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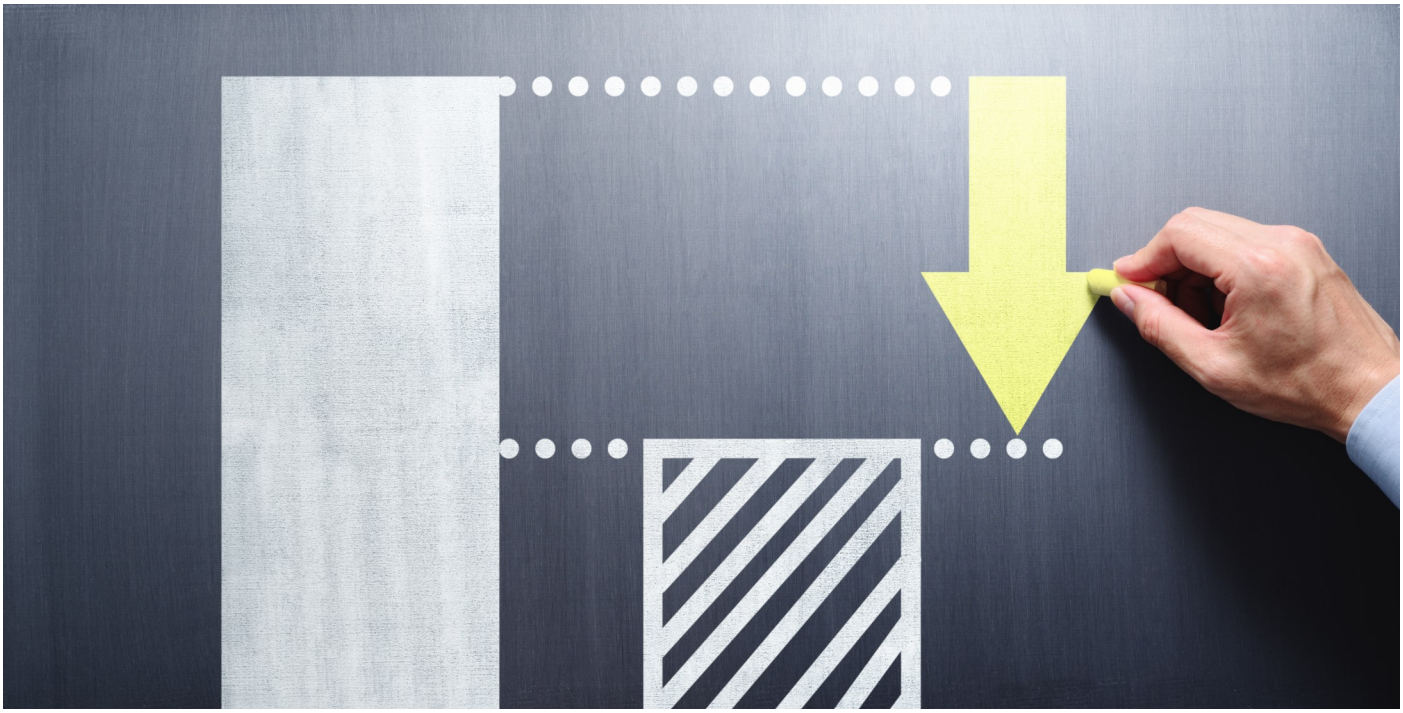
Delivering, unlocking & advancing the low-carbon economy

Minimising Energy Use for Micro-Businesses



Microbusinesses make up a considerable proportion of the UK workforce. With over 5.7 million microbusinesses registered in the UK, these businesses can play a key role in reducing our carbon emissions by taking steps to improve their own energy efficiency. Despite the importance of microbusinesses in the fight against climate change, they can often face large barriers which prevent them from taking the first steps to running a more energy efficient business.

What exactly is a microbusiness?

