to the applicant who must ensure that the relevant documentation is provided.

It should also be noted that a Competent Body can reject an application if sufficient documentation is not received within 6 months of the initial application.

After all the documentation has been approved, the Competent Body may carry out an on-site visit to the applicant and/or its suppliers. The Competent Body makes this judgement on a case-by-case basis and may charge for it. Again, please contact your Competent Body for details.

Step 5: Award of licence

When the application has been assessed and is approved by the Competent Body, a contract is issued, which sets out the range of products covered, including any trade names. This contract sets out the terms of use of the EU Ecolabel, following the standard contract in Annex IV of the Regulation (EC) no. 66/2010 of 25 November 2009.

Once the contract is signed by the applicant, a certificate can be asked for. This certificate will detail:

- the licence number that can be used with the EU Ecolabel logo;
- the legal name of the applicant;
- the range of products awarded the EU Ecolabel;
- all relevant trade names under which the product is sold.

Upon receipt of the signed contract, the licence holder can use the EU Ecolabel logo and licence number on the relevant products in accordance with the EU Ecolabel Logo guidelines, which can be found at:

http://ec.europa.eu/environment/ecolabel/documents/logo_guidelines.pdf

2.1 Revision of criteria

The criteria for each product group are revised every three/four years, and existing EU Ecolabel holders have to re-apply when these new, revised criteria come into force. Therefore, it is advisable to consider the timing of your application to avoid consecutive application and then re-application under new criteria. A transition period for adjusting the product(s) formulation and applying for re-assessment is usually allowed for and is set out in the new criteria document.

For more information about the application process visit the EU Ecolabel website at:

http://ec.europa.eu/environment/ecolabel/how-to-apply-for-eu-ecolabel.html

2.2 Checklist: How to apply

Reference	Requirement	Tick when complete
1.1	Ensure product is eligible for Ecolabel	☐
Web link	Download the relevant product group criteria	☐
1.4	Identify the Competent Body in the relevant Member State you can apply to	☐
1.4	Contact the relevant Competent Body and notify them of your intention to apply for an Ecolabel	☐
Step 1	Register with ECAT Admin	☐
Step 2	Obtain two paper application forms from your Competent Body	☐
Revision	Check to see if the criteria relating to your product(s) or service are due to be revised or updated in the near future.[3]	☐
1.5	If only submitting a change to products or suppliers, identify the nature of the change and submit supporting documentation	☐

[3] For information about the criteria revision, please visit the website http://ec.europa.eu/environment/ecolabel/products-groups-and-criteria.html

2.3 Definitions

The following definitions shall apply to references throughout this User Manual, and in reference to the original criteria document:

1. **'heater'** means a space heater or combination heater;
2. **'space heater'** means a device that
   a. provides heat to a water-based central heating system in order to reach and maintain at a desired level the indoor temperature of an enclosed space such as a building, a dwelling or a room; and
   b. is equipped with one or more heat generators;
3. **'combination heater'** means a water-based space heater that is designed to also provide heat to deliver hot drinking or sanitary water at given temperature levels, quantities and flow rates during given intervals, and is connected to an external supply of drinking or sanitary water;
4. **'package of space heater, temperature control and solar device'** means a package offered to the end-user containing one or more space heaters combined with one or more temperature controls and/or one or more solar devices;
5. **'package of combination heater, temperature control and solar device'** means a package offered to the end-user containing one or more combination heaters combined with one or more temperature controls, and/or one or more solar devices;
6. **'solar device'** means a solar-only system, a solar collector, a solar hot water storage tank or a pump in the collector loop, which are placed on the market separately;
7. **'water-based central heating system'** means a system using water as a heat transfer medium to distribute centrally generated heat to heat emitters for the space heating of buildings, or parts thereof;
8. **'heat generator'** means the part of a heater that generates the heat using one or more of the following processes:
   a. combustion of fossil fuels and/or biomass fuels;
   b. use of the Joule effect in electric resistance heating elements;
   c. capture of ambient heat from an air source, water source or ground source, and/or waste heat;
9. **'gas heater'** means a space heater or combination heater equipped with one or more heat generators fuelled with gaseous fuels of fossil origin or from biomass;
10. **'liquid fuel heater'** means a space heater or combination heater equipped with one or more heat generators fuelled with liquid fuels of fossil origin or from biomass;
11. **'solid fuel heater'** means a space heater or combination heater equipped with one or more heat generators fuelled with solid fuels of fossil origin or from biomass;
12. **'boiler space heater'** means a space heater that generates heat using the combustion of fossil fuels and/or biomass fuels, and/or using the Joule effect in electric resistance heating elements;

13. **'gas boiler space heater'** means a boiler space heater equipped with one or more heat generators using the combustion of gaseous fuels of fossil origin or from biomass;
14. **'liquid fuel boiler space heater'** means a boiler space heater equipped with one or more heat generators using the combustion of liquid fuels of fossil origin or from biomass;
15. **'solid fuel boiler space heater'** means a boiler space heater equipped with one or more heat generators using the combustion of solid fuels of fossil origin or from biomass;
16. **'solid biomass boiler space heater'** means a boiler space heater equipped with one or more heat generators using the combustion of solid fuels from biomass;
17. **'electric boiler space heater'** means a boiler space heater that generates heat using the Joule effect in electric resistance heating elements only;
18. **'electric boiler combination heater'** means a boiler combination heater that generates heat using the Joule effect in electric resistance heating elements only
19. **'heat pump space heater'** means a space heater using ambient heat from an air source, water source or ground source, and/or waste heat for heat generation; a heat pump space heater may be equipped with one or more supplementary heaters using the Joule effect in electric resistance heating elements or the combustion of fossil and/or biomass fuels;
20. **'heat pump combination heater'** means a heat pump space heater that is designed to also provide heat to deliver hot drinking or sanitary water at given temperature levels, quantities and flow rates during given intervals, and is connected to an external supply of drinking or sanitary water;
21. **'fuel-driven heat pump heater'** means a heat pump heater equipped with one or more heat generators fuelled with gas or liquid fuel of fossil origin or from biomass;
22. **'electrically-driven heat pump heater'** means a heat pump heater equipped with one or more heat generators using electricity as a fuel;
23. **'cogeneration space heater'** means a space heater simultaneously generating heat and electricity in a single process;
24. **'temperature control'** means equipment that interfaces with the end-user regarding the values and timing of the desired indoor temperature, and communicates relevant data, such as actual indoor and/or outdoor temperature(s), to an interface of the heater such as a central processing unit, thus helping to regulate the indoor temperature(s);
25. **'seasonal space heating energy efficiency'** (η_s) means the ratio between the space heating demand for a designated heating season, supplied by a heater and the annual energy consumption required to meet this demand, expressed in percentage %;
26. **'water heating energy efficiency'** (η_{wh}) means the ratio between the useful energy in the drinking or sanitary water provided by a combination heater and the energy required for its generation, expressed in percentage %;
27. **'rated heat output'** means the declared heat output of a heater when providing space heating and, if applicable, water heating at standard rating conditions, expressed in kW; for heat pump space heaters and heat pump combination heaters the standard rating conditions for establishing the rated heat output are the reference design conditions, as set out in Regulation (EU) No 813/2013 implementing Directive 2009/125/EC of the European Parliament

and of the Council with regard to ecodesign requirements for space heaters and combination heaters ;

28. **'standard rating conditions'** means the operating conditions of heaters under average climate conditions for establishing the rated heat output, seasonal space heating energy efficiency, water heating energy efficiency, sound power level, nitrogen oxide (NOx) emissions, carbon monoxide (CO) emissions, organic gaseous carbon (OGC) emissions and particulate matter.
29. **'average climate conditions'** mean the temperature conditions characteristic for the city of Strasbourg;
30. **'seasonal space heating emissions'** means:
    a. for automatically stoked solid fuel boilers, a weighted average of the emissions at rated heat output and the emissions at 30 % of the rated heat output, expressed in mg/m3;
    b. for manually stoked solid fuel boilers that can be operated at 50% of the rated heat output in continuous mode, a weighted average of the emissions at rated heat output and the emissions at 50 % of the rated heat output, expressed in mg/m3;
    c. for manually stoked solid fuel boilers that cannot be operated at 50% or less of the rated heat output in continuous mode, the emissions at rated heat output, expressed in mg/m3;
    d. for solid fuel cogeneration space heater, the emissions at rated heat output, expressed in mg/m3.
31. **'global warming potential'** means global warming potential as defined in Article 2(4) of Regulation (EC) No 842/2006 of the European Parliament and of the Council ;
32. **'Nm^3'** means normal cubic metre (at 101.325 kPa, 273.15 K).

Part B: Product Assessment and Verification

1 Product group criteria

Criteria for awarding the EU Ecolabel to water-based heaters are set for each of the following aspects:

1. Minimum energy efficiency
    a. Minimum seasonal space heating energy efficiency
    b. Minimum water heating energy efficiency
2. Greenhouse gas emission limits
3. Refrigerant and secondary refrigerant
4. Nitrogen oxide (NO_x) emission limits
5. Carbon monoxide (CO) emission limits
6. Organic gaseous carbon (OGC) emission limits
7. Particulate matter (PM) emission limits
8. Noise emission limits
9. Hazardous substances and mixtures
10. Substances listed in accordance with Article 59(1) of Regulation (EC) 1907/2006 of the European Parliament and of the Council[4]
11. Plastic parts
12. Product design for sustainability
13. Installation instructions and user information
14. Information appearing on the EU Ecolabel

The Ecolabel criteria reflect the best environmental performing water-based heaters on the market.

The key environmental impacts from water-based heaters are associated with their use phase and linked mainly to the energy efficiency of the product and related greenhouse gas (GHG) emissions during operation. Greenhouse gas emissions are mainly due to the emission of CO_2 from combustion and potentially – to a lesser extent – refrigerant leakage (for certain types of heating technologies such as heat pumps).

Installation instructions and user information criteria were identified as one of the most important criteria to guarantee optimum environmental performance of the water-based heaters. Additional environmental impacts as acidification, tropospheric ozone and air, water and soil pollution are related to air emissions during operation including nitrogen oxides (NOx), carbon monoxide (CO), organic

[4] OJ L 396, 30.12.2006, p. 1.

gaseous carbon (OGC) and particulate matter (PM). Other environmental issues of relevance include noise and product design.

Derogations are evaluated on the basis of the precautionary principle and scientific and technical evidence, especially if safer products are available on the market.

The process of verifying compliance with the criteria is designed to: provide a high level of assurance to consumers; reflect the practical potential for applicants to obtain information from the supply chain; exclude the potential for 'free riding' by applicants.

Table 1 presents the applicability of the different criteria to each heat generator technology. In the case of a package of space heater, it shall comply with all the criteria applicable to each of the heat generator technologies it is made of. Those criteria, for which there is a specific methodology aimed at the packages of space heaters, shall be applicable to the package of space heaters as a whole.

