CARBON TRUST

An SME guide to financing energy efficiency projects

Enabling SMEs to invest in energy efficiency

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Preface

Reducing energy use makes perfect business sense; it saves money, enhances corporate reputation, and helps everyone in the fight against climate change.

The Carbon Trust provides advice to help businesses take action to reduce carbon emissions; the easiest way to do this is to use energy more efficiently.

This overview of Energy Efficiency Financing introduces the main financing mechanisms available to help businesses invest in energy efficient equipment, allowing businesses to save energy, cut costs and increase profit margins.

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Introduction

The Benefits of Energy Efficiency

Energy efficiency in a small or medium sized enterprise (SME) has a direct impact on profitability. Energy cost reductions can free up cash that can be invested in other areas.

Analysis from the International Energy Agency suggests that the value of the productivity and operational benefits derived from energy efficiency can be up to 2.5 times the value of the energy savings.[1] See figure 1 for the multiple benefits of energy efficiency.

Other benefits can include improved competitiveness, materials efficiency, increased staff engagement, and better relations with suppliers and the wider community. Energy efficiency and carbon reduction can therefore advance a business' public profile.

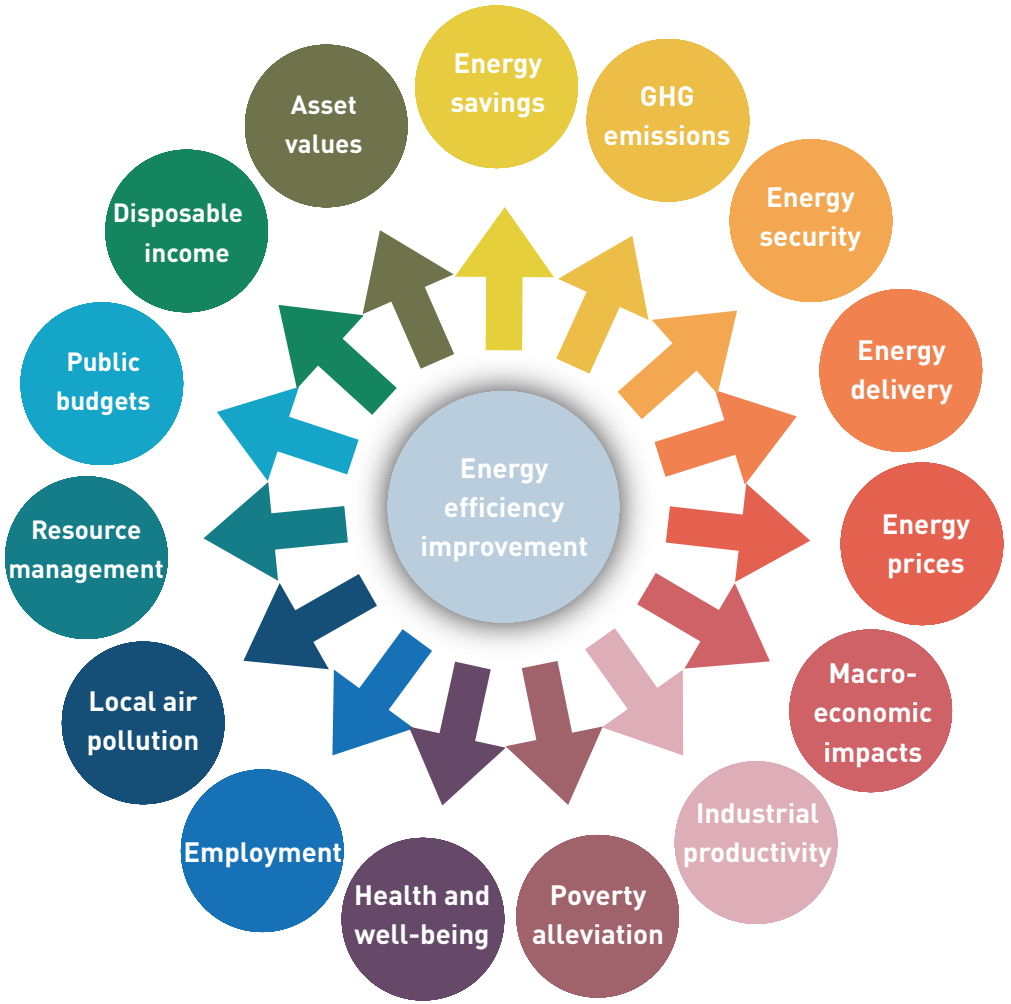

Figure 1 **Energy efficiency improvements can benefit many different stakeholders, figure adapted from IEA, 2014** [1]

