Energy Technology List
ECA SCHEME

CARBON TRUST

Product application checklist

Please complete in BLOCK CAPITALS

Boilers: Burners with controls

Manufacturer/supplier name: .....

ETL licence number (if applicable): .....

Applicant's name: .....

Telephone number: .....

Product information

Product name: .....

Model number: .....

Please complete each section of this form based on your product's characteristics. Incomplete or incorrect data could affect the processing of your product application.

Each product application should be made on a separate form unless a product's design characteristics are common to all the products. In this instance a single application can be made for multiple products.

1.	Product testing and certification (Please tick one)	No	Yes
Where type testing has been applied to demonstrate product performance ensure that the information supplied is sufficient to demonstrate the performance of all the products for which applications are being made.			
1.1	**Does the product conform to the requirements of the EU Pressure Equipment Directive PED 97/23/EC in respect of its design, manufacture and testing procedures?**	☐	☐
1.2	**Is the product CE marked?**	☐	☐
1.3	**For products with a thermal input greater than or equal to 1MW, and less than 50MW, does the product comply with the minimum requirements as stated in Annex II of the Medium Combustion Plant Directive (EU) 2015/2193?**	☐	☐
1.3	**Has the product been tested at the specified test points (see Table 1) in accordance with the procedures and test conditions provisions in one of the following standards?** *(tick all that apply).*		
	a) BS EN 676:2003 (as amended) (gas-fired burners).		☐
	b) BS EN 267:2009 (oil-fired burners).		☐
	C) ISO 13579-1:2013 (as amended) (both gas-fired and oil-fired burners)		☐
	Dual fuel burners must be tested in accordance with both of these standards.		

1.	Product testing and certification (continued)	No	Yes

1.4 **How was the product(s) performance tested?** *(Please select one).*

a) Tested in the manufacturer's in-house laboratory, in accordance with a registered Quality Management System (i.e. 'self-tested'). ☐

b) Tested in a laboratory either in house or on-site, witnessed by an independent body (i.e. 'witnessed testing'). ☐

c) Tested by an independent laboratory (i.e. 'independent testing'). ☐

Please refer to Section 2 of ECA Guidance Note 5 "ECA Testing Programme: Energy Technology List (ETL) Product Testing Framework" for details of the requirements that must be satisfied for each of these product testing options.

1.5 **Where product testing has been done in accordance with a registered Quality Management System, what is its registration number?**

.....

1.6 **Where product testing has been witnessed by an independent body, what was the name of the witness?** *(Please include contact details).*

.....

.....

1.7 **Where products have been tested by an independent laboratory:**

a) What is the name of the independent laboratory?

.....

b) What is the laboratory's registration number (where accredited)?

.....

1.8 **Is the application for:** *(please select one).*

a) A product with individual performance test data *(Go to 2).* ☐

b) A product that is a variant of the same basic design as other products listed on the ETPL, where performance test data for "Representative models" has already been submitted in a previous application. ☐

c) A product that is a variant of the same basic design as other products that are not yet on the ETPL, and where performance test data is being submitted for "Representative models" with this application. ☐

1.9 **What are the "Representative models":**

ETL Product ID number	Product model numbers
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....

Products will only be considered to be variants of the same basic design, if they:

- Are designed to burn the same fuel(s) as the representative models.
- Have the same basic constructional design as the representative models.
- Use the same burner control system / mechanisms as the representative models.
- Have the same or better energy efficiency as the representative models.

2.	Product features	No	Yes
2.1	**What is the rated output of the product in kW?**		
2.2	**What category of product are you applying for?** *(tick one).*		
	1) Gas fired and dual fuel burners rated up to, and including, 400 kW.		☐
	2) Gas fired and dual fuel burners rated between 401 kW and 1,200 kW.		☐
	3) Gas fired and dual fuel burners rated in excess of 1,200 kW.		☐
	4) Oil fired burners rated up to, and including, 400 kW.		☐
	5) Oil fired burners rated between 401 kW and 1,200 kW.		☐
	6) Oil fired burners rated in excess of 1,200 kW.		☐
	7) Gas fired burners designed to operate with external or built-in thermal storage material that recovers exhaust gas heat (of all rated outputs).		☐
	8) Gas fired burners designed to operate with external or built-in exhaust gas recovery heat exchanger (of all rated outputs).		☐
	Dual fuel means the product can separately burn both gas and oil based fuels.		
2.3	**Which fuels is the product specifically designed to burn?** *(tick all that apply).*		
	a) Natural gas		☐
	b) Gas oil.		☐
	c) Light fuel oil.		☐
	d) Heavy fuel oil		☐
	e) LPG.		☐
	f) Propane.		☐
	g) Kerosene.		☐
	h) Bio-diesel.		☐
	i) Residual oil .		☐
	j) Tallow Oil.		☐
	k) Other fuels *(Please specify).*		☐

