

## **USE OF CHPQA TO OBTAIN ENHANCED CAPITAL ALLOWANCES**

The Enhanced Capital Allowance (ECA) scheme for Energy Saving Technologies allows businesses to write off 100% of their investment in those energy saving technologies that are listed in the Energy Technology Criteria List against the taxable profits of the period during which the investment is made. ECAs are claimed in the same way as other capital allowances on the Corporation Tax Return for companies and the Income Tax Return for individuals and partnerships. One of the qualifying technologies is Good Quality Combined Heat and Power (GQCHP).

For the purposes of CHP, ECA is available where the **main** intended business will be to provide heat and power for clearly identified users on site or to known third parties, and not to generate power for sale to or via unspecified third parties. Thus ECAs will not be available for companies whose core business is electricity production, insofar as they use the CHP system to produce electricity to be sold to unknown end users.

### **Certification of CHP Schemes to establish ECA eligibility- The CHPQA Programme**

Because of the nature of CHP, which tends to be tailored for individual requirements, qualification for the ECA requires individual Certification of each installation. This is achieved through the CHP Quality Assurance programme (CHPQA).

CHPQA is a government initiative to encourage the wider practical application of Good Quality Combined Heat and Power, Community Heating and Alternative Fuel technologies. CHPQA aims to monitor, assess and improve the quality of the UK's CHP.

The CHPQA Standard sets out definitions, criteria and methodologies for the operation of CHPQA. It should be read in conjunction with the supporting CHPQA Guidance Notes, which provide detailed information on how this Standard will be interpreted by government departments and agencies, and guidance on compliance with this Standard. The Standard is revised and republished from time to time.

Application to the programme is voluntary and free, but is the route chosen by HM Revenue & Customs to demonstrate eligibility for claiming ECA against investment in CHP.

Those who wish to claim ECA must complete a Self-Assessment, details of which can be found in the CHPQA Guidance Notes and Form F3, available at: <https://www.gov.uk/guidance/combined-heat-power-quality-assurance-programme>. For further information call the CHPQA Administrator on 01235 753004 or e-mail [chpqainfo@chpqa.com](mailto:chpqainfo@chpqa.com).

The assessment must include evidence of projected future heat and electricity demands, details of the Scheme (such as choice of prime movers, heat recovery equipment, metering arrangements, and plans for additional equipment), as well as projected fuel use, electricity generation, and heat supply. CHPQA sets out Threshold Criteria for new Good Quality CHP capacity.

The Self-Assessment is validated by the CHPQA Administrator, and applicants may be subject to site audit. Following Validation of the Self-Assessment, a CHPQA Certificate is issued stating, amongst other things, the portion of the capacity of the proposed CHP Scheme that qualifies as Good Quality CHP. CHPQA Certificates expire on 31 December, and need to be renewed annually. If no changes to the design have been made, this is straightforward.

Certification, along with sufficient records to identify the qualifying plant or machinery, should be retained. HMRC may request sight of these documents when considering the claim for ECA.

## When to apply

Application to the CHPQA programme should be made once certain detailed information is available for the Self-Assessment (which may not be until after any tendering process is completed), but before significant expenditure is incurred (e.g. before construction begins). Claimants will not need to have the Certificate before buying equipment but will need it by the time their tax return is submitted for the year in which expenditure is incurred.

### Applications for Schemes currently under development

Expenditure incurred on a CHP scheme **before** a certificate has been issued can qualify for the ECA, but the claim **cannot** be made **until** certification is given. For example, expenditure incurred on 24 May 2016 on a technology whose certificate was not issued until 4 July 2016 qualifies for ECAs but these may not be claimed until 4 July 2016, the certification date.

Please refer to HMRC's Capital Allowances Manual for further guidance, available at <https://www.gov.uk/hmrc-internal-manuals/capital-allowances-manual>

## CHP Qualifying Expenditure

### Ownership

Some Schemes are owned by the company that uses the heat and power, in which case it is obvious where the responsibility lies for applying for Certification and for claiming ECA. However, many Schemes (both large and small) are owned and operated not by the host company, but by a separate CHP or Energy Services Company (ESCO).

Energy Services companies are allowed to claim an ECA where the asset is owned by the ESCO and is used in the supply of services. An ESCO is likely to be defined as a company that performs a range of services including design, build, operate and maintain. Some parts of this operation may be subcontracted, but the substantial portion of the work is carried out by the ESCO. The contract is normally based on the energy services provided and payment based on energy supplied or saved under the arrangement.