[1] IEA, 2014, 'Capturing the Multiple Benefits of Energy Efficiency: A Guide to Quantifying the Value Added'

Energy efficiency potential in the UK

It has been estimated that energy efficiency measures could save the SME community between £1.3bn - £2.6bn, translating to 18-24% of a SME's annual energy bill.[2] If achieved, these savings could also deliver associated CO_2e savings of between 8.7M and 17.6M tonnes per annum.

With many SME business owners not having any active energy saving measures in place, and almost a third of small firms highlighting the cost of energy as a barrier to the growth of their business, there is huge potential for improvement in the UK.

Common energy efficiency opportunities for SMEs

The first step in reducing energy consumption is to decrease energy demand. For a building, this may be through building fabric and design, reducing the heating and cooling requirement; for a product, this may be by redesigning so that it requires less energy to manufacture or use. It's then a matter of looking at how energy using technologies/processes are managed, controlled and maintained, followed by investing in new energy efficient equipment.

The most common SME investment opportunities observed by the Carbon Trust's Green Business Fund , an energy efficiency support service for small and medium-sized companies in England, Wales and Scotland, include upgrades to lighting and HVAC (heating, ventilation and air conditioning) systems. Other common projects to improve energy efficiency include upgrades to catering equipment, refrigeration, insulation, compressed air, motors and drives, and heat recovery. Installing renewable sources of energy such as solar photovoltaics (PV) and biomass systems can also be considered. Always reduce your energy consumption first, then the demand to be met by onsite renewables will be lower. See figure 2 below for the different opportunities to improve energy efficiency and reduce carbon emissions. Technology and sector specific guides on identifying and implementing energy efficiency opportunities can be found on the Carbon Trust website.

Operational Efficiency and Behavioural Change	Industrial/Process Energy Efficiency
Low-to-no cost savings through measuring and monitoring energy use, staff engagement and appropriate improvements to the use and maintenance of existing equipment.	**Investment in new industrial technologies and processes including:** • Motors & drives • Compressed air • Refrigeration • Process heating • Process control
Building Energy Efficiency	**Renewable Energy**
Investment in new building technologies including: • Building fabric • Controls • Lighting • Heating, ventilation & air conditioning	**Investment in equipment to generate local low carbon and renewable heat and electricity:** • Biomass • Heat pumps • Wind • Solar (thermal/PV) • Combined Heat &Power • Waste to energy

Figure 2 **Common, cross sector, energy efficiency and carbon reduction opportunities for SMEs.**

[2] IEA, 2014, 'Capturing the Multiple Benefits of Energy Efficiency: A Guide to Quantifying the Value Added'

Only 1 in 10 SMEs perform an energy audit each year[3]

There are several technology and sector guides on the Carbon Trust website to help businesses identify energy efficiency investment opportunities.

Click below.

[3] ScottishPower, 2016 'New survey reveals UK SMEs missing out on vital energy savings'

Building the Business Case

Once a business has identified an energy efficiency investment opportunity, the next step is to build a business case to get internal approval (if required) and leverage finance.

Energy efficiency projects are typically not seen as essential to the survival of a business; nor are they usually mandatory from a legal or regulatory perspective. They also tend to be smaller scale than other projects being dealt with by decision makers, diminishing their perceived importance. Furthermore, these projects can be technical (or unique), which increases their perceived riskiness and makes rejection a comfortable choice. The task is to build a compelling business case to overcome these challenges.