ⓘ *This means that the thresholds set in Criterion 1 and Criterion 2 apply to the seasonal space heating energy efficiency and the TEWI value of the package of space heater, not to each heat generator technology which it is made of. Conversely, the rest of this criterion applies to each heat generator technology which makes up the package space heaters.*

Table 1: Applicability of the different criteria to each of the heat generator technologies

Criteria \ Heat generator technology	Gas boiler heaters	Liquid fuel boiler heaters	Solid fuel boiler heaters	Electric boiler heaters	Fuel-driven heat pump heaters	Electric-ally-driven heat pump heaters	Cogene-ration space heaters
1(a) – Minimum seasonal space heating energy efficiency	x	x	x	x	x	x	x
1(b) – Minimum water heating energy efficiency (applicable to combination heaters only)	x	x		x	x	x	x
2 – Greenhouse gas emission limits	x	x	x	x	x	x	x
3 – Refrigerant and secondary refrigerant					x	x	

Criteria \ Heat generator technology	Gas boiler heaters	Liquid fuel boiler heaters	Solid fuel boiler heaters	Electric boiler heaters	Fuel-driven heat pump heaters	Electric-ally-driven heat pump heaters	Cogene-ration space heaters
4 – Nitrogen oxide (NOx) emission limits	x	x	x		x		x
5 – Carbon monoxide (CO) emission limits	x	x	x		x		x
6 – Organic carbon (OGC) emission limits			x				
7 – Particulate matter (PM) emission limits		x	x				x
8 – Noise emission limits					x	x	x
9 – Hazardous substances and materials	x	x	x	x	x	x	x
10 – Substances listed in accordance with Article 59(1) of Regulation (EC) 1907/2006	x	x	x	x	x	x	x
11– Plastic parts	x	x	x	x	x	x	x
12– Product design for sustainability	x	x	x	x	x	x	x
13 – Installation instructions and user information	x	x	x	x	x	x	x
14 – Information appearing on the EU Ecolabel	x	x	x	x	x	x	x

2 Assessment and verification requirements

The specific assessment and verification requirements are indicated within each criterion. Where the applicant is required to provide declarations, documentation, analyses test reports, or other evidence to show compliance with the criteria, these may originate from the applicant or his supplier or both.

Where possible, the testing shall be performed by laboratories that meet the general requirements of European Standard EN ISO 17025 or equivalent. Competent Bodies shall preferentially accept verifications performed by bodies which are accredited under the EN 45011 standard or an equivalent international standard.

ⓘ *Note that EN45011 is currently being replaced by ISO 17065. Competent Bodies will also accept this accreditation standard when assessing the application.*

Test methods for each criterion, unless specified otherwise, shall be those described in the relevant Standards as indicated in Table 2 and Table 3 (where applicable). Where appropriate, test methods other than those indicated for each criterion may be used if the competent body assessing the application accepts their equivalence.

Table 2: Relevant standards for test methods

Number	Title
Gas boiler heaters	
EN 676	Automatic Forced draught burners for gaseous fuels
EN 15502-1	Gas-fired heating boilers – Part 1: General requirements and tests
Liquid fuel boiler heaters	
EN 267	Automatic forced draught burners for liquid fuels
EN 303-1	Heating boilers - Part 1: Heating boilers with forced draught burners - Terminology, general requirements, testing and marking
EN 303-2	Heating boilers – Part 2: Heating boilers with forced draught burners – Special requirements for boilers with atomizing oil burners
EN 303-4	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,

Number	Title
	testing and marking
EN 304	Heating boilers – Test code for heating boilers for atomizing oil burners
Solid fuel boiler heaters	
EN 303-5	Heating boilers – Part 5: Heating boilers for solid fuels, manually and automatically stoked, nominal heat output of up to 500 kW – Terminology, requirements, testing and marking
EN 14918	Solid biofuels - Determination of calorific value
Electric boiler heaters	
EN 60335-2-35	Household and similar electrical appliances – Safety – Part 2-35: Particular requirements for instantaneous water heaters
Fuel-driven heat pump heaters	
EN 12309 series	Gas-fired absorption and adsorption air-conditioning and/or heat pump appliances with a net heat input not exceeding 70 kW
DIN 4702, Part 8	Central heating boiler; determination of the standard efficiency and the standard emissivity
Electrically-driven heat pump heaters	
EN 14511 series	Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling
EN 14825	Air conditioners, liquid chilling packages and heat pumps, with electrically driven compressors, for space heating and cooling – Testing and rating at part load conditions and calculation of seasonal performance
Cogeneration space heaters	
EN 50465	Gas appliances – Fuel cell gas heating appliances – Fuel cell gas heating appliance of nominal heat input inferior or equal to 70 kW ([5])
ISO 3046-1	Reciprocating internal combustion engines – Performance – Part 1: Declarations of power, fuel and lubricating oil consumptions, and test methods – Additional requirements for engines for general use

[5] An updated version of the standard is expected to cover cogeneration space heaters as well (see Draft prEN 50465:2011 Gas appliances – Combined Heat and Power appliance of nominal heat input inferior or equal to 70 kW)

Table 3: Additional relevant standards for test methods of air emissions

Number	Title
Nitrogen oxide emissions	
EN 14792	Stationary source emissions – Determination of mass concentration of nitrogen oxides (NOx) – Reference method: Chemiluminescence
Carbon monoxide emissions	
EN 15058	Stationary source emissions – Determination of the mass concentration of carbon monoxide (CO) – Reference method: Non-dispersive infrared spectrometry
Organic gaseous carbon emissions	
EN 12619	Stationary source emissions – Determination of the mass concentration of total gaseous organic carbon at low concentrations in flue gases – Continuous flame ionisation detector method
Particulate matter emissions	
EN 13284-1	Stationary source emissions – Determination of low range mass concentration of dust – Part 1: Manual gravimetric method
Noise emissions	
EN ISO 3744	Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Engineering methods for an essentially free field over a reflecting plane (ISO 3744:2010)
EN ISO 3746	Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Survey method using an enveloping measurement surface over a reflecting plane (ISO 3746:2010)
EN 12102	Air conditioners, liquid chilling packages, heat pumps and dehumidifiers with electrically driven compressors for space heating and cooling - Measurement of airborne noise - Determination of the sound power level

The methodology to calculate the seasonal space heating emissions is indicated in *Table 4*

Table 4: Methodology to calculate the seasonal space heating emissions

Type of solid fuel boiler	Formula
Manually stoked solid fuel boilers that can be operated at 50% of the rated heat output in continuous mode, and automatically stoked solid fuel boilers	$E_s = 0.85 \times E_{s,p} + 0.15 \times E_{s,r}$
Manually stoked solid fuel boilers that cannot be operated at 50% or less of the rated heat output in continuous mode, and solid fuel cogeneration space heaters	$E_S = E_{S,R}$
Where E_s are the seasonal space heating emissions. $E_{s,p}$ are the emissions of respectively particulate matter, organic gaseous compounds, carbon monoxide and nitrogen oxides measured at 30% or 50% of rated heat output, as applicable. $E_{s,r}$ are the emissions of respectively particulate matter, organic gaseous compounds, carbon monoxide and nitrogen oxides measured at rated heat output.	

Criterion 1: Minimum energy efficiency

a) Minimum seasonal space heating energy efficiency

The seasonal space heating energy efficiency η_s of the water-based heater shall not fall below the limit values set out in Table 5.

Table 5: Minimum requirements for seasonal space heating energy efficiency by heat generator technology

Heat generator technology	Minimum seasonal space heating energy efficiency
All heaters except solid biomass boiler heaters	$\eta_s \geq 98$ %
Solid biomass boiler heaters	$\eta_s \geq 79$ %

The seasonal space heating energy efficiency of a heater is the energy input required to satisfy a space heating demand for a designated heating season under defined conditions.

i. The seasonal space heating energy efficiency shall be calculated in accordance with the procedures set out in Annex III to Regulation (EU) No 813/2013([6]) implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters and in Annex VII to Regulation (EU) No 811/2013([7]) supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to the energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar device, including, where applicable, the harmonised standards the reference numbers of which have been published for this purpose in the Official Journal of the European Union, or other reliable, accurate and reproducible methods that take into account the generally recognised state-of-the-art methods and that meet the conditions and technical parameters set out in Annex III of Regulation (EU) No 813/2013.

([6]) OJ L 239, 6.9.2013, p. 136–161.
([7]) OJ L 239, 6.9.2013, p. 1–82.

ⓘ *Applicants should use the testing procedures in Annex III to Regulation (EU) No 813/2013, along with those in the relevant standard in* Table 2*, to determine the seasonal space heating energy efficiency for all but solid-fuel boiler heaters.*

Please note that the transitional methods contain complementary methodologies and standards to the Ecodesign Regulation (Reg (EU) No 813/2013). They are available at:

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:2014:207:FULL&from=EN

ⓘ *Additionally, for packages of space heaters, the seasonal space heating energy efficiency of the package of space heater shall be determined in accordance with point 5 of Annex IV;* ***Regulation (EU) No 811/2013 with regard to the energy labelling of space heater, temperature control and solar device and packages of combination heater, temperature control and solar device***

(ii) For solid fuel boiler heaters, η_s shall be calculated in accordance with the procedures referred to in point (i), taking into account the following additional requirements:

(a) the calculation of η_s shall be based on the gross calorific value of the wet fuel (as received) GCV_{ar}, which corrects for the moisture content in the fuel but includes in the energy content the latent heat energy stored in hydrogen that is oxidised to water in the combustion process. The principles laid down in Standard EN 303-5 shall apply to estimate η_s, while GCV_{ar} instead of the net calorific value of the wet fuel (as received) NCV_{ar} shall be used for the calculation of η_s.

(b) for determining the calorific value of solid biomass, the principles laid down in Standard EN 14918 shall apply.