Where more than one company is involved, it has to be clear who applies for Certification, and who is eligible for claiming ECAs. An Application under CHPQA can come from either party, but only one set of Certification can be provided for any given Scheme. The ESCO, which in most cases monitors remotely a large number

of parameters, is likely to be in the best position to supply the necessary evidence. However, the host company, the ESCO, or a third party investing in CHP may use the Certification to claim ECA for different elements of a Scheme.

### **Plant and Machinery that qualify for ECAs**

Capital Allowances are available if a person carries on a qualifying activity (for example, a trade or property business) and incurs qualifying expenditure on the provision of plant or machinery wholly or partly for the purposes of the qualifying activity. It is a requirement of the Capital Allowances Act that as a result of incurring the expenditure, the Plant and Machinery belongs to the Claimant.

The equipment below qualifies as Plant and Machinery, and will be eligible for ECA if installed as part of a CHP Scheme Certified by CHPQA as Good Quality. **The additional equipment, marked with an \*, qualifies within an expanded CHP scheme boundary, but only applies to waste to energy CHP Schemes firing Solid Recovered Fuel (SRF).** The minimum standard for SRF is as set out in paragraph 12.6 of the Statutory Consultation on the Renewables Obligation Order 2009 as amended by any changes that might result from that consultation. These changes took effect for tax purposes from 11 August 2008.

This list is not meant to be exhaustive and other items of plant or machinery could qualify, for further information refer to HMRC's Capital Allowances Manual <https://www.gov.uk/hmrc-internal-manuals/capital-allowances-manual>

#### ***Fuel storage, processing and management:***

- Fuel storage tanks & containers
- Fuel treatment systems
- Solid fuel handling equipment, pulverisers and shredders
- Pumps and heaters
- Gas conditioners and compressors
- Pyrolysis or gasification equipment
- Air intake filters and other equipment
- Cranage inside SRF storage bunker\*
- Plasma convertor\*
- SynGas clean-up equipment\*
- SynGas compressor\*

#### ***Prime movers (whether used for electrical generation or direct mechanical drive):***

- Prime movers (such as gas turbines, steam turbines, reciprocating engines, fuel cells, Stirling engines)
- Associated items (e.g. mounting systems and cooling equipment)

#### ***Electrical generation equipment:***

- Gearing
- Alternator and associated cooling system
- Transformers
- Switchgear
- Protection systems (e.g. earthing)
- Modifications to connect CHP to existing site distribution systems
- Modification of network connections to allow the site to export

**Heat recovery and utilisation equipment:**

- Waste heat recovery boilers (including any supplementary or auxiliary firing capability)
- Economisers
- Direct drying equipment (including any supplementary burner capability)
- Absorption chillers

**Supplementary (back-up and top-up) heat:**

- Supplementary firing
- Auxiliary boilers
- Furnace/boiler (fired or heat recovery)\*
- Package boilers using conventional or alternative fuels (N.B. boilers that are included within the boundary of a CHP Scheme for assessment under CHPQA do not need to meet the appropriate efficiency criterion set elsewhere for boilers. For boilers outside a CHP Scheme boundary see Energy Technology list at <https://www.gov.uk/government/publications/eligibility-criteria-for-technologies-that-qualify-for-the-energy-saving-enhanced-capital-allowance-scheme> ).

**Management of combustion products and waste heat from prime movers and supplementary heat equipment:**

- Exhaust stacks
- Emissions monitoring and abatement equipment (e.g. CO<sub>2</sub> scrubbers)
- Silencers
- Heat rejection capabilities (e.g. condensers and radiators)
- Grate cooling systems and bottom ash collection\*

**Steam or heat network:**

- Modifications to connect CHP to existing site distribution systems
- Heat exchangers
- Steam system controls (pumps, actuators valves, traps etc.)
- Condensate return systems
- Other steam network equipment covered elsewhere on the ECA list

**Water treatment (for water entering or being released from the system):**

- Chemical treatments
- Demineralisation
- De-aeration
- Filtration
- Expansion vessels
- Storage tanks

**Ancillary equipment necessary to the operation of a Scheme:**

- Control, Monitoring and Metering equipment necessary for operation or for compliance with CHPQA
- Pumps
- Fans
- Motors and variable speed drives
- Sand storage (if Circulating Fluidised Bed (CFB) boilers are being used)\*

- Continuous Emission Monitoring (CEM) equipment<sup>1</sup>
- Ash and Flue Gas Treatment (FGT) residue collection equipment\*
- Ash and FGT residue disposal transfer equipment\*

**Noise and vibration control:**

- Acoustic enclosures or sound insulation
- Vibration isolators
- Attenuators and silencers

**Access to allow maintenance or inspection:**

- Gantries, walkways, ladders, lifting gear etc.

