MITSUBISHI ELECTRIC
AIR CONDITIONING SYSTEMS

Information Guide

The Enhanced Capital Allowances (ECA) Scheme

Qualified for Energy Technology List
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Issue One >

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The Enhanced Capital Allowances (ECA) Scheme

Information Guide

This is an independent guide produced by Mitsubishi Electric to enhance the knowledge of its customers and provide a view of the key issues facing our industry today. The guide accompanies a series of seminars, all of which are CPD accredited. The changing face of construction in the 21st Century demands that designers, specifiers and suppliers work as teams to create better buildings - for occupants and the environment. Mitsubishi Electric aims to be a part of this by encouraging employees and customers to work together to increase their knowledge of the latest technology, legislation and markets.

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Introduction

The Enhanced Capital Allowances (ECA) scheme was introduced by the Government as an incentive for businesses to invest in energy efficient equipment. It works by enabling businesses to claim all of their tax allowances against energy efficient equipment in the first year after purchase - rather than spreading the allowance over several years. In many cases the costs of installation can also be offset in the same way.

ECAs are one of a raft of initiatives to reduce the UK's carbon dioxide emissions. The scheme is managed by the Carbon Trust for the Government in collaboration with the Department for Environment, Food and Rural Affairs (DEFRA) and the Inland Revenue.

Carbon dioxide and global warming

A certain amount of carbon dioxide in the atmosphere is necessary for plant life to thrive. However, carbon dioxide is also produced by the burning of fossil fuels such as oil, gas and coal for energy production. As a result the amount of carbon in the Earth's atmosphere is rising, effectively insulating the planet and causing global temperatures to rise. This effect has lead to the designation of carbon as a greenhouse gas.

Levels of CO_2 in the atmosphere have risen by a third since industrial times and are expected to double in the next hundred years. While transport in the form of cars is the most significant factor contributing to the building of CO_2, energy use in buildings also plays a large part. Heating and lighting account for most energy consumption in commercial buildings.

According to the Carbon Trust, CO_2 emissions from air conditioning in the UK have quadrupled in the last 20 years and this increase is expected to continue for the next 20 years.

The UK Government has made a number of commitments to reducing the UK's contribution to global warming by reducing our CO_2 output. Domestic and commercial buildings are the subject of a number of new targets on energy use, many of which have come into force over the past couple of years, and which will continue to develop in the future. Many of these targets are based on the UK's commitment to the Kyoto Protocol.

In 1992 the majority of the world's nations signed the United Nations Framework Convention on Climate Change (UNFCCC), also known as the Kyoto Protocol. The UK Government committed to reducing its CO_2 emissions to 20% of 1990 levels by 2010. The Kyoto Protocol agreement expires in 2012, so the Bali Roadmap was established in 2007 to look beyond that date.

As a result of signing the Protocol, the UK Government has introduced a number of initiatives and regulations aimed at reducing energy use in buildings (and other industries). These include:

The Climate Change Levy

The CCL was introduced on 1st April 2001 and increased the cost of energy in buildings. The current rates of levy are as follows:

Electricity	**0.44p/kWh**
Natural Gas	**0.15p/kWh**
LPG	**0.96p/kg** (approx 0.07p/kWh)

The CCL and ECA schemes work in tandem to encourage greater use of energy efficient equipment in buildings - effectively creating a 'carrot and stick' approach to encouraging market change.

Building Regulations

The most significant factor in changing attitudes to energy use in buildings has been the European Energy Performance of Buildings Directive (EPBD). This European legislation has been introduced to UK law largely through Part L of the Building Regulations. The EPBD introduces a number of procedures for reducing energy use in buildings at the design stage, and also in long-term operation.

Part L already requires proof that a building designed today is more energy efficient than a similar building designed to 1992 standards. And in 2008, buildings will have to be assessed for energy use by accredited assessors every time they are sold or rented out. Mitsubishi Electric has produced a number of Guides relating to Part L and the EPBD which cover the details of these regulations.

Local Government rules

As well as national Government, local authorities now have the power to influence decisions on energy sources for domestic and commercial buildings. Under what has become commonly known as the 'Merton Rule' at least 10% of energy for a building must be sourced from on-site renewables. This level is rising up to 20% for some local authorities (especially in and around London).

Designers and installers therefore have a growing list of reasons to select more energy efficient equipment. Government has recognised that often the more energy efficient equipment carries a higher capital cost, and the ECA scheme is a way of offsetting this quickly and easily. Our next feature looks at how the ECA scheme works.

How can they work and who will benefit?

The Enhanced Capital Allowances (ECA) scheme was introduced by the Government in April 2001, in parallel with the Climate Change Levy (CCL). The CCL imposes a levy on energy tariffs for businesses (excluding very small businesses), while the ECA scheme enables these businesses to reclaim the tax if they invest in energy efficient equipment.

