ENERGY REDUCTION

Energy reduction is the best first step in tackling both energy bills and climate change: the cheapest kWh is the one you don't use. It's also the one with least climate impact.

There are many ways to reduce energy, from behaviour change to use of technology, and from low-cost quick wins to opportunities requiring a degree of investment to get to the savings.

For greatest success, you first need to learn how you use energy and for what purpose, to measure so that you know where to focus your effort: this is energy auditing. Then plan what to do, implement your plans and monitor outcomes – this is the start of energy management.

If you only have one electricity meter for your site, it is possible to hire data loggers to find out your biggest users of electricity – these will track consumption for specific items of equipment. This can be important, as it's not always what you expect that uses most energy. Air conditioning, for example, is a very high energy user, but consumption for this may be more easily reduced than production equipment. Frequent meter readings are also useful, so you can see the differences in energy used on work days and non-work days, in winter and in summer. If you have a meter that registers half hourly, and can download the data, you can review energy use directly against production times.

Examples of quick wins to think about that will cost nothing or just a little are:

- **Checking for draughts and preventing them –** it can make a big difference for very little outlay.
- **Shading windows against the summer sun.**
- **Behaviour change programmes to encourage staff to turn off lights, computers, monitors when away from their desks, air conditioning in empty meeting rooms, compressors or other energy-using equipment left on standby for long periods and so forth: anything that doesn't need to be on but is drawing energy.**
- **Make sure windows and doors are not left open in air-conditioned areas.**
- **Check controls for heating and cooling equipment – make sure there is a 'dead band' of at least 5°C between heating and cooling set points so they don't both come on together.**
- **Automated controls: especially useful turning lights on and off in warehouses, toilets, kitchens, meeting rooms and corridors.**
- **Heavy duty strip curtains to allow entry and exit through goods-in doors without letting all the heat out.**
- **Insulation: windows, roofs, walls – whatever you can – against winter cold and summer heat.**
- **Effective maintenance, especially of air conditioning, boilers and compressed air lines.**
- **Mistake-proofing workflows to avoid the energy (and other) waste of redoing work.**
- **Avoiding unnecessary travel.**

To see where energy for heating is being wasted in winter, you can hire an infrared camera, sometimes called a thermographic camera. These show intensity of heat loss from your building, so you can see where you are wasting most heating energy.

There are many sources of information about how to look for and implement ways to reduce energy. One of the more comprehensive is the Carbon Trust, which includes guidance on how to do an energy audit; Energy Star is another useful resource for how to save energy, with how-to guides, checklists and energy-saving tips.

If you've not already changed your lighting, investing in LEDs can have a swift payback, depending on your usage. Another advantage is that their longer lifespan can reduce the cost of hiring access platforms for high-level lamp replacement.

Renewables are an essential part of reducing your carbon emissions (and energy bills for on-site renewables), but the less energy you need to run your business, the better.