- Fewer than 10 full-time employees
- Has an annual turnover or balance sheet of less than 2 million Euros (roughly £1.7 million)

Many microbusinesses are aware of the need to reduce energy use, and to prevent energy waste and are keen to implement strategies to help with this. Aside from the obvious benefit to businesses of decreased energy bills, taking steps to improve energy efficiency can also improve employee comfort and wellbeing, as well as business reputation. But with such a wide variety of microbusinesses in the UK, it is important to note that there is no one size fits all solution when it comes to energy efficiency measures.

JARGON BUSTER

Net Zero	An overall balance between all greenhouse gases emitted to the atmosphere, and the greenhouse gases removed from the atmosphere
Carbon neutral	A balance between the carbon dioxide emitted, and the carbon dioxide removed from the atmosphere
EPC	Energy Performance Certificate. This gives a property an energy efficiency rating from A to G, where A is most efficient.
MEES	Minimum Energy Efficiency Standards. A requirement for commercial buildings to meet certain minimum EPC ratings.
CO_2e	Carbon dioxide isn't the only greenhouse gas to worry about. CO_2e is a measure which scales the damaging effects of greenhouse gases relative to CO_2. For example, 1kg of methane (CH_4) would have a carbon dioxide equivalent of 25kg CO_2e.
Energy efficiency	Using less energy to perform the same task. For example, energy efficient lighting will light a building to the same, or a better standard than before, while using less energy.
Intervention/ measure	Actions or installations taken to prevent energy wastage, or to improve energy usage.
Emission scopes	Greenhouse gas emissions from business activities are categorised as Scope 1, Scope 2 or Scope 3, depending on their source.

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SMART METERS

By now, most people are aware of the smart meter rollout throughout the UK for domestic properties, but as a microbusiness you are also entitled to have one installed, free of charge. There's a common misconception that simply having a smart meter installed will save you energy. This isn't true—you, as a consumer, must put in the work to save energy. Smart meters are tools which provide you with information to help you reduce you energy consumption. They also provide accurate billing information, which can be very useful when budgeting. If you rent your premises and want to get a smart meter installed, you can do so if you are the billpayer. If energy bills are included in your rent, you will have to ask the landlord

GREEN TARIFFS

Energy suppliers often advertise "green tariffs", with the promise that your electricity will come from 100% renewable sources. This seems a great deal on the surface, and a good step towards achieving your company's net zero goals.

In actual fact, this simply means that all of the electricity you consume is "matched" by purchases of renewable electricity, performed by your supplier. The actual electricity your business is using will still come from the same mixture of renewable and fossil fuels as it would with any other tariff. The difference is that your usage is just offset elsewhere on the grid. This means that your supplier could be doing very little to ensure that new renewables are being developed and added to the UK's energy mix.

Suppliers can also claim to provide green gas. This is known as biogas, and this can be produced and distributed via the existing gas grid. Biogas is also known as biomethane, and is produced through the anaerobic digestion of organic material, such as food waste. Because biogas comes from organic material, it is considered green, as the material absorbed CO_2 during its lifetime, which is then released again as the gas is burnt.

RENTING

Most commercial tenants are responsible for their own energy bills, meaning that they are an additional cost on top of rent. All too often, trying to cut these costs and save energy comes with a high upfront cost. This means that costly building upgrades may not feel worthwhile for tenants who do not own the building, as it will be the landlord who benefits in the long run. However, there are still steps that can be taken to improve your energy efficiency.

The first step should always be to communicate energy efficiency ideas or concerns with your landlord. Measures such as insulating and improving building fabric, or even installing solar PV could be in their interest. They may also be more willing to contribute towards such measures, as it will benefit them in the long run by making the site more attractive to future tenants. There are also forthcoming changes to EPCs, which mean landlords must improve the energy efficiency of their buildings.

As a tenant, you need to take control of your energy metering and make sure you understand how your property owner is billing you. If you suspect you are being overcharged, consider getting a sub-meter installed to tell you the exact energy usage for your part of the building.

