Combustion Trim Controls

Date added to ETL 2001.

1. Definition of Technology

Combustion trim controls covers products that are specifically designed to continuously monitor combustion processes and to automatically adjust, either directly or indirectly, the ratio of air to fuel fed to the burner(s) in a manner that optimises energy efficiency.

2. Technology Description

Combustion trim controls monitor combustion processes and use feedback control to adjust the amount of air and/or fuel fed to the burner(s), so as to maintain excess air levels at the preset minimum value. They are used to correct burner operation for changes in ambient conditions, fluctuations in the calorific value of fuel supply, and mechanical wear; and enable the burner to operate at lower levels of excess air, thus improving efficiency.

The ECA Scheme aim to encourage the purchase of combustion trim controls that enable the precise control of excess air levels across the entire modulating range of the burner.

The ECA Scheme covers three categories of products:

1. **Standalone control units** that are self-contained control units that are designed to incorporate combustion trim control to any suitable burner control system.
2. **'Add-on' control modules** that are not self-contained units, but are designed to incorporate combustion trim control into particular burner control systems.
3. **'Upgrade packages'** that consist of a combustion monitoring sensor (or sensors) and any other components (e.g. sensor drive unit, software, licence 'key' etc.) needed to retrofit combustion trim control to a specific burner control unit.

Investments in combustion trim controls can only qualify for Enhanced Capital Allowances if the specific product is named on the Energy Technology Product List. To be eligible for inclusion on the Energy Technology Product List, products must meet the eligibility criteria as set out below.

3. Eligibility Criteria

To be eligible, products must:

- Include one or more sensors that are capable of monitoring the levels of oxygen (O_2), carbon monoxide (CO) and/or carbon dioxide (CO_2) in the exhaust gases from a gas and/or oil fired burner (or associated combustion plant) to an accuracy of at least +/- 1.0%, and a repeatability of at least +/- 0.5%, of full scale output.
- Generate an analogue or digital signal that can be used to automatically adjust the flow of air and/or fuel to the burner (or burners) being controlled.
- **Not** be designed to automatically control burner start-up or shutdown.
- **Not** incorporate any form of control valve, actuator, or variable speed drive.
- Be CE Marked, or conform with the EU EMC Directive 89/336/EEC (as amended) or its replacement EU EMC Directive 2004/108/EC in respect of their design, manufacturer and testing procedures.

4. Scope of Claim

Expenditure on the provision of plant and machinery can include not only the actual costs of buying the equipment, but other direct costs such as the transport of the equipment to site, and the direct costs of installation. Clarity on the eligibility of direct costs is available from HMRC.