Key considerations when developing a business case for a low carbon project include:

1. **What are the decision makers looking for?** The proposition will have the best chance of acceptance if it offers the decision makers something they want and is presented in a way they can understand.
2. **It is essential to prepare thoroughly** by collecting the most reliable data and evidence that can be obtained, and subjecting your proposition to rigorous evaluation.
3. **What are the capital, implementation, and operations and maintenance (O&M) costs?** What are the direct financial benefits? Verify the numbers and use the standard financial appraisal methods for the business.
4. **What are the additional benefits?** For example, a well-designed lighting system can also improve staff well-being and morale (as well as reduce energy costs) which is good for a business' brand and reputation.
5. **What are the risks?** There may be technical, cost, market and circumstantial risks to consider.
6. **What are the financing options and incentives?**
7. **Understand the audience** when drafting the proposal.

For in-depth guidance on building a business case, download the Carbon Trust's Guide "Making the business case for a carbon reduction project".

Financing options for energy efficient equipment

Energy efficiency projects typically pay for themselves within a few years through the energy cost savings achieved. This makes them attractive investment projects, however, they typically require an initial upfront capital investment (potentially a very large one).

A business may have their own cash available for this capital investment, or a small/ young business may be able to borrow money from friends and family. Where this isn't possible, or a business doesn't want to use their own cash for the capital investment, financing options can be explored.

Financing can be a very effective way to invest in energy efficient equipment as the cost savings incurred can make a project cash positive from day one (if the energy savings are greater than the loan repayments).

The challenge for businesses is firstly around the availability of finance, and second the implicit cost of finance through interest and fees.

To find out about local grants to support investment in energy efficient equipment, get in touch with your Local Enterprise Partnerships and Growth Hubs.

The financing options to help businesses invest in energy efficient technologies can be classified as follows:

- Loans
- Asset-based financing
- Leasing
- Energy service contracts through Energy Services Companies

Before looking at financing options, businesses should identify any grants available to help reduce the capital investment required, thus reducing the balance on which financing needs to be applied.

It is also worth being aware that there are financial incentives to invest in energy efficient equipment through tax incentives, although these will not help with the initial capital investment required.

This guide looks at each of the above financing options in more detail.

Top tips for financing energy efficiency projects

1. Obtain several quotations from suppliers for equipment and services for comparison

2. Assess technical specifications and energy savings carefully. Where possible secure performance guarantees and visit similar project sites

3. Identify available sources of grant and loan finance and tax benefits from enhanced capital allowances (ECAs) by choosing equipment from the Energy Technology List (ETL)

4. Assess the costs, terms and potential risks of any financing options and servicing contracts carefully

5. Obtain support from professionals and seek legal advice where appropriate.

Loans

A common way to finance energy efficient equipment is through a loan from a bank, finance provider or equipment supplier, commonly referred to as traditional debt financing. Equipment suppliers may have relationships with specific banks, so ask suppliers for details of their finance packages. Compare with offers from your bank and shop around for the best deal.

Cash is loaned in order to support the purchase of the energy saving equipment. Loans may require a down-payment, and will need to be paid back with commercial rates of interest. Having said that, there are sometimes interest-free or other 'below-market' options on offer through equipment suppliers or Government funded programmes. It is worth noting that these are often regional and typically have strict eligibility criteria.

Loans generally require a good credit rating and will either be secured or unsecured. A secured loan is secured against one or more of your assets (typically land, property, machinery, equipment). If you default on the loan the lender can take possession of the asset. Unsecured debt is (unsurprisingly) not secured against an asset and the amount lent, and the cost of finance, is based on the businesses' credit rating. Due to the greater risk to the creditor (the lender) unsecured loans attract a higher interest rate, however, the borrower does not risk losing any assets and can often access an unsecured loan quicker. The total potential amount borrowed is greater through a secured loan.

The cost of a secured loan can vary according to whether the debt is recourse or non-recourse.

Recourse and non-recourse debt with a secured loan

The difference lies within what the creditor (the lender) can seize in the event that the borrower defaults on the loan.