(c) The gross calorific value of the wet fuel at constant volume $GCV_{ar,V}$ can be derived as follows:

$$GCV_{ar,V} = GCV_{dry,V} \times (100 - m) / 100 \text{ [MJ/kg]}$$

where:

m is the moisture content of the wet fuel (percentage by mass)

$GCV_{dry,V}$ is the gross calorific value of the dry fuel (moisture-free) at constant volume

(d) The gross calorific value of the dry fuel at constant volume $GCV_{dry,V}$ can be derived as follows:

$$GCV_{dry,V} = NCV_{dry,P} + 0.2122 \times H_{dry} + 0.0008 \times (O_{dry} + N_{dry}) \text{ [MJ/kg]}$$

where:

$NCV_{dry,P}$ is the net calorific value of the dry fuel (including ash) at constant pressure

H_{dry} is the hydrogen content of the dry fuel (percentage by mass)

O_{dry} is the oxygen content of the dry fuel (percentage by mass)

N_{dry} is the nitrogen content of the dry fuel (percentage by mass)

(e) The net calorific value of the dry fuel at constant pressure $NCV_{dry,P}$ can be derived as follows:

$NCV_{dry,P} = NCV_{ar,P} \times 100 / (100 - m) + 2.443 \times m / (100 - m)$ [MJ/kg]

where:

$NCV_{ar,P}$ is the net calorific value of the wet fuel at constant pressure

(f) It shall be noted that with combining (c), (d) and (e), $GCV_{ar,V}$ can be derived from $NCV_{ar,P}$ as follows:

$GCV_{ar,V} = NCV_{ar,P} + [0.2122 \times H_{dry} + 0.0008 \times (O_{dry} + N_{dry})] \times (100 - m) / 100 + 0.02443 \times m$ [MJ/kg]

ⓘ *Applicants should use the testing procedures in Annex III to Regulation (EU) No 813/2013, along with those in EN 303-5 and EN 14918 and the steps listed under point (ii), to determine the seasonal space heating energy efficiency for all solid-fuel boiler heaters.*

Required documentation for Assessment and verification: seasonal space heating energy efficiency

The applicant shall declare that the product complies with this criterion and provide test results conducted in accordance with the testing procedure indicated in the EN standards (including transitional methods where applicable) applicable to the given type of product (see **Error! Reference source not found.**). Measurements and calculations of the seasonal space heating energy efficiency shall be made using the methodology of seasonal space heating energy efficiency of packages and in accordance with the procedures referred to in point (i). For solid fuel boiler heaters, the seasonal space heating energy efficiency shall be calculated in accordance with point (ii).

Declaration of seasonal space heating energy efficiency (Criterion 1 a)

ⓘ *Note that the transitional methods are available at:*

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:2014:207:FULL&from=EN

b) Minimum water heating energy efficiency

(i) The water heating energy efficiency η_{wh} of combination heaters or package of space heaters containing one or more combination heaters shall not fall below 65%. This criterion shall not apply to solid fuel boiler heaters.

ⓘ *Criterion 1 b) (i) does not apply to solid fuel boiler heaters.*

(ii) The water heating energy efficiency shall be calculated in accordance with the procedures set out in Annex III to Regulation (EU) No 813/2013 and in Annex VII to Regulation (EU) No 811/2013.

⚠ *The water heating energy efficiency of a heater is a ratio between the declared reference energy and the energy required for its generation under different conditions – see Annex III to Regulation (EU) No 813/2013 and Annex VII to Regulation (EU) No 811/2013 for more information.*

Required documentation for Assessment and verification: seasonal space heating energy efficiency

The applicant shall declare that the product complies with this criterion and provide test results conducted in accordance with the testing procedure indicated in the EN standards (including transitional methods where applicable) applicable to the given type of product (see Table 2). Measurements and calculations shall be made using the methodology of water heating energy efficiency of packages in accordance with the procedures referred to in point (ii).

Declaration of water heating energy efficiency (Criterion 1 b)

ⓘ *Note that the transitional methods are available at:*

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:2014:207:FULL&from=EN

Criterion 2: Greenhouse gas (GHG) emission limits

The greenhouse gas (GHG) emissions of the water-based heater, expressed in grams of CO_2-equivalent per kWh of heating output calculated using the Total Equivalent Warming Impact (TEWI) formulas set out in Table 7, shall not exceed the values set out in Table 6.

Table 6: GHG emission limits by heat generator technology

Heat generator technology	GHG emission limits
All heaters, except heat pump heaters	200 g CO_2-equivalent/kWh heating output
Heat pump heaters	150 g CO_2-equivalent/kWh heating output

The GHG emissions shall be calculated following the TEWI formulae as set out in Table 7 (the formula depends on the heat generator technology). Each TEWI formula may consist of two parts, one depending solely on the heater efficiency (expressed in terms of the seasonal space heating energy efficiency, η_s) and the fuel carbon intensity (represented by the β parameter), and the second part (only applicable to heat pump heaters) depending on the greenhouse gas emissions due to refrigerant leakage.

The GHG emissions from the refrigerant leakage depend on the global warming potential (GWP_{100}) of the refrigerant and the refrigerant leakage during the use phase (expressed as an annual leakage rate, ER, in percentage of the total mass of the refrigerant per year) and at end-of-life (expressed as a percentage of the total mass of the refrigerant, α).

Table 7: TEWI formulae by heat generator technology

Heat generator technology	TEWI formula (g CO_2-equivalent/kWh heating output)
Boiler heaters	$\frac{\beta_{fuel}}{\eta_s}$
Heat pump heaters	$\delta \times \frac{\beta_{fuel}}{\eta_s} + (1-\delta) \times \frac{\beta_{elec}}{2.5 \times \eta_s} + \frac{GWP_{100} \times m \times (ER \times n + \alpha)}{P \times h \times n}$

Heat generator technology	TEWI formula (g CO_2-equivalent/kWh heating output)
Co-generation space heaters	$\frac{\beta_{fuel}}{\eta_{thermal}} - \frac{\eta_{el} \times \beta_{elec}}{\eta_{thermal}}$
Package of space heaters	$(1-s_{HP}) \times \frac{\beta_{fuel(1)}}{\eta_{s,B}} + s_{HP} \times \left(\delta \times \frac{\beta_{fuel(2)}}{\eta_{s,HP}} + (1-\delta) \times \frac{\beta_{elec}}{2.5 \times \eta_{s,HP}} \right) + \frac{GWP_{100} \times m \times (ER \times n + \alpha)}{P \times h \times n}$

The main parameters in the TEWI formulae set out in Table 7 are described in Table 8.

Table 8: Main parameters for computing the TEWI formulae

Parameter	Description of parameter	Units	Constant value or test to be performed in order to obtain the parameter
β_{elec}	GHG emission intensity of electricity	[g CO_2-equivalent/kWh_{elec}]	384
β_{fuel}	GHG emission intensity of the fuel used by the heater	[g CO_2-equivent/kWh]	See Table 9
η_s	Seasonal space heating energy efficiency	[-]	To be tested and declared by the applicant (Criterion 1 a)
$\eta_{s,B}$	Seasonal space heating energy efficiency of the boiler heater part for average climate conditions	[-]	To be tested and declared by the applicant; this corresponds to the seasonal space heating energy efficiency of the package minus supplementary heat pump, as stated in the product fiche of packages (Criterion 1 a)
$\eta_{s,HP}$	Seasonal space heating energy efficiency of the heat pump heater part for average climate	[-]	To be tested and declared by the applicant; this corresponds to the seasonal space heating energy efficiency of the supplementary heat pump, as stated in the product fiche

Parameter	Description of parameter	Units	Constant value or test to be performed in order to obtain the parameter
	conditions		of packages (Criterion 1 a)
$\eta_{thermal}$	Thermal efficiency	[-]	See Table 10
η_{el}	Electrical efficiency	[-]	See Table 10
δ	Proxy	[-]	= 0 if electrically-driven heat pump heater = 1 if fuel-driven heat pump heater
GWP_{100}	Global warming potential (effect over 100 years)	[g CO_2-equivalent/g refrigerant, over 100 year period]	Value declared by the applicant according Criterion 3
m	Refrigerant mass	[g]	To be declared by the applicant
ER	Refrigerant loss per year	[%/yr]	A value of ER = 3.5 %/yr shall be used.
n	Lifetime	[yr]	A value of n = 15 shall be used.
α	Refrigerant loss at end of life (disposal loss)	[%]	A value of α = 35 % shall be used.
P	Design load	[kW]	To be declared by the applicant.
h	Full load operating hours	[h/yr]	2000
s_{HP}	Share of heat output from the heat pump heater part over the total heat output	[-]	= (16 − T_{HP}) / 26 where T_{HP} is the temperature (°C) at which the (primary) heat pump efficiency equals the primary boiler efficiency. It is assumed that below this temperature the boiler fulfils the heat demand, while above this temperature the heat pump supplies the heat demand.

Table 9 describes how to evaluate parameter β_{fuel} in the TEWI formulae depending on the fuel used by the heater. In case the boiler is designed for a fuel not listed in the table, the closest match of fuel shall be selected, based on the origin (fossil or biomass) and form (gaseous, liquid or solid) of the fuel used.

Table 9: Parameter βfuel (GHG emission intensity) to compute the TEWI formulae

Fuel used by the heater	GHG emission intensity	Value (g CO_2-equivalent/kWh)
Gaseous fossil fuels	$\beta_{fuel} = \beta_{gas}$	202
Liquid fossil fuels	$\beta_{fuel} = \beta_{oil}$	292
Solid fossil fuels	$\beta_{fuel} = \beta_{coal}$	392
Gaseous biomass	$\beta_{fuel} = \beta_{bio\text{-}gas}$	98
Liquid biomass	$\beta_{fuel} = \beta_{bio\text{-}oil}$	149
Wood logs	$\beta_{fuel} = \beta_{bio\text{-}log}$	19
Wood chips	$\beta_{fuel} = \beta_{bio\text{-}chip}$	16
Wood pellets	$\beta_{fuel} = \beta_{bio\text{-}pellet}$	39
Blends of fossil fuels and biomass	β_{fuel} = weighted average derived from the sum of the weight fractions of the individual fuels multiplied by their GHG emission parameter	Σ (Fuel X % × $\beta_{fuel\ X}$) + (Fuel Y % × $\beta_{fuel\ Y}$) + … (Fuel N % × $\beta_{fuel\ N}$)

Table 10 describes how to evaluate parameters $\eta_{thermal}$ and η_{el} in the TEWI formula for cogeneration space heaters.

Table 10: Parameters $n_{thermal}$ and n_{el} to compute the TEWI formula for cogeneration space heaters

Parameter	Expression
$\eta_{thermal}$	$\eta_{thermal} = \eta_s - 2.5 \times \eta_{el}$
η_{el}	For cogeneration space heaters not equipped with supplementary heaters

Parameter	Expression
	$\eta_{el} = \eta_{el,CHP100+Sup0}$
	For cogeneration space heaters equipped with supplementary heaters $\eta_{el} = 0.85 \times \eta_{el,CHP100+Sup0} + 0.15 \times \eta_{el,CHP100+Sup100}$

Where:

η_s means the seasonal space heating energy efficiency as defined in Regulation (EU) No 813/2013

η_{el} means the electrical efficiency as defined in Regulation (EU) No 813/2013

$\eta_{el,CHP100+Sup0}$ means the electrical efficiency at rated heat output of cogeneration space heater with supplementary heater disabled, as defined in Regulation (EU) No 813/2013

$\eta_{el,CHP100+Sup100}$ means the electrical efficiency at rated heat output of cogeneration space heater with supplementary heater enabled, as defined in Regulation (EU) No 813/2013

Required documentation for Assessment and verification: greenhouse gas emission limits

- A certificate signed by the manufacturer declaring compliance with this criterion shall be submitted to the awarding competent body, together with the relevant documentation.
- The applicant shall provide the calculated GHG emissions following the proposed TEWI formulae and detail all the parameters used to calculate the GHG emissions.
- Declaration of greenhouse gas emissions (Criterion 2)

ⓘ *'Relevant documentation' means any additional document or test required depending on the type of product. For example, for heat pumps, the product fiche of the specifications of the manufacturer regarding the refrigerant use may be requested.*

Criterion 3: Refrigerant and secondary refrigerant

a) Refrigerant

The global warming potential over a 100 year period (GWP100) of the refrigerant shall not exceed a value of 2000. GWP100 values shall be those set out in Annex I to Regulation (EC) No 842/2006.[8] Sources of references for the GWP100 values should be those defined in Annex 1.1(7) to Regulation (EU) No 206/2012.[9]

The limit of 2000 GWP_{100} means that certain fluorinated greenhouse gases cannot be used as refrigerants – see Annex I to Regulation (EC) No 842/2006 for more information.

b) Secondary refrigerant

In the case of space heaters using a secondary refrigerant, the design of these heaters shall not be based on secondary refrigerant, brine or additives classified as environmentally hazardous or constituting a health hazard within the meaning of Regulation (EC) No 1272/2008,[10] and Council Directive 67/548/EEC,[11] and installation instructions shall clearly indicate that substances classified as environmentally hazardous or constituting a health hazard shall not be used as a secondary refrigerant.