ENERGY USE WHEN RENTING

If your energy bills are included in your rent, there is very little incentive to actually save on energy. However, making an effort to reduce energy use overall can result in improvements in working conditions for employees, which can lead to improved staff wellbeing and productivity. Examples of this can include:

- More comfortable, consistent temperatures
- Eliminate draughts, dampness and mould
- Better quality lighting from LEDs
- Reduced noise pollution from old motors, fans, or leaky air compressors

Energy efficiency initiatives may improve your company reputations. As the world becomes more energy conscious, companies whose products and services are provided in energy conscious ways are likely to be more attractive to customers.

When choosing new equipment for your business it may be tempting to choose less efficient items for a lower upfront cost, especially if you don’t pay for the running costs. However, if this equipment will last you for a long time, it’s important to consider the future use. If you move premises or the terms of your rental agreement change, it could become your responsibility to pay for your energy costs. Buying energy efficient equipment when upgrades are needed could be a sensible future investment.

CREATING AN ENERGY AWARENESS CAMPAIGN

An energy awareness campaign will be unique and different depending on your business needs. The first step is to identify how your business uses energy and where it wastes energy. Set realistic, SMART (Specific, Measurable, Achievable, Realistic and Timed), or science-based goals, and target the areas where energy is wasted.

Make sure that staff are aware of how energy efficiency improvements can benefit them. Staff are more likely to comply with measures if they understand the positive impacts on them. Mentioning things such as increased staff wellbeing, reduced carbon footprint, and improved company reputation may help people understand the need for improvement.

The message needs to be effectively communicated:

- Social media and messaging using concise messages
- Posters/intranet posts (keep these visible and updated regularly)
- Staff competitions and suggestion schemes (get people involved to increase motivation)
- Meetings (make sure energy saving is on the meeting agenda)

DRAUGHTPROOFING

If you work in an older building, chances are that you're all too familiar with draughts. Many people just learn to put up with them, or take the alternative route of turning up the heating to compensate. By stopping the source of the draught we can help to save energy and increase our workplace thermal comfort.

Areas to consider installing draught excluders include doorframes, window frames, chimneys and letterboxes. Attic access hatches or old extractor fans can also lead to draughts. Assess your building to identify any areas which could benefit from draughtproofing.

Draught excluders make a modest difference to your energy bills, but are an inexpensive way of immediately making the environment you work in more comfortable. Chimney balloons can be installed to prevent draughts coming down the chimney.

If your site has roller shutter doors that are frequently opened, a cost effective way to reduce heat loss is to install PVC strip curtains on the inside of the building. Brush seals and rubber strips can also be installed on roller shutter doors, to further reduce draughts.

Before installing any form of draughtproofing, make sure that you are not blocking up any vents which allow airflow throughout the building. This can cause condensation to build up, leading to mould and damp.

CONTROLS

Lighting controls, such as motion sensors and time controls are important to consider. Leaving lights on when not required can lead to excessive energy waste. There are several options to consider when choosing lighting controls, with different controls best suiting different situations. Good controls can reduce the energy usage of lights by 30 and 50% in some areas.

Heating controls are another good way to reduce energy waste. A room thermostat will prevent rooms from overheating, which is a waste of energy. A programmable thermostat can be set to only heat the building during times when it will be occupied. The placement of the thermostat is important to take into account, and a heating engineer should be consulted to ensure that this is installed in an appropriate place.

Thermostatic radiator valves (TRVs) can be attached to radiators to regulate individual room temperatures. If you have rooms which are not in use, set the TRVs low to provide frost protection and save you energy.

HEATING

If you are using direct electric heaters to heat your building, or even to give a boost to the main heating system, you are heating in the costliest way possible. Electric heaters are 100% efficient, meaning that for every 1kWh of electricity they use, 1kWh of heat is delivered to the surroundings. However, electricity is expensive compared to other fuels. In comparison, alternative technologies such as heat pumps are around 300-400% efficient. This means that for every kWh of electricity consumed, 3-4kWh of heat are given out. The impossible sounding efficiency is because of the way they operate—moving heat energy from the outside air and delivering it to a space that requires heating.