**Plant and Machinery that do NOT qualify for ECAs**

It is investment in ‘*Plant and Machinery*’ that will qualify for ECA. Some assets will fall outside the definition of Plant and Machinery and will not qualify for ECA. These include:

- Assets that are buildings or structures do not qualify for any capital allowances given on Plant and Machinery. An example is a building that houses a CHP Scheme, where the main purpose of the building is weather protection or security (an enclosure where the main purpose is sound insulation may qualify as Plant and Machinery, see previous page). See <https://www.gov.uk/hmrc-internal-manuals/capital-allowances-manual> for further information
- Maintenance costs. Like-for-like replacement of components of a Scheme as part of a general repair and maintenance programme will generally be a revenue expense that can be set against profits in full for the period in which sums are expended. As these costs are not capital expenditure they will not qualify for Enhanced Capital Allowances.

**Eligible Costs**

Costs that are directly associated with the provision of Plant and Machinery can also qualify for capital allowances. The words ‘on the provision of machinery or plant’ in the Capital Allowances Act 2001 (CAA) are interpreted narrowly so as to exclude remote or indirect expenditure. Some common types of cost are detailed below:

- Transportation and installation costs should be regarded as expenditure on the provision of machinery or plant. These might include, for example, the costs of transport, craning costs to lift machinery in to place, project management costs, installation, modifications to existing Plant and Machinery, and commissioning.
- Professional fees qualify only if they are directly related to the acquisition and installation of assets that are plant or machinery. Fees incurred on such things as feasibility studies or design work are generally too remote from the acquisition and installation to qualify. The eligibility of such costs is a question for consideration by HMRC based on the particular circumstances of the case.

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<sup>1</sup> ‘Emissions monitoring and abatement equipment’ also includes ash and FGT residue equipment, as emissions to land forms one of the targets of emissions abatement, alongside emissions to air and to water

- Costs of alteration to an existing building incidental to the installation of qualifying Plant and Machinery can be eligible for ECA.

## Threshold Criteria for New CHP Schemes

In deciding whether any part of the expenditure incurred on Plant and Machinery for a CHP Scheme qualifies for an ECA, applicants must test a Scheme's design against a set of Threshold Criteria, using the CHPQA Self-Assessment Form F3. Form F3 is used for proposed new Schemes and upgrades to existing Schemes at the design or construction stages.

The Threshold Criteria for new Schemes are outlined below. Changes to existing Schemes, which increase electrical capacity (for example the conversion of a steam turbine Scheme to CCGT CHP, or the replacement of a prime mover with a larger prime mover) will be treated as new Schemes for the purpose of ECA.

The Threshold Criteria for Schemes certified under an F3 are:

- QI greater than or equal to 105 (at MaxHeat conditions) and Power Efficiency greater than or equal to 20%, both under Annual Operation.

The government has, for the purposes of the ECA scheme, adopted a relaxed Threshold Power Efficiency criterion for Schemes that use biomass or solid or liquid waste fuels (see CHPQA Guidance Notes for details), for which the Threshold Criteria are:

- QI greater than or equal to 105 (at MaxHeat conditions) and Power Efficiency greater than or equal to 10%, both under Annual Operation.

(NB: For Schemes that use a combination of biomass or solid or liquid waste fuels alongside other fuels, the Power Efficiency Threshold should be scaled according to the projected proportion of each type of fuel. see the CHP section of the Energy Technology Criteria List <https://www.gov.uk/government/publications/enhanced-capital-allowance-scheme-for-energy-saving-technologies> for details).

Claimants should note that in respect of ECAs for CHP facilities using SRF, they will need to demonstrate that:

- the SRF throughput tonnage is equal to or greater than 50% of the rated capacity of the plant in any one Tax Year or any part of a Tax Year on a pro-rata basis; and
- they have met the above criterion for at least five consecutive years from the date of Plant Acceptance (as defined in the relevant plant construction contract) to avoid the forfeit of the monetary value of the ECA.