These two initiatives form part of the Government's strategy for reducing carbon dioxide emissions and global warming, in keeping with the UK's commitment to the Kyoto Protocol.

The ECA scheme is managed by the Carbon Trust, for the Government, in collaboration with the Department for Environment, Food and Rural Affairs (DEFRA) and the Inland Revenue.

Capital Allowances

Any business making a capital investment in new equipment is entitled to offset the cost against its income or corporation tax by claiming capital allowances. For most capital investments, this allowance is spread over a period of time. Capital allowances are normally given at 25% on a reducing balance basis, so that after a period of 10 years almost all of the allowances have been claimed. For example, when a company buys an item of equipment costing £1,000 it can claim £75 tax allowance in the first year, assuming a tax rate of 30%.

How ECA's Work

Enhanced Capital Allowances are used to encourage businesses to invest in particular types of equipment by providing up-front tax relief - as 100% of the allowances can be reclaimed in the first year. So, using the previous example of a £1000 investment in equipment that qualifies for ECA's, the company could reclaim £300 in the first year.

This 'reward scheme' approach is not confined to energy efficient building services plant. It is also available for vehicles with low carbon dioxide emissions, technologies that encourage sustainable water use and was applied to encourage businesses to invest in IT during the late 1990's and early 2000's.

ECA's and energy in buildings

In order to ensure that ECA's are only claimable against energy efficient equipment, the Carbon Trust has drawn up a list of approved technology categories - which form the Energy Technology List. The Energy Technology List details over 6000 products that meet the Government's energy efficiency criteria offering end users the following benefits:

- Energy efficiency, resulting in significant long-term financial benefits
- Enhanced tax relief
- Boosted cash flow
- Faster payback on investment
- Reduced energy costs, resulting in lower cost of ownership
- Improved environmental performance for the business
- Reduced environmental impact

	Capital Allowance	Enhanced Capital Allowance
Tax Rate	30%	30%
% of expenditure to which allowance applies	25%	100%
Equipment cost	£1000	£1000
Taxable amount reduced by	25% of £1000 = £250	100% of £1000 = £1000
FIRST YEAR SAVING	**30% of £250 = £75**	**30% of £1000 = £300**
Balance brought forward to second year	£1000 - £250 = £750	£0
Taxable amount reduced by	25% of £750 = £187.50	£0
SECOND YEAR SAVING	**30% of £187.50 = £56.25**	**£0**

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Qualifying Technologies

The following technologies are included in the **Energy Technology List:**

- **Air to Air Energy Recovery**
- Automatic monitoring and targeting equipment
- Boilers
- Compact Heat Exchangers
- Combined heat and power
- Compressed air equipment
- **Heat pumps**
- HVAC Zone Controls*
- Lighting
- Motors and drives
- Pipe insulation
- Refrigeration equipment
- Solar thermal systems
- Thermal screens
- Warm air and radiant heaters

The Energy Technology List continues to grow and additional technology categories are introduced to the list on a regular basis. To ensure that products continue to comply with the energy efficiency criteria, the Carbon Trust carries out regular, random testing of products on the list. The minimum qualifying criteria will be increased on a two year rolling programme.

This means that older equipment that no longer qualifies will be removed from the list and newer, more energy efficient equipment will be added. Any company interested in investing in low carbon energy efficient technologies can view the Energy Technology List. The list can be accessed at **www.eca.gov.uk/etl**, which allows searches by type of technology, category or name of manufacturer.

Claiming Allowances

Any business that pays income tax or corporation tax is entitled to enhanced tax allowances against equipment on the Energy Technology List. This only applies to outright purchase or lease purchase by the end user of the equipment - it does not apply to lease hire equipment, nor does it apply to suppliers or installers. Allowances can be claimed against the cost of the product, along with other costs directly associated with the provision of the product, including installation.

Mitsubishi Electric Products

Mitsubishi Electric products currently qualify under three categories for varying tax allowances:

Variable Speed Drives - Cooling only VRF Systems

- The value of the variable speed drive within the equipment can qualify for ECA
- This is a fixed amount and is dependant on the inverter motor rating

Air to Air Energy Recovery
- Lossnay Heat Recovery Ventilation Systems

- The full cost of qualifying equipment
- The cost of installation of the qualifying equipment
- Transport
- The costs of associated controls, fans and ductwork that are installed specifically for the purpose of energy recovery

Heat Pumps

The method for assessing whether a heat pump system qualifies for ECAs has changed to reflect new technology in this area. Our next feature examines this in more depth.