Chemicals that are classified as environmentally hazardous or constituting a health hazard must not be used as secondary refrigerants.

[8] OJ L 161, 14.6.2006, p. 1
[9] OJ L 72, 10.3.2012, p. 7
[10] OJ L 353, 31.12.2008, p. 1.
[11] OJ 196, 16.8.1967, p. 1.

Required documentation for Assessment and verification: refrigerant and secondary refrigerant

For refrigerants

The names of refrigerant(s) used in the product shall be submitted with the application, along with their GWP_{100} values as defined in Regulation (EC) No 842/2006. The GWP_{100} values of refrigerants shall be calculated in terms of the 100-year warming potential of one kilogram of a gas relative to one kilogram of CO_2. Sources of references for the GWP_{100} values should be those defined in Annex 1.1(7) to Regulation (EU) No 206/2012.[1]

- For secondary refrigerants only

The name(s) of the secondary refrigerant(s) used shall be submitted with the application.

Declaration of refrigerants in product (Criterion 3)

Criterion 4: Nitrogen oxide (NOx) emission limits

The nitrogen oxide (NO_x) content of the exhaust gas shall not exceed the limit values indicated in Table 11 (not applicable to electrical heaters). NO_x emissions shall be measured as the sum of nitrogen monoxide and nitrogen dioxide and at the following operating conditions:

- Gas and liquid heaters, at standard rating conditions and rated heat output

Solid fuel heaters, as seasonal space heating emissions according to *Table 4*.

The unit of measurement shall be given in mg/kWh GCV energy input or in mg/Nm^3, as appropriate.

Table 11: NOx emission limits by heat generator technology

Heat generator technology	NO_x emission limit
Gas heaters	Equipped with internal combustion engine: 170 mg/kWh GCV energy input Equipped with external combustion: 36 mg/kWh GCV energy input
Liquid fuel heaters	Equipped with internal combustion engine: 380 mg/kWh GCV energy input Equipped with external combustion: 100 mg/kWh GCV energy input
Solid fuel heaters	150 mg/Nm^3 at 10 % O_2

ⓘ 'Heater equipped with external combustion' *means a category of heaters comprising boilers, a-sorption heat pumps and heaters equipped with external combustion engine.*

⚠ *The measurement of NOx emissions of space heaters (within the scope of the Regulation EU No 813/2013 - space heaters using gas and liquid fuels) shall comply with provisions of the Commission communication 2014/C 207/02 containing the transitional methods for the implementation of this regulation.*

In the case of liquid boilers, that means that NOx emissions shall be measured according to EN 267:2009+A1:2011 (Automatic forced draught burners for liquid fuel). Reference nitrogen content of 140 mg/kg in the fuel shall be applied. Where another nitrogen content is measured, with the exemption of Kerosene oil only, the following correction equation shall apply:

$$NOx\left(\frac{mg}{kWh}\right) = NOx_{ref}\left(\frac{mg}{kWh}\right) - (N_{meas} - N_{ref})x0.2$$

Where:

NOx (mg/kWh) is the value of NOX corrected to the reference conditions of nitrogen of the fuel oil chosen at 140 mg/kg;

NOx_{ref} (mg/kWh) is the measured value of NOx using the N content reference of 140 mg/kWh

N_{meas} is the value of the nitrogen content of the fuel oil measured in mg/kg;

N_{ref} = 140 mg/kg

The transitional methods are available at:

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:2014:207:FULL&from=EN.

Required documentation for Assessment and verification: nitrogen oxide emission limits

A certificate signed by the manufacturer declaring compliance with this criterion shall be submitted to the awarding competent body, together with the relevant documentation.

The NOx emissions in the exhaust gas shall be determined as standard emission factors according to the relevant standards included in Table 2 and Table 3 and transitional methods for the implementation of Ecodesign Regulation EU No 813/2013 (where applicable).

Declaration of nitrogen oxide emissions (Criterion 4)

'*Relevant documentation' means the test report according to the standards referred.*

Criterion 5: Carbon monoxide (CO) emission limits

The carbon monoxide (CO) content of the exhaust gas shall not exceed the limit values indicated in Table 12 (not applicable to electrical heaters). CO emissions shall be measured at the following operating conditions:

- Gas and liquid heaters, at standard rating conditions and rated heat output
- Solid fuel heaters, as seasonal space heating emissions according to *Table 4*

The unit of measurement shall be given in mg/kWh GCV energy input or in mg/Nm^3, as appropriate.

Table 12: CO emission limits by heat generator technology

Heat generator technology	CO emission limit
Gas heaters	Equipped with internal combustion engine: 150 mg/Nm^3 at 5 % O_2. Equipped with external combustion: 25 mg/kWh GCV energy input.
Liquid fuel heaters	Equipped with internal combustion engine: 200 mg/Nm^3 at 5 % O_2. Equipped with external combustion: 50 mg/kWh GCV energy input.
Solid fuel heaters	Automatically stoked: 175 mg/Nm^3 at 10 % O_2. Manually stoked: 250 mg/Nm^3 at 10 % O_2.

Required documentation for Assessment and verification: carbon monoxide emission limits

A certificate signed by the manufacturer declaring compliance with this criterion shall be submitted to the awarding competent body, together with the relevant documentation.

The CO emissions in the exhaust gas shall be determined as standard emission factors according to the relevant standards included in Table 2 and Table 3 (where applicable).

Declaration of carbon monoxide emissions (Criterion 5)

'*Relevant documentation' means the test report according to the standards referred.*

Criterion 6: Organic gaseous carbon (OGC) emission limits

The organic gaseous carbon (OGC) of the exhaust gas, also understood as organically bound carbon content, shall not exceed the limit values indicated in Table 13 (only applicable to solid fuel boiler heaters). OGC emissions shall be measured as seasonal space heating emissions according to Table 4.

The unit of measurement shall be given in mg/Nm^3.

Table 13: OGC emission limits by heat generator technology

Heat generator technology	OGC emission limit
Solid fuel boiler heaters	7 mg/Nm^3 at 10 % O_2

An OGC value is required to be calculated for solid fuel boiler heaters only.

Required documentation for Assessment and verification: organic gaseous carbon (OGC) emission limits

A certificate signed by the manufacturer declaring compliance with this criterion shall be submitted to the awarding competent body, together with the relevant documentation.

The OGC emissions in the exhaust gas shall be determined as standard emission factors according to the relevant standards included in **Error! Reference source not found.** and **Error! Reference source not found.** (where applicable).

Declaration of organic gaseous carbon emissions (Criterion 6)

'*Relevant documentation' means the test report according to the standards referred.*

Criterion 7: Particulate matter (PM) emission limits

The particle matter (PM) content of the exhaust gas shall not exceed the limit values indicated in Table 14. PM emissions shall be measured at the following operating conditions:

- Liquid heaters, at standard rating conditions and rated heat output.

Solid fuel heaters, as seasonal space heating emissions according Table 4.

The unit of measurement shall be given in mg/Nm^3.

Table 14: PM emission limits by heat generator technology

Heat generator technology	PM emission limit
Liquid fuel heaters	Equipped with internal combustion engine: 1 mg/Nm^3 at 5 % O_2 Equipped with external combustion: no limit
Solid fuel heaters	20 mg/Nm^3 at 10 % O_2

Required documentation for Assessment and verification: particluate matter (PM) emission limits

A certificate signed by the manufacturer declaring compliance with this criterion shall be submitted to the awarding competent body, together with the relevant documentation.

The PM emissions in the exhaust gas shall be determined as standard emission factors according to the relevant standards included in **Error! Reference source not found.** and **Error! Reference source not found.** (where applicable).

Declaration of particulate matter emissions (Criterion 7)

'*Relevant documentation' means the test report according to the standards referred.*

Criterion 8: Noise emission limits

The noise emissions shall not exceed the limit values indicated in Table 15. Noise emissions shall be measured at standard rating conditions and rated heat output. The unit of measurement shall be given in dB(A) or dB(C), as appropriate.


A-weighting – dB(A) – is the most common filter applied to noise measurement. A-weighting filters out lower and higher frequencies, much like the human ear. The resulting range is a frequency that is akin to human hearing. C-weighting – dB(C) – filters are commonly available on sound level meters, especially those used to filter out bass frequencies.

Table 15: Noise emission limits by heat generator technology

Heat generator technology	Measurement	Noise emission limit
Heat pump heaters equipped with external combustion and electrically-driven heat pumps	A-weighted sound power level limit value ($L_{WAd, lim}$)	$17 + 36 \times \log(P_N + 10)$ dB(A)
Heat pump heaters equipped with internal combustion engine	A-weighted sound pressure level limit value ($L_{PAd, lim}$)	$30 + 20 \times \log (0.4 \times P_N + 15)$ dB(A)
	C-weighted sound pressure level limit value ($L_{PCd, lim}$)	$L_{PAd, lim}$ + 20 dB(C)
Cogeneration space heaters equipped with internal combustion engine	A-weighted sound pressure level limit value ($L_{PAd, lim}$)	$30 + 20 \times \log (P_E + 15)$ dB(A)
	C-weighted sound pressure level limit value ($L_{PCd, lim}$)	$L_{PAd, lim}$ + 20 dB(C)
Note: P_N means the nominal (full load) or declared heat output; P_E means the electricity output		

Required documentation for Assessment and verification: noise emission limits

A certificate signed by the manufacturer declaring compliance with this criterion shall be submitted to the awarding competent body, together with the relevant documentation.

Testing shall be performed in accordance with EN 12102 for heat pump heaters equipped with external combustion and electrically-driven heat pumps, and EN ISO 3744 or EN ISO 3746 for heat pump and cogeneration space heaters equipped with internal combustion engines. The test report shall be submitted with the application.