If the proposed new Scheme passes the relevant Threshold Criteria and is certified as Good Quality for the whole of its capacity, then all expenditure on all items of Plant and Machinery (see pages 3 to 5) will be eligible for ECA.

If a new CHP Scheme meets the relevant Threshold Power Efficiency Criterion but not the QI Threshold Criterion, the maximum portion of Qualifying Expenditure eligible for ECA is  $\text{CHP}_{\text{QPC}} / \text{CHP}_{\text{TPC}}$ . For further details, see CHPQA Guidance Note 27.

Thus, if 50% of a Scheme's capacity is certified as Good Quality CHP, then ECAs can be claimed on individual, clearly identifiable items of Qualifying Expenditure up

to a maximum value of 50% of the total capital cost of the CHP Scheme. The remaining portion of the Scheme is considered to be conventional power generation and capital allowances are available at the relevant rate. This approach recognises the environmental benefits to be delivered by Good Quality CHP.

If a Scheme does not meet the relevant Threshold Power Efficiency, none of the investment will be eligible for ECA as Good Quality CHP. However individual items of plant such as boilers, high efficiency motors, or variable speed drives, may achieve the efficiency criteria for such plant, and be eligible for ECA. Other equipment can be set against capital allowances at the usual rates.

## **Threshold Criteria - Improvements to Existing CHP Schemes or Conversion of Electricity-only Schemes to CHP**

The criteria for expenditure on an existing CHP Scheme or electricity-only Scheme where the prime movers remain unaltered are given below. The Threshold Criteria are the same as for new Schemes as set out above.

If the proposed change would achieve the Threshold Criteria, all Qualifying Expenditure will be eligible for ECA (see "CHP Qualifying Expenditure") regardless of whether the Scheme met the criteria before the upgrade. If the design of the Scheme meets the relevant Threshold Power Efficiency, but does not meet the Threshold QI, then:

- Investment in heat use (heat recovery equipment, associated ancillary equipment, and certain steam or heat network elements) as listed in "CHP Qualifying Expenditure", should qualify for ECA. Steam and heat distribution pipework do not qualify for ECA.
- The proportion of investment in other items listed will be scaled back based on  $\text{CHP}_{\text{QPC}}/\text{CHP}_{\text{TPC}}$ .

If the designed CHP Scheme does not meet the relevant Threshold Power Efficiency, none of the investment will be eligible for ECA. However individual items of plant such as boilers, high efficiency motors, or variable speed drives, may achieve the efficiency criteria for such plant, and be eligible for ECA. Other equipment can be set against capital allowances at the normal rates.

### **Examples of improvements are as follows:**

- **Conversion of technology used in a CHP Scheme to enable the use of alternative fuel.** Alternative fuel includes renewables, wastes or by-products from industrial processes or waste heat from high temperature processes. Alternative fuel can be in solid, liquid or gaseous form (see CHPQA Guidance Note 14 for details). Investment in conversion of existing equipment to allow the use of such fuel may include: the modification of prime movers to burn waste gases of lower calorific value; the addition of gasification equipment; or the alteration or addition of boiler equipment and mechanical handling equipment to handle solid or liquid wastes.
- **Increases in heat supplied.** For calculation of QI, heat efficiency is based on useful heat supplied, ignoring condensate return. Some existing CHP Schemes (and some existing electricity-only Schemes) may be able to

recover heat for supply to heat customers on adjacent sites. Some engine based CHP Schemes may at present only recover High Pressure Hot Water and could install appropriate systems to recover Low Pressure Hot Water. Others may be able to utilise heat during the summer through the installation of absorption chilling. Other Schemes may be able to increase recovery of condensate return.

- **Improvements in monitoring arrangements will qualify for ECA as long as they comply with the CHPQA Standard.** Fuel used, electricity generated and heat utilised must be monitored. Installation of dedicated fuel and electricity metering for each prime-mover (engine, turbine, etc.) has been considered good practice for many years (although it is by no means universal) since there can be no guarantee that a prime-mover is performing to specification if such monitoring is not installed. Monitoring heat or steam supply is more difficult and expensive. Operators of Schemes with a heat rejection facility must be able to monitor useful heat supplied to site.