Non-recourse debt

The creditor can only seize the collateral (which the loan has been secured against) and liquidate it to cover the debt owed. This is riskier to the creditor, as the resale value of the collateral may not cover the balance of the debt. Borrowers typically prefer non-recourse debt, however, given the risk to the creditor it typically attracts higher interest rates.

Recourse debt

If liquidation of the collateral does not cover the balance of debt owed, the creditor can pursue the borrower for the remaining balance (known as the deficiency balance). Recourse debt is more favourable to a creditor and therefore typically attracts lower interest rates.

The pros and cons of using a standard business loan include:

+	-
• Relatively simple and accessible with minimal contract complexity (unsecured loans are typically quicker and easier to access than secured loans) • Securitisation options are available which may reduce the cost of the loan or allow access to a larger loan value • May be available through an equipment supplier	• Business needs to be credit worthy • Business takes on equipment performance risk

Personal Guarantees

A personal guarantee can make it easier, especially for small or young businesses, to access a loan. It is an individual's promise, usually a founder or executive, that if the business fails they will repay the loan from personal assets. There are broadly two main types:

An unlimited personal guarantee is a legally binding commitment whereby the lender is able to collect 100% of the outstanding loan amount plus any legal fees. This runs the risk that personal assets might be reclaimed in the event the loan is not able to be repaid.

A limited personal guarantee sets a monetary limit on how much the lender is able to collect.

Independent legal and financial advice should be obtained before any agreements are made to ensure that if a personal guarantee is required, and if so, terms are clear and appropriate.

Pros and cons of using a personal guarantee to secure a loan include:

+	-
• Access to finance if business isn't fully established and not credit worthy	• Personal liability if business defaults on the loan – could result in huge loss of personal assets

[1]Interest free loans for businesses in Wales

If you are an SME in Wales, interest free and unsecured loans for between £3,000 and £200,000 are available from the Carbon Trust. The size of the loan will be based on the projected CO_2 savings of a project; for every 1.5tCO_2 your project is expected to save per annum, the Carbon Trust can provide a loan of £1,000.

Loans are designed so that in most cases the monthly energy savings should exceed monthly repayments. Loans are repaid over 1 to 4 years in line with project payback costs.

To access the loans scheme Welsh businesses must meet the following criteria:

- fewer than 250 full time equivalent employees
- annual turnover not exceeding €50m and/or assets not exceeding €43m
- no controlling interest of more than 25% by a non-SME
- trading for the minimum period (Limited company 12 months, Unincorporated 36 months)
- acceptable credit history
- the project replaces existing equipment, and makes on-site fossil fuel savings
- business operates in a permissible sector under de minimis state aid restrictions, and has not exceeded current limits.

For more information visit the Carbon Trust website.

Interest free loans for businesses in Scotland

The Scottish Government also supports small and medium sized Scottish businesses to reduce energy and resource costs.

Resource Efficient Scotland provides unsecured, interest free loans from £1,000 up to £100,000 for the installation of energy efficient measures such as lighting and heating upgrades, double glazing, insulation and others. SMEs in Scotland are eligible to apply and may also receive a cashback incentive.

For more information visit the Resource Efficient Scotland website.

Asset-based financing

Asset-based financing differs from traditional debt finance (loans etc) as it allows a business to obtain a loan based on the value of specific assets, rather than its own credit rating. The most common assets to be secured against are accounts receivables (invoice financing, which is discussed further below), however it is also possible against inventory, machinery, equipment or real estate. Asset-based financing is available through banks, finance institutions, specialist companies, or one or more individuals using crowd-sourcing platforms. The cost of debt is typically more expensive than a standard business loan.

Invoice financing

Invoice financing allows businesses to raise finance against the outstanding payments due from its customers. It frees up cash, allowing it to be used for other purposes (such as investing in energy efficient technologies and projects). There are broadly two types of invoice financing in the UK which are 'invoice factoring' and 'invoice discounting', with 'invoice trading' also growing in popularity.