Declaration of noise emissions (Criterion 8)

For heat pump and cogeneration space heaters equipped with internal combustion engines, testing should be performed following the procedures in ISO 3744. Only if these procedures cannot be satisfied should the procedures in ISO 3746 be followed.

'*Relevant documentation*' *means the test report according to the standards referred.*

Criterion 9: Hazardous substances and mixtures

In accordance with Article 6(6) of Regulation (EC) No 66/2010, the product or any article of it shall not contain substances referred to in Article 57 of Regulation (EC) No 1907/2006 nor substances or mixtures meeting the criteria for classification in the hazard classes or categories listed in Table 16 in accordance with Regulation (EC) No 1272/2008 of the European Parliament and of the Council ([12]) or with Directive 67/548/EEC.

Table 16: List of hazard statements and risk phrases

Hazard statement ([13])	Risk Phrase ([14])
H300 Fatal if swallowed	R28
H301 Toxic if swallowed	R25
H304 May be fatal if swallowed and enters airways	R65
H310 Fatal in contact with skin	R27
H311 Toxic in contact with skin	R24
H330 Fatal if inhaled	R23/26
H331 Toxic if inhaled	R23
H340 May cause genetic defects	R46
H311 Toxic in contact with skin	R24
H330 Fatal if inhaled	R23/26
H331 Toxic if inhaled	R23
H340 May cause genetic defects	R46
H341 Suspected of causing genetic defects	R68
H350 May cause cancer	R45
H350i May cause cancer by inhalation	R49
H351 Suspected of causing cancer	R40
H360F May damage fertility	R60
H360D May damage the unborn child	R61
H360FD May damage fertility. May damage the unborn child	R60/61/60-61

([12]) OJ L 353, 31.12.2008, p. 1.
([13]) As provided for in Regulation (EC) No 1272/2008.
([14]) As provided for in Directive 67/548/EEC.

H360Fd May damage fertility. Suspected of damaging the unborn child	R60/63
H360Df May damage the unborn child. Suspected of damaging fertility	R61/62
H361f Suspected of damaging fertility	R62
H361d Suspected of damaging the unborn child	R63
H361fd May damage fertility. May damage the unborn child	R62-63
H362 May cause harm to breast fed children	R64
H370 Causes damage to organs	R39/23/24/25/26/27/28
H371 May cause damage to organs	R68/20/21/22
H372 Causes damage to organs	R48/25/24/23
H373 May cause damage to organs	R48/20/21/22
H400 Very toxic to aquatic life	R50/50-53
H410 Very toxic to aquatic life with long-lasting effects	R50-53
H411 Toxic to aquatic life with long-lasting effects	R51-53
H412 Harmful to aquatic life with long-lasting effects	R52-53
H413 May cause long-lasting effects to aquatic life	R53
EUH059 Hazardous to the ozone layer	R59
EUH029 Contact with water liberates toxic gas	R29
EUH031 Contact with acids liberates toxic gas	R31
EUH032 Contact with acids liberates very toxic gas	R32
EUH070 Toxic by eye contact	R39-41

The use of substances or mixtures in the final product which upon processing change their properties in a way that the identified hazard no longer applies is exempted from the above requirement.

Concentration limits for substances or mixtures meeting the criterion for classification in the hazard classes or categories listed in Table 16, and for substances meeting the criteria of Article 57(a), (b) or (c) of Regulation (EC) No 1907/2006, shall not exceed the generic or specific concentration limits determined in accordance with Article 10 of Regulation (EC) No 1272/2008. Where specific concentration limits are determined, they shall prevail against the generic ones.

Concentration limits for substances meeting the criteria of Article 57(d), (e) or (f) of Regulation (EC) No 1907/2006 shall not exceed 0.1 % weight by weight.

The substances or mixtures listed in Table 17 are specifically exempted from the prohibition set out in Article 6(6) of Regulation (EC) No 66/2010.

Table 17: Derogations from the prohibition set out in Article 6(6) of Regulation (EC) No 66/2010

Derogated substances, parts or articles	Derogations
Articles with weight below 25 g	All hazard statements and risk phrases
Homogeneous parts of complex articles with weight below 25 g	All hazard statements and risk phrases
Nickel in stainless steel	H351/372 and R40/48/23


Any articles of the product (or homogenous parts of articles) with a weight below 25 g are except from this criterion.

Required documentation for Assessment and verification: hazardous substances and mixtures

For each article and/or homogeneous part of complex articles with weight over 25 g, the applicant shall provide a declaration of compliance with this criterion, together with the related documentation, such as declarations of compliance signed by the suppliers of substances and copies of relevant Safety Data Sheets in accordance with Annex II to Regulation (EC) No 1907/2006 for substances or mixtures. Concentration limits for substances and mixtures shall be specified in the Safety Data Sheets in accordance with Article 31 of Regulation (EC) No 1907/2006.

Declaration of hazardous substances and mixtures (Criterion 9, Part A)

Declaration of hazardous substances and mixtures (Criterion 9, Part B)

Criterion 10: Substances listed in accordance with Article 59(1) of Regulation (EC) 1907/2006

No derogation from the prohibition set out in Article 6(6) of Regulation (EC) No 66/2010 may be granted concerning substances identified as substances of very high concern and included in the list referred to in Article 59 of Regulation (EC) No 1907/2006, present in mixtures, in an article or in any homogenous part of a complex article in concentrations higher than 0.1 % w/w. Specific concentration limits determined in accordance with Article 10 of Regulation (EC) No 1272/2008 shall apply where the concentration is lower than 0.1 % w/w.

ⓘ *W/W means weight/weight, and infers the percentage of substance by weight. For example, a 28% w/w hydrochloric acid solution means there are 280 grams of hydrochloric acid for every kilogram of the solution.*

Required documentation for Assessment and verification: substances listed in accordance with the REACH regulation

The list of substances identified as substances of very high concern and included in the candidate list in accordance with Article 59 of Regulation (EC) No 1907/2006 can be found here: http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp
Reference to the list shall be made on the date of application.

The applicant shall provide a declaration of compliance with this criterion, together with the related documentation, such as declarations of compliance signed by the suppliers of substances and copies of relevant Safety Data Sheets in accordance with Annex II to Regulation (EC) No 1907/2006 for substances or mixtures. Concentration limits for substances and mixtures shall be specified in the Safety Data Sheets in accordance with Article 31 of Regulation (EC) No 1907/2006.

Declaration of substances listed in accordance with the REACH regulation (Criterion 10, Part A)

Declaration of substances listed in accordance with the REACH regulation (Criterion 10, Part B)

Criterion 11: Plastic parts

If any plasticiser substance in the manufacturing process is applied, it shall comply with the requirements on hazardous substances set out in criteria 9 and 10.

Plastic parts of articles or homogeneous parts of complex articles with weight 25 g or more shall not have chlorine content greater than 50 % by weight.

Plastic parts with weight 50 g or more shall be marked according to the requirements of European Standard EN ISO 11469 to ensure that they are recycled, recovered, or disposed of in the correct manner during the end-of-life phase.

ⓘ *EN ISO 11469 concerns the generic identification and marking of plastics products.*

Required documentation for Assessment and verification: plastic parts

- The applicant shall provide a declaration of compliance with this criterion, together with the related documentation, such as declarations of compliance signed by the suppliers of substances and copies of relevant Safety Data Sheets. The applicant shall provide information on the plasticisers used in the product. The applicant shall provide information on the maximum chlorine content of the plastic parts. A declaration of compliance signed by the plastic suppliers and copies of relevant Safety Data Sheets about materials and substances shall also be provided to the awarding competent body. The applicant shall provide information on the intentionally added substances used as flame retardants.
- Declaration of plastic parts (Criterion 11, Part A)
- Declaration of plastic parts (Criterion 11, Part B)

Criterion 12: Product design for sustainability

The product shall be designed in such a way that its exchangeable components can be replaced easily by service personnel. Information about which elements can be replaced shall be clearly indicated in the information sheet attached to the product. The applicant shall further ensure that genuine or equivalent spare parts are available for at least ten years from the date of purchase.

Repair or replacement of the product shall be covered by the warranty terms for at least five years.

The applicant shall undertake to take the product back free of charge at end-of-life and shall ensure proper recycling or material recovery of the product, while non-recyclable product parts shall be disposed of in an environmentally acceptable manner. The product information shall provide the details of the take-back scheme in place.

 *The applicant shall further ensure that genuine spare parts are available for at least ten years from the date of purchase, in case there are not equivalent ones in the market.*

Required documentation for Assessment and verification: design for sustainability

- The applicant shall provide a declaration of compliance with this criterion, together with the relevant documentation, including a sample or samples of the product information sheet and warranty terms.
- Declaration of design for sustainability (Criterion 12)

Criterion 13: Installation instructions and user information

The product shall be accompanied by relevant installation instructions and user information, which shall give all the technical details needed for a proper installation and shall provide advice on the product's proper and environmentally friendly use as well as its maintenance. It shall bear the following information in print (on the packaging or on the documentation accompanying the product) or in electronic format:

a) a statement informing that the product has been awarded the EU Ecolabel, together with a brief, specific explanation as to what this means in addition to the general information provided alongside the EU Ecolabel logo;

ⓘ *The specific explanation as to what the Ecolabel means shall only relate to the qualities of the product for which the Ecolabel has been awarded. The general information provided alongside the Ecolabel shall relate to the award (e.g. awarded to products and services which meet the environmental requirements of the EU Ecolabelling scheme).*

b) general information on appropriate dimensions of heaters for different building characteristics/size;

c) information on the energy consumption of the heater.

ⓘ *The energy consumption of the heater includes: heat output in kW, power output in kWe (if cogeneration), seasonal space heating energy efficiency, water heating energy efficiency (if a combination heater), electrical efficiency (if cogeneration), and type of energy source (electricity, natural gas, biomass, etc.).*
Note that the Criterion 1b does not apply to solid fuel boilers combination heaters, but the water heating energy efficiency shall be included as part of the information.

d) proper installation instructions, including:

1. instructions specifying that the heater shall be installed by fully trained fitters;
2. any specific precautions that shall be taken when the heater is assembled or installed;

3. instructions specifying that the control settings of the heater ("heating curve") shall be adjusted properly after installation;

ⓘ *The heating curve calculates heating supply temperatures depending on outside temperature. The heating curve shall be adjusted properly after installation, by the fitter.*

4. if applicable (see *Table 1: Applicability of the different criteria to each of the heat generator technologies*), details on what air pollution emission values the flue gas shall have during the operating phase and how the heater should be adjusted to achieve it. In particular, the instructions shall state that:
   - the heater shall be adjusted with the aid of measuring gauges for measuring CO, O_2 or CO_2, NO_x, temperature and soot to ensure that none of the threshold values provided for in criteria 2, 4, 5, 6 and 7 are exceeded;
   - holes shall be made for measuring gauges in the same location as used in laboratory testing;
   - measurement results shall be recorded in a special form or diagram, one copy of which is retained by the end user;

⚠ *The applicant shall provide guidance on where the holes should be made, either in the installation instructions or made available online.*

⚠ *The applicant shall supply a form for measurement results to be recorded.*

5. for low flue gas temperature technology, instructions specifying that the system shall be equipped with corrosion-retarding technology;

6. for condensing boiler technology, instructions specifying that the chimney shall be protected against condensate with low pH;

ⓘ *The condensate that is produced by condensing boilers is slightly acidic, so suitable materials should be used to line (or construct) the chimney. Materials such as aluminium alloys or stainless steel are appropriate for high-temperature condensate, and plastics such as uPVC are appropriate for low-temperature condensate.*

7. information on who the fitter can approach for guidance on installation;

The position of the contact, rather than a named individual, shall be provided along with a main company phone number.

e) operating instructions for service personnel;

f) user information, including:

1. references to competent installers and service personnel;

2. recommendations on the proper use and maintenance of the heater, including the correct fuels to be used and their appropriate storage for optimum combustion and the regular maintenance schedule to keep;

3. advice on how rational use can minimise the environmental impact of the heater, in particular information on proper product's use to minimise energy consumption;

4. if applicable, information on how the measurement results should be interpreted and how they can be improved.