Tax allowances are claimed as part of the normal income/corporation tax returns. The Inland Revenue's guidance on the ECA scheme can be found at: www.inlandrevenue.gov.uk/capital_allowances/eca-guidance.htm

Funding for Smaller Companies

In addition to offering advice on selection, installation and running of energy efficient equipment, the Carbon Trust offers interest-free loans of between £5,000 and £100,000 to small and medium sized enterprises (SME's). A company would qualify if it employs less than 250 employees, or has a turnover of less than 40m Euros (approx £25m), has less than 27m Euros worth of assets and has no controlling interest of more than 25% by a non-SME.

Eligibility can be verified by completing a form at **www.thecarbontrust.co.uk.**

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Changing rules for technologies

Manufacturers play a major role in the creation of the Energy Technology List. If a technology category is already on the list then a manufacturer must demonstrate that its particular product is energy efficient within that field.

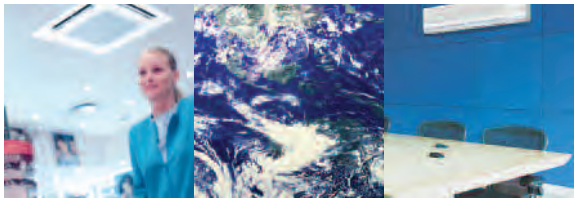
Evidence must be submitted to show that COPs are within certain limits, or that they comply with industry standards. All products on the ETL must be submitted by manufacturers for independent testing.

The Carbon Trust will randomly request a model that is on the list for various manufacturers. The units are then tested to ensure that the COP and capacity is within stated limits.

If a manufacturer wishes to introduce a new technology for which no category currently exists, there are a number of criteria it must meet. Firstly, the new technology must offer significant carbon savings over existing equipment. Proposals must include estimates of how much carbon could be saved if the product is used, including independent evidence.

New technologies can also carry extra costs, and for this reason the manufacturer must be able to demonstrate that with ECA eligibility the new technology would be financially attractive to specifiers and end users.

Another aspect of the Energy Technology List is that the criteria for entry are being updated to reflect whole system performance - not just individual pieces of kit. As technologies change and advance, the Enhanced Capital Allowance must ensure that specifiers can take advantage of the most energy efficient equipment available. At the same time, the eligibility criteria for equipment becomes slightly more complex, to reflect a more accurate calculation of exactly how much energy such equipment saves - and also to allow for different system arrangements.



The latest equipment to see a change in the way its eligibility for ECAs is calculated are VRF heat pump products. Until recently, heat pumps qualified for the ECA scheme, as long as they were labelled Category B or above on the EC Directive. However, this system will change starting from January 2008 and with full adoption of the new method of assessing eligibility adopted by April 2008.

The new method applies to air source variable refrigerant flow heat pumps in both split and multi-split systems. The assessment for ECA eligibility will be based on overall system performance. This means that the energy use of the indoor units (IDU) and outdoor units (ODU) in any combination has to be measured and accounted for.

For a VRF system to be eligible, the new rules require that the exact combination of ODU with IDUs must meet or exceed the minimum energy requirements set out in the Energy Technology List. This applies across a range of connected capacities for both heating and cooling modes.

Supplier members of the Heat Pump Association have worked with the Government to design a 'VRF master list'. Manufacturers use the master list during the application process to provide the Carbon Trust with all the relevant technical and performance data for their ODUs and IDUs.

The aim of the master list is to make the choice of VRF system easier for specifiers: by using the master list calculation sheet, users can assess the performance of any combination of IDUs and ODUs to find which will meet their requirements and be eligible for ECA.

The ECA scheme continues to change and update, so it is important to ensure that you are aware of the latest technologies which are included on the ETL.

See our Further Information for relevant websites that will ensure you are up to date.

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Further information

There's a great deal of information on ECA's available online. You can check out the website at www.eca.gov.uk. Here you will find a list of all the Mitsubishi Electric products which are eligible for ECA's.

To access this list:

- Go to www.eca.gov.uk
- Click on 'Energy'
- Click on 'Products and Claims'
- Click on 'Energy Technology List'

You will then see a series of drop-down boxes. One of these is for manufacturers. Scroll down to 'Mitsubishi Electric Air Conditioning', and hit search. You will then see a list of all the products currently on the ECA list. This is updated regularly, so check it out to see what's new.

You can find more about other aspects of climate change on the Carbon Trust website (www.thecarbontrust.co.uk)

Further **information** >

www.thecarbontrust.co.uk

www.eca.gov.uk

www.defra.gov.uk

www.inlandrevenue.gov.uk/capital_allowances/eca-guidance.htm

To arrange an in-house presentation of this information
Please call one of the numbers below:

London North East & East Anglia	**01707 282480**
London North West	**01707 282480**
London South West	**01689 881030**
London South East	**01689 881030**
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Birmingham	**0121 7412800**
Bristol	**01454 202050**
Manchester	**0161 8666060**
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