Invoice factoring

Invoice factoring involves the outsourcing of part of the management of a business' sales ledger to an 'invoice financier' who also collects the money owed by customers. The invoice financier will 'buy' the debt owed by the customer when an invoice is raised, for a proportion of the invoice value, immediately making cash available to the business. When the invoice is eventually paid, the remaining balance will be made available to the business, after the financier deducts their interest and fees.

The pros and cons of using asset-based financing include:

+	-
• Access cash faster and under more flexible terms • Available to businesses that lack credit history • A personal guarantee is generally not required	• Cost of debt is generally higher than a standard business loan • Potential cost and complexity in asset appraisal, auditing, monitoring and legal requirements • Funding limits typically lower than traditional debt

The pros and cons of invoice factoring include:

+	-
• Outsourcing of part of the receivable ledger frees up time, however, a business will still have a reduced accounts receivable function • Potential customers need to be credit checked and are therefore more likely to pay • Improves cash flow	• The business' customers will need to deal with the invoice financier which may negatively impact the image and reputation of the business

Invoice discounting

Invoice discounting involves the invoice financier providing credit based on the value of unpaid invoices (typically an agreed percentage), which will need to be repaid (plus fees) once the invoice is paid. The invoice financier will not manage the business' sale ledger or collect debts on the business' behalf, therefore the business will still need to manage their accounts receivable ledger.

The pros and cons of invoice discounting include:

+	-
• Proportion of the invoice value made available immediately, improving cash flow • Business keeps relationship with customers; no risk to reputation • Potential customers need to be credit checked and are therefore more likely to pay	• Business is responsible for chasing and collecting debts

Invoice trading

Invoice trading is similar to invoice factoring but involves using an online platform to 'sell' invoices and raise finance from individual or groups of investors. It therefore bypasses the traditional invoice financiers.

The pros and cons of invoice trading include:

+	-
• Business can pick and choose which invoice it sells; providing greater flexibility • Appropriate when a customer demands different credit terms	• Customers will need to deal with the invoice financier which may negatively impact the image and reputation of the business • Relative interest rates are higher than other invoice financing methods

Leasing

Leasing is a contractual agreement between a leasing company (the lessor) that makes its asset available for use by another party (the lessee). The agreement will be for a set period of time, in exchange for payment. Applying this to energy efficient equipment, this means that new equipment can be leased without the outlay of Capital Expenditure (CAPEX). There are a number of different leasing arrangements available that vary according to the duration of lease and how the lessee must account for the asset:

Finance lease

Sometimes known as a capital lease, a finance lease is appropriate when the lessee needs an asset for most of an asset's useful life. The lessee will take responsibility for the maintenance of the asset but will never actually own it. The lease will have a 'primary rental period', where the lessee pays regular (likely monthly) payments to the lessor that will add up to the total value of the asset, plus interest. The primary rental period is typically for the duration of the asset's useful life. At the end of the primary rental period, the asset will either be sold (with the income split between lessee and lessor), returned to the lessor, or a secondary lease period be set up (typically with cheaper payments).

The pros and cons of using a finance lease:

+	-
• Spread the cost of VAT over monthly payments • No upfront capital investment therefore frees up cash flow • Rental payments considered as deductible expenditure for tax and therefore can be included in tax returns	• Long term commitment • Lessee responsible for maintenance costs • Lessee pays more than what the asset is actually worth, and doesn't own it

The value of the asset will appear on the lessee's balance sheet and the rental payments will pass through the profit and loss account as interest payments and amortisation. The cost of the rental payments is deductible for tax purposes.

Operating lease

An operating lease is appropriate when the lessee only needs the asset for a proportion of the asset's useful life; therefore essentially rents the equipment for a short to medium timeframe. The lessor will look after the maintenance of the equipment and at the end of the lease period, take the equipment back. The lease periods can be fairly short, giving the lessee more flexibility. The lessee will pay the lessor a fee for the use of the equipment. As the lessee does not own the asset, is does not appear as an asset on their balance sheet. The lessee will pay for the rental of the asset using tax-deductible Operational Expenditure (OPEX).