The measurement results refer to the air pollution emission tests performed (if applicable) under Criterion d) 4.

5. information about which spare parts can be replaced;

g) recommendations on appropriate disposal at product's end-of-life.

Required documentation for Assessment and verification: installation and user instructions

The applicant shall declare that the product complies with this criterion and provide the competent body with a sample or samples of the user information or a link to a manufacturer's website containing this information as part of the application.

Declaration of installation instructions and user information (Criterion 13)

Criterion 14: Information appearing on the EU Ecolabel

The optional label with text box shall contain the following text:

- Increased energy efficiency
- Reduced greenhouse gas emissions
- Reduced air emissions

The product-specific text can be included in the product information (either in print or online) as an optional logo text box, if desired.

The guidelines for the use of the optional label with text box can be found in the "Guidelines for use of the Ecolabel logo" on the website:

http://ec.europa.eu/environment/ecolabel/documents/logo_guidelines.pdf

ⓘ *Note that the Competent Body will ask for sample of packaging to check these requirements are being fulfilled.*

Required documentation for Assessment and verification: information appearing on the EU Ecolabel

The applicant shall provide a sample of the printed paper product showing the label, together with a declaration of compliance with this criterion.

Declaration of information on label (Criterion 14)

Part C: Application Form

Please contact your Competent Body to learn how your completed application form and supporting documentation should be submitted.

See section 1.4 in Part A, "Where do I apply?" for further details of where to send your application once completed.

Applicants should also provide a technical dossier of laboratory test reports and send this in ***duplicate*** *to the Competent Body, and keep an up-to-date file on their premises showing continuing compliance with the criteria. Equivalent test methods, others than the ones indicated by the formal Commission Decision may be used provided the test methods have been approved by the awarding Competent Body.*

Applicant information	
Applicant's full company name and address:	
Contact person:	
Position:	
Phone:	
Fax:	
Email:	
Website:	
VAT number or equivalent if relevant:	
If relevant, existing licence number: XX/YYY	
In what capacity are you applying for the EU Ecolabel (tick as appropriate):	Manufacturer....☐ Importer....☐ Service provider....☐ Wholesaler....☐ Retailer....☐
Product Information	
What product group are you applying for?	
Please give general specification of the product(s), including registered name(s) ie. Trade name, trademarks, paint type/description	
Name and address of manufacturing site(s) (if different from above)	
In case the product is made outside the European Economic Area market (European Union plus Iceland, Lichtenstein and Norway), please confirm the country where it has been or will be placed on the market.	*[insert name of country where application is received]*

Please state EU countries in which this product is sold <u>in the same form</u> (if sold under different names, please state names to be registered)	
Information on the application	
Is this the first application for the EU Ecolabel for the product(s) specified above	Yes....☐ No....☐
If no, please state when and where the first application was made, and with what outcome	
Is this an application to add a new product (i.e. with a technical formulation not covered by an existing Ecolabel that you hold) to a licence for a product range already covered by an Ecolabel? (if so, please give details of the existing Ecolabel)	Yes....☐ No.....☐ Details:
Please indicate if an application for the same product has been successful under other environment label schemes (e.g. the Nordic Ecolabel or Blue Angel)	Yes....☐ No....☐
Does the laboratory where the tests were conducted meet the general requirements expressed in standard EN ISO 17025	Yes....☐ No....☐

Application fees:

An invoice will be sent when the application and the attached declarations are received. Before the application can be processed, the applicant must pay the application fee relevant for the company. Please refer to your Competent Body for fees.

This declaration is to be used so that the Competent Body can set the appropriate application and eventually annual licence fees for the EU Ecolabel cf. Regulation (EC) No 66/2010 of The European Parliament and of The Council of 25 November 2009 on the EU Ecolabel appendix III.

All questions below have to be answered before handling of the application can begin.

Declaration: Type of Company	
Is the company a micro sized company as defined in the Commission's Recommendation 2003/361/EC - i.e. under 10 employees and an annual turnover or total annual balance not exceeding 2 mill. Euro?	Yes… ☐ No…. ☐
Is the company a small or medium sized company as defined in the Commission's Recommendation 2003/361/EC – i.e. under 250 employees and an annual turnover not exceeding 50 mill. Euro or total annual balance not exceeding 43 mill. Euro?	Yes… ☐ No…. ☐
Is the company situated in a developing country (as defined in the OECD's Development Assistance Committee's list of countries receiving development aid)?	Yes… ☐ No…. ☐
Is the company registered under EMAS and/or certified under ISO 14001 and has the company in its environmental policy, committed to maintain compliance of its EU Ecolabel products with the EU Ecolabel product group criteria throughout the contract's period of validity?[15]	Yes… ☐ No…. ☐
Date:	
Company Name:	
Company Stamp:	
Responsible person's signature	
Print in capitals the name of above signatory	

[15] If confirmed the company must send a copy of the annual affirmative environmental statement (EMAS) or valid ISO 14001 certificate and copy of the companies environmental policy and objectives (ISO 14001) in connection with the application and information on the annual turnover.

Applicant's undertaking

As the applicant for an EU Ecolabel, I hereby declare that:

I understand and accept the provisions of Regulation EC No. 66 / 2010 on the EU Ecolabel scheme, and in particular Article 6, paragraph 6, which states that the EU Ecolabel may not be awarded to goods containing substances or preparations/ mixtures meeting the criteria for classification as toxic, hazardous to the environment, carcinogenic, mutagenic or toxic for reproduction (CMR), in accordance with Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures [11], nor to goods containing substances referred to in Article 57 of Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency. (Note that article 7 enables the Commission to adopt measures to grant derogations from paragraph 6 under certain conditions);

*I undertake to ensure that the product compiles with the EU Ecolabel criteria at all times and to notify [*_____] immediately of any significant modification to it or to the production processes.*

I take responsibility for the correct and proper use of the EU Ecolabel logo.

Signed:

Name in capitals:

Position in company:

Date:

Company stamp:

* Insert name of Competent Body

Part D: Declarations

Summary of declarations:

Click to view and print

Declaration: Criterion 1 a): seasonal space heating energy efficiency

As the applicant. I the undersigned, hereby declare that:

The **seasonal space heating energy efficiency** (n_s) of the product complies with Criterion 1 a), namely that:

a) the relevant testing procedure for calculating the n_s value has been followed, as listed in the following table (please select the applicant product heater type):

Heater type	Corresponding standard (and testing procedure)	Applicant product is of this heater type (please select)
Gas boiler	EN 15502-1, Regulation EU No 813/2013 and Transitional methods	YES / NO
Liquid fuel boiler (with forced draught burner)	EN 303-1 Regulation EU No 813/2013 and Transitional methods	YES / NO
Liquid fuel boiler (with atomizing oil burner)	EN 304 Regulation EU No 813/2013 and Transitional methods	YES / NO
Solid fuel boiler	EN 303-5	YES / NO
Electric boiler	EN 60335-2-35 Regulation EU No 813/2013 and Transitional methods	YES / NO
Fuel-driven heat pump	DIN 4702, Part 8, Regulation EU No 813/2013 and Transitional methods	YES / NO
Electrically-driven heat pump	EN 14825, Regulation EU No 813/2013 and Transitional methods	YES / NO
Cogeneration space	EN 50465, Regulation EU No 813/2013 and Transitional methods	YES / NO
Package of space heaters	Regulations EU No 813/2013, No 811/2013 and Transitional methods	YES/NO

b) either point i. or point ii. below has been satisfied (please supply the n_s value):

i. All heaters except solid biomass heaters

The applicant product has a seasonal space heating energy efficiency of ≥ 98%, as calculated in

Declaration: Criterion 1 a): seasonal space heating energy efficiency

accordance with the procedures set out in Annex III to Regulation (EU) No 813/2013 and in Annex VII to Regulation (EU) No 811/2013 including, where applicable: the harmonised standards (the reference numbers of which have been published for this purpose in the Official Journal of the European Union); or other reliable, accurate and reproducible methods that take into account the generally recognised state-of-the-art methods and that meet the conditions and technical parameters set out in Annex III of Regulation (EU) No 813/2013.

This point applies to the applicant product, for which the n_s value is %.

OR

ii. Solid biomass boiler heaters

The applicant product has a seasonal space heating energy efficiency of ≥ 79%, as calculated in accordance with the procedures set out in Annex III to Regulation (EU) No 813/2013, the additional requirements set out in this document, and the testing procedures set out in the relevant EN (see above table).

This point applies to the applicant product, for which the n_s value is %.

NB. Please attach test results conducted in accordance with the testing procedure indicated in the relevant EN standard (including transitional methods where applicable.