EQUIPMENT

Regular maintenance and servicing of your equipment is one way to ensure that it is working as efficiently as possible. Poorly maintained equipment can work highly inefficiently, consuming more energy than it should. For example, cleaning the condenser coils on the back of a fridge can help the fridge push out heat and keep the inside cool. Changing filters on exhaust fans is another way to ensure equipment remains efficient. The benefits of regular maintenance and properly functioning equipment are not to be underestimated. In addition to improving efficiency, your equipment is likely to last longer if properly serviced.

Businesses frequently use old equipment for longer than its recommended lifespan. This can include computers, hot water storage heaters, air compressors and non-LED lighting. People will continue to use equipment if it still works, ignoring the fact that this may be costing them more in energy and money. When it comes to replacing equipment, make better energy related buying decisions by finding the most efficient appliances.

A simple example of this is a PC. Desktop PCs are far more power hungry than their laptop alternatives. An average desktop PC may have a wattage of 200W, whereas a laptop would be closer to 50W. If these machines are run for the same amount of time each day, over the course of a year a PC will have consumed 4 times as much electricity than the laptop did. As energy consumption equates directly to cost, this means that a PC can be 4 times as expensive to run. More importantly, this would emit 4 times the amount of greenhouse gas emissions a laptop would.

Substantial savings can be made by keeping an eye on what appliances we commonly use in our day-to-day work, making sure that we have records of how old they are, and when they were last serviced, and ensuring that they are replaced (and recycled) appropriately when it is no longer practical to run them.

ENERGY LABELLING

Every appliance and product sold in the UK comes with an energy label. These stickers can tell us about the energy consumption of an item. We've already discussed the benefits of choosing lower-powered alternatives to our everyday items. Energy labelling provides us with the information we need to be able to make these choices.

Previously, energy labels ran from A+++ to G, with A+++ being the most efficient. However, as products because more energy efficient, the market was saturated with A+++ items, with no way of finding out which product was actually the most efficient.

To properly display the energy efficiency of products, the new energy label was introduced, simply running from A-G. Products with previous ratings of A+++ will be given a lower rating under the new system. This is to make way for even more energy efficient products to enter the market. For a period of time, products may appear with two labels on—the old-style label and the new. The most up to date label will have a QR code on it, allowing you to learn more about the product. More information about the energy labelling system can be found here.

EPCs EXPLAINED SIMPLY

An energy performance certificate (EPC) shows how energy efficient a property is. The energy efficiency rating estimates your property's energy performance based on a site visit from an EPC assessor and a standard calculation methodology using an approved software package. A property is given a rating from A-G, where A is most efficient.

If you are a tenant in rented premises, your property should have an EPC. You can find a property's EPC by typing the address into the government register. As of April 2018, an EPC rating of E or above is required at the point of granting a new lease, or renewing an existing one. From April 2023 landlords will be responsible for having an EPC rating of E or above, even if a tenancy is already underway. If this isn't the case, your landlord will be obliged to make energy efficiency improvements. Over time, the government plans to tighten up the requirements, to make the minimum requirement a D, C, or even B rating.

As a tenant, you can commission an EPC assessment of your building at any time. This will give you a good starting point from which you can begin to reduce your energy bills. Other benefits include:

- An understanding of the energy performance of your premises
- Identifies areas for improvement
- Quantifies cost and carbon savings made by improving your property

Any improvements made since your EPC was last produced will not appear on the EPC, and a new one will be required to reflect these improvements.

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ABOUT US

Decerna provides a wide range of consultancy and development services, to ensure that the right decisions are made, to support our customers in the whole journey, from initial concept through to implementation of low carbon systems and infrastructure. Please get in touch to find out how we can help your organisation to de-carbonise.

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