green energy uk
cleaner | greener | electricity

Carbon Diet at work

put your business on the green energy uk Carbon Diet

Help the environment and keep energy bills trim. Follow the Carbon Diet and help your business stay in shape by reducing the size of its energy bills and CO2 emissions.

The first step is to make everyone in the organisation aware the business is now on the Carbon Diet and is trying to reduce CO2 emissions by using less energy. Encourage people to be responsible for the energy use in their work areas. We believe that by working together at this purpose it is possible to reduce CO2 emissions of your business by at least 10%.

LIGHTING

Nearly 20% of the money businesses spend on energy is for electricity to power lighting. We need light to work, but do we always need so much of it? To reduce the amount of energy used for lighting it's crucial to take advantage of free sunlight and make the most out the workplace's electric lighting.

TASK Ask for volunteers to form teams and have each team survey designated areas of the business to look at the type of electric lighting used and to see which bulbs can be replaced by energy efficient ones. Remember to apply the same principles to communal areas like the corridors, reception, toilets, the canteen and staff room. Volunteers need to identify areas where Critical Light Mass (CLM) can be maintained without electric lighting, areas where electric lighting is unnecessarily left on, and areas that could benefit from motion sensors or timer and dimmer switches.

Traditional filament bulbs create a lot of heat and waste energy and should only be used in places where lights are lit for short periods of time. If possible, replace all filament bulbs in your office with energy efficient bulbs or compact fluorescent lamps. Energy efficient bulbs use 80% less electricity than filament bulbs and waste very little electrical energy through heat, and are ideal for the office and places that are lit for long periods. Strip lighting, sometimes known as fluorescent lighting, also wastes very little electrical energy through heat. Strip lighting distributes an even level of light over a wide area and is recommended for prolonged use in large areas. Spotlighting does not use up much energy alone. However, spotlights only light up a small area, so should never be used to light a room.

CLM is the amount of light each of us needs to be able to see clearly and work effectively. The purpose of discovering CLM in each area is to see if it can be achieved by using natural light alone, or by using the minimum amount of electric lighting necessary. There is no set figure for CLM, but it can be judged through trial and error. For example: can the electric lights be turned off after 10am each day? If not, what about using a dimmer switch to dim the lights?

Ways to achieve energy efficient CLM and lessen energy use

1) Clean dirty skylights, windows and glass doors.
2) Pull back curtains as far as they go and repair curtains that do not pull back.
3) Clean windowsills and blinds to improve their light reflection. Repair blinds that do not open fully.
4) Use sensor or timer switches where lights do not need to be kept on all the time.
5) Use dimmer switches in rooms where lighting is too high.
6) Paint rooms light colours so the maximum amount of light is reflected.
7) Increase the amount of natural light by removing anything inside or outside that is blocking it from entering. This includes trimming back any bushes and trees to let extra light in.

REVIEW Once areas have been surveyed by the teams review the findings and recommendations, carry out the changes that can be done, and after a week have the volunteers reassess the areas to see what difference has been made. It might be that further changes need to be made, but if the problems have been cured you should find at least a 10% reduction in the amount of electric used to light the office.

ELECTRICAL APPLIANCES

TASK First take a meter reading and then again a week later to see how much electricity the business uses in one week.

By sharing responsibility for appliances with everyone in the organisation, each person will better understand the objective to save energy. Arrange for each department to look at electrical appliances in their workplace, noting if the appliance is on, off or on standby. Once this information has been collected, you'll be better placed to identify where energy can be saved.

Monitors displaying a screensaver are still using the same amount of power. Turning off a PC and monitor when they're not needed not only saves the screen, but saves energy and expense, too. For long breaks and meetings from the desk and at the end of each day, encourage staff to shutdown their PCs and switch off at the wall. If you are away from the computer for just a short period, but do not have time to shut down your PC and boot it back up, adjust the computer settings to 'hibernate' or power saving mode, which uses less energy. The average monitor left on standby uses up to 75% the amount of electricity it would have used if left on - you can avoid unnecessarily losing this energy by simply switching off at the plug. If you know you have electrical appliances in your office left unnecessarily on standby, encourage people to always turn them off at the plug. To help people remember, create posters or stickers that act as reminders (ask green energy uk for some stickers to help you get started).

There are also products available that can help your businesses save energy and money, such as intelligent multi-plug adaptors that turn off all other electrical devices connected to it when you shut down your PC. One multi-plug adaptor can save up to £46 worth of electricity per year.