Responsible person's position:	
Responsible person's signature:	
Date:	
Company Stamp:	

Declaration: Criterion 1 b): water heating energy efficiency

As the applicant, I the undersigned, hereby declare that:

The **water heating energy efficiency** (n_{wh}) of the product complies with Criterion 1 (b), namely that:

a) The product has a minimum n_{wh} of 65% (not applicable to solid fuel heaters)
b) be calculated in accordance with the procedures set out in Annex III to Regulation (EU) No 813/2013 and in Annex VII to Regulation (EU) No 811/2013

Please supply the n_{wh} value of the product in the row of the relevant heater type below:

Heater type	Water heating energy efficiency (n_{wh})
Gas boiler	%
Liquid fuel boiler (with forced draught burner)	%
Liquid fuel boiler (with atomizing oil burner)	%
Electric boiler	%
Fuel-driven heat pump	%
Electrically-driven heat pump	%
Cogeneration space	%
Package of space heaters	%

Please attach test results conducted in accordance with the testing procedure indicated in the EN standards (including transitional methods where applicable) applicable to the given type of product

Responsible person's position:	
Responsible person's signature:	
Date:	
Company Stamp:	

Declaration: Criterion 2: greenhouse gas emission limits

As the applicant. I the undersigned, hereby declare that:

1. The greenhouse gas (GHG) emissions of the water-based heater, expressed in grams of CO_2-equivalent per kWh of heating output have been calculated using the Total Equivalent Warming Impact (TEWI) formulas, and do not exceed the values in the table below:

Heat generator technology	GHG emission limits
All heaters, except heat pump heaters	200 g CO_2-equivalent/kWh heating output
Heat pump heaters	150 g CO_2-equivalent/kWh heating output

2. The calculated GHG emissions (following the TEWI formula) are provided in the relevant row of the below table

Heat generator technology	TEWI result (g CO_2-equivalent/kWh heating output)
Boiler heaters	
Heat pump heaters	
Cogeneration space heaters	
Package of space heaters	

3. The parameters used to calculate the GHG emissions are listed in the table below, with their value(s)

Parameter	Used	Description	Unit	Constant/tested	Value
β_{elec}	Yes / No	GHG emission intensity of electricity	[g CO_2-equivalent/kWh_{elec}]	Constant	β_{elec} = 384
β_{fuel}	Yes / No	GHG emission intensity of the fuel used by the heater	[g CO_2-equivent/kWh]	Constant (see *Table 9*).	β_{fuel} =
η_s	Yes / No	Seasonal space heating energy efficiency	[-]	Tested	η_s =
$\eta_{s,B}$	Yes / No	Seasonal space heating energy efficiency of the boiler heater part for average climate conditions	[-]	Tested	$\eta_{s,B}$ =

Declaration: Criterion 2: greenhouse gas emission limits

$\eta_{s,HP}$	Yes / No	Seasonal space heating energy efficiency of the heat pump heater part for average climate conditions	[-]	Tested	$\eta_{s,HP}$ =
$\eta_{thermal}$	Yes / No	Thermal efficiency	[-]	Tested (see Table 10)	$\eta_{thermal}$ =
η_{el}	Yes / No	Electrical efficiency	[-]	Tested (see Table 10)	η_{el} =
δ	Yes / No	Proxy	[-]	Constant: = 0 if electrically-driven heat pump heater = 1 if fuel-driven heat pump heater	δ =
GWP_{100}	Yes / No	Global warming potential (effect over 100 years)	[g CO_2-equivalent/g refrigerant, over 100 year period]	Tested	GWP_{100} =
m	Yes / No	Refrigerant mass	[g]	Tested	m =
ER	Yes / No	Refrigerant loss per year	[%/yr]	Constant	ER = 3.5%/year
n	Yes / No	Lifetime	[yr]	Constant	n = 15
α	Yes / No	Refrigerant loss at end of life (disposal loss)	[%]	Constant	α = 35%
P	Yes / No	Design load	[kW]	Tested	P =
h	Yes / No	Full load operating hours	[h/yr]	Constant	H = 2000
s_{HP}	Yes / No	Share of heat output from the heat pump heater part over the total heat output	[-]	Tested (see Table 8)	s_{HP} =

Please attach a copy of the GHG calculations for the applicant product (following the TEWI formulas)

Declaration: Criterion 2: greenhouse gas emission limits	
Responsible person's position:	
Responsible person's signature:	
Date:	
Company Stamp:	

Declaration: Criterion 3: Refrigerants

As the applicant. I the undersigned, hereby declare that:

1. **For the refrigerant(s) used in the applicant product**

The names of the refrigerants(s) used in the applicant product are listed below, along with their GWP_{100} values as defined in Regulation (EC) No 842/2006, and that the GWP_{100} values have been calculated in terms of the 100-year warming potential of one kilogram of a gas relative to one kilogram of CO_2.

Refrigerant used in product	GWP_{100} value of refrigerant

2. **For the secondary refrigerant(s) used in the applicant product**

The names of the secondary refrigerant(s) used in the product are listed below.

Secondary refrigerant used in product

Responsible person's position:	
Responsible person's signature:	
Date:	
Company Stamp:	

Declaration: Criterion 4: Nitrogen oxide emissions

As the applicant. I the undersigned, hereby declare that:

1. The NO_x emissions associated with the exhaust gas of the applicant product do not exceed the limits stated in the below table. NO_x emissions are measured as the sum of nitrogen monoxide and nitrogen dioxide, and at the following operating conditions:
   - Gas and liquid heaters, at standard rating conditions and rated heat output
   - Solid fuel heaters, as seasonal space heating emissions according to Table 4.

2. The NO_x emissions in the exhaust gas have been determined as standard emission factors according to the relevant standards included in Table 2 and Table 3 (where applicable), as highlighted in the below table.

Heat generator technology	NO_x emission limit	Standard used to test NO_x emissions	NO_x emission result (please specify unit)
Gas heaters	Equipped with internal combustion engine: 170 mg/kWh GCV energy input. Equipped with external combustion: 36 mg/kWh GCV energy input.		
Liquid fuel heaters	Equipped with internal combustion engine: 380 mg/kWh GCV energy input. Equipped with external combustion: 100 mg/kWh GCV energy input.		
Solid fuel heaters	150 mg/Nm^3 at 10 % O_2.		

NB. Please attach a copy of the NO_x calculations for the applicant product and the test report conducted in accordance with the testing procedure indicated in the EN standards.

Responsible person's position:	
Responsible person's signature:	
Date:	

Declaration: Criterion 4: Nitrogen oxide emissions	
Company Stamp:	

Declaration: Criterion 5: Carbon monoxide emissions

As the applicant. I the undersigned, hereby declare that:

1. The CO emissions associated with the exhaust gas of the applicant product do not exceed the limits stated in the below table. CO emissions are measured at the following operating conditions:
    - Gas and liquid heaters, at standard rating conditions and rated heat output
    - Solid fuel heaters, as seasonal space heating emissions according to Table 4.

2. The CO emissions in the exhaust gas have been determined as standard emission factors according to the relevant standards included in Table 2 and Table 3 (where applicable), as highlighted in the table below.

Heat generator technology	CO emission limit	Standard used to test CO emissions	CO emission result (please specify unit)
Gas heaters	Equipped with internal combustion engine: 150 mg/Nm^3 at 5 % O_2. Equipped with external combustion: 25 mg/kWh GCV energy input.		
Liquid fuel heaters	Equipped with internal combustion engine: 200 mg/Nm^3 at 5 % O_2. Equipped with external combustion: 50 mg/kWh GCV energy input.		
Solid fuel heaters	Automatically stoked: 175 mg/Nm^3 at 10 % O_2. Manually stoked: 250 mg/Nm^3 at 10 % O_2.		

NB. Please attach a copy of the CO calculations for the applicant product and the test report conducted in accordance with the testing procedure indicated in the EN standards.

Responsible person's position:	
Responsible person's signature:	
Date:	
Company Stamp:	

Declaration: Criterion 6: Organic gaseous carbon emissions

As the applicant. I the undersigned, hereby declare that:

1. Is the applicant product is a solid fuel boiler heater?

YES / NO

2. If 'YES' to 1.,
   (a). the OGC emissions associated with the exhaust gas of the solid fuel applicant product do not exceed the limits stated in the below table). OGC emissions are measured as seasonal space heating emissions, according to Table 4. and
   (b). the OGC emissions in the exhaust gas have been determined as standard emission factors according to the relevant standards included in Table 2 and Table 3 (where applicable), as highlighted in the below table.

Heat generator technology	OGC emission limit	Standard used to test OGC emissions	OGC emission result (mg/Nm^3)
Solid fuel heaters	7 mg/Nm^3 at 10% O_2		

NB. Please attach a copy of the OGC calculations for the applicant solid fuel boiler heater product and the test report conducted in accordance with the testing procedure indicated in the EN standards..

Responsible person's position:	
Responsible person's signature:	
Date:	
Company Stamp:	

Declaration: Criterion 7: Particulate matter (PM) emissions

As the applicant. I the undersigned, hereby declare that:

1. The PM emissions associated with the exhaust gas of the applicant product do not exceed the limits stated in the below table. PM emissions are measured at the following operating conditions:
   - Liquid heaters, at standard rating conditions and rated heat output.
   - Solid fuel heaters, as seasonal space heating emissions according to Table 4.

2. The PM emissions in the exhaust gas have been determined as standard emission factors according to the relevant standards included in Table 2 and Table 3 (where applicable), as highlighted in the below table.

Heat generator technology	PM emission limit	Standard used to test PM emissions	PM emission result (mg/Nm^3)
Liquid heaters	Equipped with internal combustion engine: 1 mg/Nm^3 at 5% O_2 Equipped with external combustion: no limit		
Solid fuel heaters	20 mg/Nm^3 at 10% O_2		

NB. Please attach a copy of the PM calculations for the applicant product and the test report conducted in accordance with the testing procedure indicated in the EN standards..

Responsible person's position:	
Responsible person's signature:	
Date:	
Company Stamp:	

Declaration: Criterion 8: Noise emissions

As the applicant. I the undersigned, hereby declare that:

1. The noise emissions associated with the applicant product do not exceed the limits stated in the below table.
2. The noise emission test has been performed in accordance with EN 12102 for heat pump heaters equipped with external combustion and electrically-driven heat pumps, and EN ISO 3744 or EN ISO 3746 (ISO 3744 as first priority) for heat pump and cogeneration space heaters equipped with internal combustion engines, the results of which are stated in the table below.

Heat generator technology	Measurement	Noise emission limit	Noise emission result
Heat pump heaters equipped with external combustion and electrically-driven heat pumps	A-weighted sound power level limit value ($L_{WAd, lim}$)	$17 + 36 \times \log(P_N + 10)$ dB(A)	
Heat pump heaters equipped with internal combustion engine	A-weighted sound pressure level limit value ($L_{PAd, lim}$)	$30 + 20 \times \log (0.4 \times P_N + 15)$ dB(A)	
	C-weighted sound pressure level limit value ($L_{PCd, lim}$)	$L_{PAd, lim}$ + 20 dB(C)	
Cogeneration space heaters equipped with internal combustion engine	A-weighted sound pressure level limit value ($L_{PAd, lim}$)	$30 + 20 \times \log (P_E + 15)$ dB(A)	
	C-weighted sound pressure level limit value ($L_{PCd, lim}$)	$L_{PAd, lim}$ + 20 dB(C)	

NB. Please attach a copy of the noise testing documentation for the applicant product and the test report conducted in accordance with the testing procedure indicated in the EN standards..

Responsible person's position:	
Responsible person's signature:	
Date:	
Company Stamp:	

Declaration: Criterion 8: Noise emissions	

Declaration: Criterion 9: Hazardous substances and mixtures (Part A)

As the applicant. I the undersigned, hereby declare that:

All product articles and/or homogeneous parts of complex articles with weights over 25 g:

1. are listed in the table below (in column 1)
2. comply with this criterion (please answer 'yes' in column 2)
3. have the related compliance documentation attached, such as a supplier compliance declaration (see Declaration 9, Part B) and Safety Data Sheet (please indicate the type of document in column 3)
4. any attached Safety Data Sheets are in accordance with Annex II to Regulation (EC) No 1907/2006 for substances or mixtures, and include concentration limits.