The pros and cons of using an operating lease:

+	-
• Flexibility of relatively short lease periods • Opportunity to upgrade equipment in-between (and sometimes during) lease periods • No upfront capital cost therefore frees up cash flow • Rental payments considered as deductible expenditure for tax and therefore can be included in tax returns • Maintenance taken care of by lessor	• Does not own the asset • If lessee ends up requiring equipment for a longer time period, renewing multiple operating leases may be more costly than a finance lease

Hire purchase

Hire purchase is similar to a finance lease, however, the customer will own the asset, or have the ability to own the asset, at the end of the contractual agreement. The finance company will buy the asset on behalf of the customer, with the customer typically paying a deposit followed by monthly instalments, plus interest. The customer will not own the asset until the final monthly instalment has been made or the agreed additional fee paid, after the last instalment.

The value of the asset will appear on the customer's balance sheet at the start of the agreement and the rental payments will pass through the profit and loss account as interest payments and amortisation. The cost of the rental payments is deductible for tax purposes.

The pros and cons of hire purchase:

+	-
• Own asset at the end of the payment plan • Deposit much smaller than capital expenditure to buy the equipment • Flexible payment plan • Fixed interest rates • No upfront capital cost therefore frees up cash flow • Rental payments considered as deductible expenditure for tax and therefore can be included in tax returns	• Asset not owned until all payments made, therefore finance company could take asset away if there's a default on payments

Energy Service Contracts through Energy Service Companies

It is possible to enter into a contract (an energy service contract) with an energy service company (ESCO) for the provision an energy efficient service. The business doesn't invest in the equipment themselves, but pays an ESCO for the provision of a service and an agreed level of energy saving (typically shared between the business and ESCO). For example, rather than a business investing themselves in a new LED lighting system, the ESCO will provide an agreed level of illumination and take responsibility for the installation, operation, maintenance, ownership, upgrading and/or disposal of the necessary equipment.

Generally, energy service contracts can be separated into:

- Energy supply contracts (ESCs) – primarily focussing on the delivery of useful 'energy streams' (e.g. steam, hot water and electricity) at a unit cost (£/kWh) below a baseline.
- Energy performance contracts (EPCs) – primarily focussing on the delivery of 'final energy services' (e.g. heating, lighting and refrigeration) at an annual energy cost (£) below a baseline.

The key to energy service contracts are the performance incentives they provide, with payments typically linked to energy and cost savings. As a result of this, incentives are aligned to provide as cheap and sustainable a project as possible.

Several types of organisations can provide energy service contracts, including: facilities management companies, equipment suppliers and utilities, construction and engineering companies, procurement agencies, independent ESCOs and local authorities.

The pros and cons of using energy service contracts include:

+	-
• No capital expenditure • Cost of an energy service contract is considered tax-deductible Operational Expenditure (OPEX). • No maintenance requirements • Energy costs should be very competitive	• Contracts may be more than 5 years in duration • Do not own the asset

Grants

Non-repayable grants are available to support businesses looking to invest in energy efficient equipment. Grants pay for a percentage of the overall project cost (this percentage varies according to the programme and project requirements), reducing the capital investment required by the business. They are typically government or EU commission funded, and managed by local authorities, local enterprise partnerships or NGO 'type' organisations. Grant programmes will often be accompanied by funded consultancy support, to help business to identify the most appropriate opportunities for them.

The energy efficiency grant landscape is fluid and often regionally defined, therefore it is not possible to document all grant opportunities in this guide. In order to find grants that may be available to your business, we suggest reaching out to the following resources:

- Your Local Enterprise Partnership and Growth Hub
- Your Local Authority
- Online – it is worth searching the internet for key terms – such as "energy efficiency grants + your county"

The pros and cons of grants:

+	-
• Reduces capital expenditure required • Do not need to be paid back	• May need to be combined with another financing mechanism • Grant programmes can have specific eligibility criteria for both business and project

Tax incentives – Enhanced Capital Allowances

Businesses can sometimes claim enhanced capital allowances (ECAs) when making energy efficient or low-carbon capital investments. These first year allowances can be claimed in addition to annual investment allowance (AIA) and don't count towards the AIA limit. Although they don't help with financing and funding a project, they are an incentive to invest in the most energy efficient technologies.