Printers and other IT equipment can also waste energy. Do your printers and scanners need to be switched on all the time? If not, turn them off at the plug. A photocopier left on and inactive for four hours will have wasted enough energy to do 2,500 copies. If possible, turn photocopiers off and organise a period in the day when one is switched on for everyone to do their photocopying (remember that a photocopier takes about ten minutes to warm up).

If you're making a drink for colleagues, only boil the amount of water needed. Boiling two litres of water for one cup uses ten times more electricity than is needed. Some offices have tea urns, or urns for hot water - if these are older models they can waste a lot of money and electricity by taking a long time to heat, and those that are left on for long periods waste a lot of heat. If possible, replace the urn with an energy saving urn, eco boiler, eco kettle or vending and drinks machine that uses less energy.

Some office canteens have dishwashers. The most energy efficient way to use one of these its to always fully load it. They still boil and run the same amount of water as they would with a smaller load. You could halve the dishwasher's energy use by doing this.

REVIEW Once you're satisfied people are using appliances differently and turning them off at the plug when not in use, check the meter reading over one week to compare to your previous meter reading and see what difference has been made.

HEATING BILLS

More than 40% of the money businesses spend on energy goes towards heating. If we are to be productive and work well, especially when the weather is cold, we need warmth. However, it's also important to control heating costs and save energy.

TASK Each department should be armed with a thermometer to measure and record the temperature of their workplace at different times of the day, before work, during core hours and breaks, and during overtime. After each team has collected its data, the next stage is to produce simple charts for each area, because we are going to compare these findings to see what optimum temperature should be.

The optimum temperature is the level of heat we need in order to feel comfortable, and is what we should be aiming for in each area. In work areas where people are gathered for long periods, the optimum temperature we are striving for is 18°C. In the staff room and canteen, the optimum temperature is between 15-18°C, and in corridors and toilets it should be 15°C. Areas above or below their optimum temperatures, or which are using heat when no one is present, are wasting energy and we need to identify the causes for this and solutions. You may need to work with the facilities manager to implement solutions.

Causes of wasted heat...and how to avoid them

the problem	the cause	what to do about it
Areas reach optimum temperature before work starts, so waste energy, OR areas only reach optimum temperature after lessons have begun.	If before work: the boiler is firing up the heating system too early. If during work: the boiler is firing up the heating system too late.	If before work adjust the timer control for the boiler so that it starts later and begins heating the building when people start arriving. If during work: adjust the timer control, setting it earlier. It might take a few attempts to find the right time to set the boiler to start.
Areas are always above the optimum temperature, so waste energy.	The boiler's thermostat is set too high for the heating system.	Turn down the thermostat until the right level is found.
Some areas have optimum temperature, but others are too hot, OR some areas reach optimum temperature, but others are too cold.	If too hot: individual radiator thermostats are not fitted or incorrectly set. If too cold: thermostats are incorrectly set. Heat is being lost through open windows or doors.	If too hot: if you have individual radiator thermostats, turn them down in the areas that are too hot until the optimum temperature is found. If you do not have individual radiator thermostats, fit them, as the thermostats will help you achieve optimum temperature and save you energy and money. If too cold: if you have thermostats, turn them up in cold areas until the optimum temperature is found. If doors and windows are left open, create 'close this door' and/or 'close this window' posters.
Areas are consistently below the optimum temperature.	Heat is being lost through open windows or doors, or there could be a problem with the heating system.	Again, as above, use 'close this door' and/or 'close this window' posters where needed. An engineer may need to check that the boiler is working properly.
Areas are below the optimum temperature before work finishes, OR areas are still at the optimum temperature after work.	If before work: the boiler is shutting down too early. Heat is being lost through an open window. If after work: the boiler is keeping the system running too long.	If before work: adjust the boiler's timer for later so that it turns off at the right time for when people are leaving. Also, again make sure doors and windows are closed, creating posters if necessary. If after work: adjust the timer so that the boiler shuts down earlier. It may take a few attempts to discover the right times to set it for.

Five simple ways to conserve energy and improve your workplace's heating

1) Prevent heat escaping through pipes that carry hot water from the boiler to the radiators by insulating the pipes with a foam cover.

2) Clear obstacles from in front of radiators so heat can fill the room.

3) Put aluminium foil behind radiators that are attached to external walls to reflect heat back into the room instead of letting escape through the wall and to the outside.

4) Well-maintained radiators will function more efficiently and save energy, so regularly bleed radiators to release trapped air.

5) Identify draughts in each area of the workplace and remedy the problem. Fitting draught excluders to all gaps around doors and windows will keep areas warmer and save energy.