Product article	Article complies with criterion	Type of compliance documentation attached (e.g. declaration, SDS)

Responsible person's position:	
Responsible person's signature:	
Date:	
Company Stamp:	

Declaration: Criterion 9: Hazardous substances and mixtures (Part B)

As a supplier of material(s),with weight over 25 g, to
(the applicant for water-based heaters), I the undersigned, hereby declare that:

- The material(s) supplied in the use of the applicant product (listed in the table below) comply with Criterion 9 (hazardous substances and mixtures) of the Commission Decision of 2014 establishing the ecological criteria for the award of the EU Ecolabel for water-based heaters (2014/314/EC).

Material supplied to applicant	Weight of material (g)
Responsible person's position (supplier):	
Responsible person's signature (supplier):	
Date (supplier):	
Company Stamp (supplier):	

As the applicant for water-based heaters that comply with the EU Ecolabel. I the undersigned, hereby declare that:

- The above mentioned supplier has supplied the material(s) listed in the table above for use in the applicant product.

Responsible person's position (applicant):	
Responsible person's signature (applicant):	
Date (applicant):	
Company Stamp (applicant):	

Declaration: Criterion 10: Substances listed in accordance with the REACH regulation (Part A)

As the applicant for water-based heaters that comply with the EU Ecolabel. I the undersigned, hereby declare that:

The substances present in the applicant product:

1. are listed in the table below (in column 1)
2. comply with this criterion (please answer 'yes' in column 2)
3. have the related compliance documentation attached, such as a supplier compliance declaration (see Declaration 10, Part B) and Safety Data Sheet (please indicate the type of document in column 3)
4. any attached Safety Data Sheets are in accordance with Annex II to Regulation (EC) No 1907/2006 for substances or mixtures, and include concentration limits.

Substance(s) present in product	Substance complies with criterion	Type of compliance documentation attached (e.g. declaration, SDS)

Responsible person's position:	
Responsible person's signature:	
Date:	
Company Stamp:	

Declaration: Criterion 10: Substances listed in accordance with the REACH regulation (Part B)

As a supplier of substance(s) to (the applicant for water-based heaters), I the undersigned hereby declare that:

- The substance(s) supplied to the applicant for use in the applicant product comply with Criterion 10 of the Commission Decision of 2014 establishing the ecological criteria for the award of the EU Ecolabel for water-based heaters (2014/314/EC).

Substance(s) supplied to applicant

As the applicant for water-based heaters that comply with the EU Ecolabel. I the undersigned, declare that:

- The above mentioned supplier has supplied the substance(s) listed in the table above for use in the applicant product.

Responsible person's position (supplier):	
Responsible person's signature (supplier):	
Date (supplier):	
Company Stamp (supplier):	
Responsible person's position (applicant):	
Responsible person's signature (applicant):	
Date (applicant):	
Company Stamp (applicant):	

Declaration: Criterion 11: Plastic parts (Part A)

As the applicant. I the undersigned, hereby declare that:

1. the plasticisers used in the applicant product, listed in the table below, comply with Criteria 9 and 10 (Please answer 'yes' in columns 2 and 3)

Plasticiser(s) used in product	Complies with Criterion 9	Complies with Criterion 10

2. plastic parts of articles or homogenous parts of complex articles with weight 25 g or more, listed in the table below, do not have chlorine content greater than 50% by weight

Plastic parts of product articles	Maximum chlorine content of plastic article (%)

3. the substances listed in the table below have been intentionally added to the product as flame retardants

Substance(s) added to product as flame retardant

Declaration: Criterion 11: Plastic parts (Part A)

4. any attached Safety Data Sheets (listed in the table below) are in accordance with Annex II to Regulation (EC) No 1907/2006 for substances or mixtures, and include concentration limits.

Substance(s) or material(s) for which Safety Data Sheets are attached

Responsible person's position:	
Responsible person's signature:	
Date:	
Company Stamp:	

Declaration: Criterion 11: Plastic parts (Part B)

As a supplier of plastic material(s) to (the applicant for water-based heaters), I the undersigned, hereby declare that:

- The plastic material(s) supplied in the use of the applicant product (listed in the table below) comply with Criterion 9 (hazardous substances and mixtures) and Criterion 10 (substances listed in accordance with the REACH regulation) of the Commission Decision of 2014 establishing the ecological criteria for the award of the EU Ecolabel for water-based heaters (2014/314/EC).

Plastic material(s) supplied to applicant and used in the applicant product

Responsible person's position (supplier):	
Responsible person's signature (supplier):	
Date (supplier):	
Company Stamp (supplier):	

As the applicant. I the undersigned, hereby declare that:

- The above mentioned supplier has supplied the plastic material(s) listed in the table above for use in the applicant product.

Responsible person's position (applicant):	
Responsible person's signature (applicant):	
Date (applicant):	
Company Stamp (applicant):	

Declaration: Criterion 12: Designing for sustainability

As the applicant for water-based heaters that comply with the EU Ecolabel. I the undersigned, hereby declare that:

The product information sheet includes:

- the components of the product that can be exchanged
- details of the take-back scheme in place

The warranty terms allow for:

- genuine or equivalent spare parts to be available for at least 10 years from the date of purchase
- repair or replacement of the product to be covered for at least 5 years

NB Please provide the product information sheet and warranty terms.

Responsible person's position:	
Responsible person's signature:	
Date:	
Company Stamp:	

Declaration: Criterion 13: Installation instructions and user information

As the applicant. I the undersigned, hereby declare that:

The **installation instructions** provided with the product (or made available online) include:

- a statement about the award of the EU Ecolabel and its meaning
- appropriate dimensions of heaters for different building characteristics
- energy consumption
- full installation instructions (as specified under criterion 13 in this manual)
- air pollution emission values (if applicable)
- guidance on fitting corrosion-retarding technology with low flue gas temperature products (if applicable)
- guidance on appropriate chimney materials to be used with condensing boiler products (if applicable)
- guidance or installation contacts for the fitter
- operating instructions for service personnel

The **user instructions** provided with the product (or made available online) include:

- competent installers and service personnel contacts
- guidance on product use and maintenance
- environmental impact minimisation guidance
- air pollution emission testing measurement guidance (if applicable)
- information around parts replacement and end-of-life disposal

Please provide a sample or samples of the user information and/or a link to a manufacturer's website containing this information.

Responsible person's position:	
Responsible person's signature:	
Date:	
Company Stamp:	

Optional Declaration: Criterion 14: Information appearing on the EU Ecolabel

As the applicant. I the undersigned, hereby declare that:

The label with text box contains, where relevant, the following texts:

- Increased energy efficiency
- Reduced greenhouse gas emissions
- Reduced air emissions

Please provide the artwork or samples of the packaging.

Responsible person's position:	
Responsible person's signature:	
Date:	
Company Stamp:	

Part E: Checklist

Applicant's Checklist **This checklist summarises the documentation to be provided for each criterion. This checklist must be completed by the applicant.**	Mark when done	
Documents to be submitted to the Competent Body:	Included	Does not apply
Part C: Application form		
Criterion 1: Minimum energy efficiency		
1(a) Minimum seasonal space heating energy efficiency		
Documents to be submitted to the Competent Body:	Included	Does not apply
Test results applicable to the given type of product.		
Declaration of seasonal space heating energy efficiency (Criterion 1 a)		
1(b) Minimum water heating energy efficiency		
Documents to be submitted to the Competent Body:	Included	Does not apply
Test results applicable to the given type of product.		
Declaration of water heating energy efficiency (Criterion 1 b)		
Criterion 2: Greenhouse gas (GHG) emission limits		
Documents to be submitted to the Competent Body:	Included	Does not apply
Copy of the GHG calculations for the applicant product		
Declaration of greenhouse gas emissions (Criterion 2)		
Criterion 3: Refrigerant and secondary refrigerant		
Documents to be submitted to the Competent Body:	Included	Does not apply
Declaration of refrigerants in product (Criterion 3)		

Criterion 4: Nitrogen oxide (NOx) emission limits		
Documents to be submitted to the Competent Body:	Included	Does not apply
Declaration of nitrogen oxide emissions (Criterion 4)		
Copy of NOx calculations for applicant product.		
Criterion 5: Carbon monoxide (CO) emission limits		
Documents to be submitted to the Competent Body:	Included	Does not apply
Declaration of carbon monoxide emissions (Criterion 5)		
Copy of CO calculations for applicant product.		
Criterion 6: Organic gaseous carbon (OGC) emission limits		
Documents to be submitted to the Competent Body:	Included	Does not apply
Declaration of organic gaseous carbon emissions (Criterion 6)		
Copy of OGC calculations for the solid fuel boiler heater product.		
Criterion 7: Particulate matter (PM) emission limits		
Documents to be submitted to the Competent Body:	Included	Does not apply
Declaration of particulate matter emissions (Criterion 7)		
Copy of PM calculations for the applicant product		
Criterion 8: Noise emission limits		
Documents to be submitted to the Competent Body:	Included	Does not apply
Declaration of noise emissions (Criterion 8)		
Copy of noise testing documentation for the applicant product.		

Criterion 9: Hazardous substances and mixtures		
Documents to be submitted to the Competent Body:	Included	Does not apply
Copies of relevant Safety Data Sheets.		
Declaration of hazardous substances and mixtures (Criterion 9, Part A)		
Declaration of hazardous substances and mixtures (Criterion 9, Part B)		
Criterion 10: Substances listed in accordance with Article 59(1) of Regulation (EC) 1907/2006		
Documents to be submitted to the Competent Body:	Included	Does not apply
Copies of relevant Safety Data Sheets.		
Declaration of substances listed in accordance with the REACH regulation (Criterion 10, Part A)		
Declaration of substances listed in accordance with the REACH regulation (Criterion 10, Part B)		
Criterion 11: Plastic parts		
Documents to be submitted to the Competent Body:	Included	Does not apply
Copies of relevant Safety Data Sheets from applicant & supplier.		
Declaration of plastic parts (Criterion 11, Part A)		
Declaration of plastic parts (Criterion 11, Part B)		
Criterion 12: Product design for sustainability		
Documents to be submitted to the Competent Body:	Included	Does not apply
The product information sheet and warranty terms.		
Declaration of design for sustainability (Criterion 12)		

Criterion 13: Installation instructions and user information		
Documents to be submitted to the Competent Body:	Included	Does not apply
A sample or samples of the user information, or a link to the manufacturer's website containing this information.		
Declaration of installation instructions and user information (Criterion 13)		
Criterion 14: Information appearing on the EU Ecolabel		
Documents to be submitted to the Competent Body:	Included	Does not apply
The artwork or samples of packaging.		
Declaration of information on label (Criterion 14)		