ECAs can be claimed for the following equipment:

- Some cars with low CO_2 emissions,
- Energy saving equipment that's on the energy technology product list,
- Water saving equipment that's on the water efficient technologies product list,
- Plant and machinery for gas re-fuelling equipment e.g. storage tanks or pumps,
- Gas, biogas and hydrogen re-fuelling equipment,
- New zero-emissions goods vehicles.

*In Budget 2018, the Chancellor announced the end of the Enhanced Capital Allowance (ECA) and First Year Tax Credits (FYTC) Scheme for energy saving technologies from April 2020

The pros and cons of ECAs:

+	-
• Reduces tax bill in first year of purchase • Doesn't affect ability to use grant funding • Can be claimed in addition to Annual Investment Allowances (AIA) • Encourages purchase of energy efficient equipment • No need to claim further relief in future years	• Business still has upfront cost of equipment

Next steps

Step 1. Identify your energy saving opportunities

Conduct an energy audit to understand how much energy you are consuming, and where. Look at the age and efficiency of the technologies you have in place to help you work out which investments will help you to achieve the greatest savings. This can be a complex process so look to see whether you could receive a funded audit through the Green Business Fund or another local programme. There are also sector and technology specific guides on the Carbon Trust website to help you identify opportunities. Suppliers will also be able to give you a quote and indicative energy, carbon and cost savings for a project.

Step 2. Build your business case

Once you've identified your energy efficiency investment opportunity, you'll need to build your business case to get internal sign off (if required) and leverage finance. For in depth guidance on building a business case, please download the Carbon Trust's Guide "Making the business case for a carbon reduction project".

Step 3. Search for available grants

Look into whether there are any grants available to support your purchase of energy efficient equipment, ultimately reducing the capital expenditure required.

Step 4. Explore financing options

Does your business have the capital to purchase the equipment? If not, explore the financing options available to you:

- Asset-based lending
- Loans
- Leasing
- Energy performance contracts (EPCs) through Energy Services Companies (ESCOs)

Step 5. Purchase energy efficient equipment

Where possible, ensure that you purchase the most energy efficient equipment that check whether it is listed on the Energy Technology List, so that you can claim enhanced capital allowances.

Step 6. Monitor and measure the success of your investment

Measure and monitor the energy consumption and energy savings achieved from your energy efficient investment. Assess how accurate your predicted energy and cost savings were. This will be useful evidence when trying to secure buy-in for future energy efficiency investment.

Go online for more information

The Carbon Trust provides a range of tools, services and information to help you implement energy and carbon saving measures, no matter what your level of experience.

Website – Visit us at www.carbontrust.com for our full range of advice and services.

www.carbontrust.com

Tools, guides and reports – We have a library of publications detailing energy saving techniques for a range of sectors and technologies.

www.carbontrust.com/resources

Events and workshops – We offer a variety of events, workshops and webinars ranging from a high level introductions to our services through, to technical energy efficiency training.

www.carbontrust.com/events

Small Business Support – We have collated all of our small business support in one place on our website.

www.carbontrust.com/small-to-medium-enterprises/

Our client case studies – Our case studies show that it's often easier and less expensive than you might think to bring about real change.

www.carbontrust.com/our-clients

The Carbon Trust Green Business Fund – is an energy efficiency support service for small and medium-sized companies in England, Wales and Scotland. It provides direct funded support through energy assessments, training workshops and equipment procurement support.

www.carbontrust.com/greenbusinessfund

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The Carbon Trust is an independent company with a mission to accelerate the move to a sustainable, low-carbon economy. The Carbon Trust:

- **advises businesses, governments and the public sector on opportunities in a sustainable, low-carbon world;**
- **measures and certifies the environmental footprint of organisations, products and services;**
- **helps develop and deploy low-carbon technologies and solutions, from energy efficiency to renewable power**

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