3.	Product features	N/A	No	Yes
3.1	**Does the product use a forced draught burner?**		☐	☐
3.2	**Is the product fitted with air dampers that fully close on burner shutdown?**		☐	☐
3.3	**Does the product use any form of mechanical linkage between its modulating fuel valve, and its air damper or control valve, to adjust the product's air to fuel ratio?**		☐	☐
3.4	**Is the product fitted with a burner heat input control system which is amplitude-modulating or frequency-modulating (pulse firing)?**		☐	☐
3.5	**Does the product have a thermal output in excess of 400kW?** *If no, proceed to section 3.10.*		☐	☐
3.6	**Does the product use a microprocessor based burner control system?**		☐	☐
3.7	**Does the product use mechanical dampers to modulate air flow?** *If no, proceed to section 3.8.*		☐	☐
3.8	**Are all mechanical air dampers operated by a precision servomotor that is controlled by a positional or flow based feedback mechanism that automatically adjusts its operation to correct for mechanical wear, valve stiction and hysteresis?**		☐	☐

3.	Product features (continued)	N/A	No	Yes
3.9	**Does the product use control valves to modulate fuel flow?** *If no, proceed to section 3.10.*		☐	☐
3.10	**Are all fuel control valves operated by a precision servomotor that is controlled by a positional or flow based feedback mechanism that automatically adjusts its operation to correct for mechanical wear, valve stiction and hysteresis?** *This requirement is not applicable to pneumatically operated modulating gas valves.*	☐	☐	☐
3.11	**Is the product gas-fired or dual fuelled?** *If no, proceed to section 3.12.*		☐	☐
3.12	**Is each forced draught fan operated by a variable speed motor controller (or variable speed drive)?**		☐	☐
3.13	**Is the product gas-fired or dual fuelled and have thermal output up to, and including, 400kW?** *If no, proceed to section 4.*		☐	☐
3.14	**Does the product incorporate pneumatic or electronic air fuel ratio controls?**		☐	☐

4.	Product performance	No	Yes
4.1	**For product categories 1 - 6, does the product automatically respond to changes in heat demand by modulating its output:**	☐	☐
	a) Across the minimum specified turndown ratio set out in Table 1?	☐	☐
	b) In a continuous manner (or alternatively for oil-fired burners rated up to and including 400kW only, in a step-wise manner across at least three stages of output)?	☐	☐
	c) Whilst adjusting the ratio of air and fuel fed to the product's burner in a manner that maintains combustion efficiency across the required turndown range and complies with the maximum permitted levels of oxygen (O2) and carbon monoxide (CO) in the product's exhaust gases, as set out in Table 1.	☐	☐

Table 1 Minimum performance requirements for burners with controls

	Product Category	Minimum turndown ratio	Maximum O_2 level at test point			Maximum CO level
			High	Medium	Low	All test points
1	Gas fired and dual fuel burners rated up to, and including, 400 kW	3.33:1	3.0%	4.0%	4.8%	20 ppmv
2	Gas fired and dual fuel burners rated between 401 kW and 1,200 kW	4:1	3.0%	4.0%	5.0%	20 ppmv
3	Gas fired and dual fuel burners rated in excess of 1,200 kW	4:1	3.0%	4.0%	5.0%	20 ppmv
4	Oil fired burners rated up to, and including, 400 kW	3.33:1	3.0%	4.0%	4.8%	20 ppmv
5	Oil fired burners rated between 401 kW and 1,200 kW	3.33:1	3.0%	4.0%	4.8%	20 ppmv
6	Oil fired burners rated in excess of 1,200 kW	4:1	3.0%	4.0%	5.0%	20 ppmv

Where the required test points are:

- **High:** the burner is operating at 100% of its maximum continuous rating.
- **Medium:** the burner is operating at 50% of its maximum continuous rating.
- **Low:** the burner is operating at a level corresponding to the specified minimum turndown, which is 25% of its maximum continuous rating for 4:1 and 30% for 3.33:1.

Note: Where the product's turndown ratio is greater than the minimum required, performance at the low and mid test points may be calculated by linear interpolation of the test results. Where operation at the product's maximum continuous rated output is not possible, performance at the high test point may be determined by extrapolation of test data at two additional test points (e.g. 70% and 90%).

For the avoidance of doubt oxygen levels in the product's exhaust should be presented to 1 decimal place, and carbon monoxide levels to zero decimal places. As an example, a gas fired burner rated in excess of 1,200 kW and whose exhaust gases contain oxygen levels of 3.1%, or carbon monoxide levels of 21 ppmv, at 100% of its maximum continuous rating, would be deemed to be a fail.

4.2 **For burners designed to recover exhaust gas heat:**

a) Does the product automatically respond to changes in heat demand by modulating the output whilst adjusting the ratio of air and fuel fed to the product's burner in a manner that maintains combustion air inlet temperature as set out in Table 2, while operating at 100% of its maximum continuous rating? ☐ ☐

b) Does the product exceed the maximum permitted levels of nitrogen oxide (NOx) in their exhaust gas specified in Table 2, while operating at 100% of its maximum continuous rating? ☐ ☐

Table 2 Minimum performance requirements for burners designed to recover exhaust gas heat

	Product Category	Minimum air temperature entering the burner for combustion at 100% of maximum continuous rating	Maximum NOx level at 100% of maximum continuous rating
7	Gas fired burners designed to operate with external or built-in thermal storage material that recovers exhaust gas heat (of all rated outputs).	75.0% of designed combustion chamber operating temperature	105 ppmv (Maximum O2 level: 3.0%)
8	Gas fired burners designed to operate with external or built-in exhaust gas recovery heat exchanger (of all rated outputs).	37.5% of designed combustion chamber operating temperature	75 ppmv (Maximum O2 level: 3.0%)

5. Summary of documents to be included

No	Yes

Please send ONE copy of each of the following documents:

If the relevant information in support of the questions above is contained within a larger document, please indicate the location of the relevant information. Note that all documentation submitted must directly refer to the model numbers for which you are making this application. Documentation should be added to your online application at https://etl.beis.gov.uk/engetl/fox/live/ETL_LOGIN/login

a. A technical sales brochure or leaflet for the product clearly summarising:

- i) The key features of the product (ideally including photographs of the product's exterior). ☐
- ii) The product's operation (i.e. in-built functionality) and intended applications (i.e. usage). ☐
- iii) Any product selection options (including optional extras, alternative configurations etc.). ☐

This documentation should contain sufficient detail to enable the assessor to confirm that the proposed entry on the Energy Technology Product List (ETPL) is correct, and uniquely represents a single product of fixed design (as defined by the rules of the ECA Scheme). If the model names contain any 'wildcards' in respect of cosmetic variations please check with ECA Questions that this is permitted before submitting your application.

b. A technical specification for the product, including:

- i) Details of the model numbers covered (including individual features of each model). ☐
- ii) The product's design ratings (electrical, mechanical, thermal, flow rates, energy use etc.). ☐
- iii) A description of how to install the product including connection/wiring diagrams. Where the product must be assembled, configured and/or commissioned on site before use, please include instructions. ☐

This documentation should contain sufficient detail to enable the assessor to confirm that each product entry on the Energy Technology Product List (ETPL) has the design features specified in the eligibility criteria for that category of product. Please indicate on the checklist where information on specific design features is located in the documentation.

c. Please ensure that this documentation includes details of:

- i) The product's control input/output signals, and requirements for sensors or control valves. ☐
- ii) The product's automatic control strategies, mechanisms, and configuration settings. ☐

d. Evidence that the product meets the performance criteria, including:

- i) Test reports showing product performance at the standard rating/test conditions. ☐
- ii) Details of the test procedures/standards used to determine product performance. ☐
- iii) A declaration certifying the accuracy of the test reports and confirming that:
  - The test facilities complied with the minimum specifications outlined in the test standard, and the required test conditions where applied during testing. ☐
  - All measurement equipment used in testing was calibrated by an accredited laboratory, or its calibration is otherwise traceable back to national standards. ☐
  - Appropriate quality assurance procedures have been used to verify or cross-check the accuracy and repeatability of the test procedures and test results. ☐
- iv) Where representative testing has been used, please include details of selection method used, and evidence that the products covered by the representative model(s) are variants of the same basic design. ☐

Please note that summary test reports will only be accepted, where the accuracy of the test reports has been certified by a recognised independent body, or where two detailed test reports have been submitted per product range and per laboratory used.

Please refer to Section 4 of ECA Guidance Note 5 "ECA Testing Programme: Energy Technology List (ETL) Product Testing Framework" for further guidance on the submission of test results, and minimum information requirements.

e. A Declaration of Conformity with EU Directives on product safety, including one of the following:

- i) CE Marking Directives. ☐
- ii) EU Pressure Equipment Directive PED 2014/68/EU. ☐

f. For products with a thermal input greater than or equal to 1MW, and less than 50MW, a statement that the product complies with the minimum requirements as stated in Annex II of the Medium Combustion Plant Directive (EU) 2015/2193 ☐

g. Evidence that a quality assurance system/procedures is/are in place to:

- i) Control the specification, design, manufacturing and testing of the products. ☐

h. A signed application checklist. ☐

Please note that all product documentation provided must be written in, or translated into, English.

6. Declaration

I confirm that the information given above is correct to the best of my knowledge and that I have read and agree to the terms and conditions governing the management of the Enhanced Capital Allowance Energy Technology List (ETL).
A copy of the terms and conditions can be found at https://www.gov.uk/guidance/energy-technology-list

Signature: ..... Date: .....

For more information:

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