

# FACTSHEET: What can you do to improve your environmental impact?

Having established a commitment to environmental issues, your business can now look at the individual areas of the business that affect the environment. You should assess your current impacts, decide your targets and reduce your impact.

## ***Current impacts***

The first step is to make an assessment of your current impacts. Often the best way to do this is to consider the most recent year. Depending on where you are in your financial cycle, you may wish to begin by assessing the impacts of your last financial year or current year to date.

Some businesses look at the impacts on a month by month basis, which is an excellent format. It is then possible to see trends and make good estimates of emissions, resources and waste on a 'per turnover' or 'per profit' basis.

## ***Decide your targets***

Having established the impacts of your business in the recent past, it will be possible to set targets going forward. The key to reducing business emissions generally is improved efficiency. Targets should never be absolute figures, but expressed as amounts per turnover or profit. You may find targets difficult to set. Just how much can you reduce your emissions by? There is no fixed rule and you may simply want to do what you can and monitor the results. If your impacts are already very low, then a target of 3% reductions year on year can be a useful guide. A business that has made no efforts regarding the environment in the past may be able to make much larger reductions in the first year.

Business areas for you to consider include the following:

- Travel
- Car Emissions
- Energy
- Water
- Waste & Recycling
- Purchasing

The further pages of this Factsheets addresses how to assess your current impacts, decide your targets and reduce your impact in each of these areas.

## ***Reduce your impacts***

We have developed a system called Carbon Accounting for Smaller Entities. This has been published by the ACCA, our professional body.

The objective of the Carbon Accounting for Smaller Entities is to enable small entities to prepare simple, robust and consistent environmental reports.

We recommend use of this procedure for all small entities with turnover up to £6.5M. This includes companies of all types, charities, partnerships and sole traders. This is free for anyone to use and we think this is an excellent way which any business can measure and more importantly reduce their own impact on the environment.

# Travel

## Assessing your environmental impacts

To calculate your business' current carbon dioxide emissions it is necessary to know two things for each journey: the distance travelled and the emissions per mile or km. The accepted way to calculate emissions is based on average emission rates multiplied by the distance travelled. Emission rates quoted vary but are typically (all relate to grams of carbon dioxide):

- Train or coach 53g / km (86g / mile)
- Underground or local bus 122g / km (196g / mile)
- Small or efficient car 94g / km (151g / mile)
- Typical family cars 95g to 150g / km (153g to 241g / mile)

Calculating the emissions relating to air travel is potentially complicated; however a reasonable estimate can be made using the distance multiplied by emission rates method. Emission rates quoted often vary but are approximately:

- Long haul flights 220g / km (354g / mile)
- Short haul (Europe) flights 188g / km (303g / mile)

When recording carbon dioxide emissions relating to travel include all employee travel between home and work.

## Deciding on your targets

The amount of emissions will depend on your business size, complexity and sector. The amount travelled may be proportional to business activity and therefore absolute targets will not be sensible. It is more realistic to set targets in relation to turnover. If you have not considered reducing travel emissions before then targets might only be a fraction of current levels. Once significant efforts have been made then future targets may be to aim for 3% year on year reductions in carbon emissions.

## Reducing your impacts

One of the main ways in which many businesses can reduce travel emissions is to use public transport. Driving into London takes more time than going by train and you can't read and catch up on emails. Once you get to know the stops and times you will realise that travel within or into most cities is far more enjoyable by bus than by car. You get to whiz along the bus lanes!

There is also a more straightforward approach: public transport is less environmentally damaging than private cars. Some use of a car within a business may be unavoidable. Some journeys might require three buses and a long walk instead of one car drive. If you have targets for emissions per £1,000 turnover then it may be more efficient to use a low emission car for such journeys.

Air travel can be avoided by small businesses. Discussions with management in overseas offices, for instance offices within the same group of companies as your own, can easily be carried out using internet based video conferencing. If an overseas business trip is essential, try to delay it as long as possible; doing this each time will reduce the number of trips in the long run. If the trip is within Europe then travel by train.

# Car Emissions

## Assessing your environmental impact

The amount of carbon dioxide emitted from car journeys is directly proportional to the amount of fuel used. The most direct method of calculating CO<sub>2</sub> emissions is to multiply petrol used (litres) by 2.30 to give the amount of CO<sub>2</sub> in kg (for diesel multiply litres used by 2.68).

If the amount of fuel used in litres is not known then an estimate can be made using the amount spent on fuel divided by the price per litre.

Alternatively miles driven (converted to km by multiplying by 1.61) can be converted to CO<sub>2</sub> kg using the CO<sub>2</sub> g/km for your car (usually found on the car registration document). This is the least accurate method as it does not take account of the type of journey, style of driving and inefficiencies in individual engines.

Your record of car emissions should include all business journeys that are paid for by the business. This may be direct payment of fuel or through mileage expense records.

Journeys to and from work should also be included for all employees, directors and owners of the business. This gives the highest possible figure, which is then your starting point for targets and reductions. Remember, most businesses do not publish the actual figures so there is no benefit in avoiding counting journeys for any reason.

## Deciding on your targets

A sole director or sole trader working in central London may be able to aim for zero car emissions. A rural veterinary surgeon may have no choice but to travel by cross country vehicle (4x4) to every appointment they attend. Most contractors and businesses will fall somewhere between. As with all of the environmental impacts there is no fixed standard and very little information currently available relating to benchmarking.

The target you set for car emissions will depend on what efforts have already been made. We recommend that targets are set in terms of grams of carbon dioxide per £1,000 of turnover.

As with any budget it can be helpful to establish the target as the best estimate of what will actually happen. You may want to break the target down between journey types, individuals or work types.

## Reducing your impacts

Where possible simply don't use a car. Ways to avoid car travel include home working, telephone calls instead of meetings, video conferencing, public transport, walking and cycling. Where use of alternatives is not possible, lift share schemes should be considered and there are also taxation incentives to create such schemes.

Route planning software should be used to ensure that multi stop journeys can be planned efficiently. Rush hours should be avoided when possible as traffic jams significantly increase average emission rates.

## Smaller cars

You should know your car's emissions per mile or km either by recording fuel use or looking up the official figure. If your car's emissions are more than 120g/km and your work does not take you off road then consider changing to a more efficient car. If possible purchase second hand as this avoids further environmental impact involved in supporting the manufacture of new vehicles and scrapping of serviceable ones.

Electric cars charged with electricity from 100% renewable sources are the least polluting car option. The range of cars available in this category is growing all the time. A more realistic option for most business use is a car with CO2 emissions of 94g/km or less. These include some models from the following ranges: Ford Focus, Audi A3, Toyota Prius, Seat Leon and Citroen C4 and many more. Remember that hybrid cars use a combination of petrol and electricity, some use a lot of petrol, others little. It is irrelevant whether a car is hybrid or not, what is important is the actual amount of emissions.

Cars with emissions of 94g/km or less have many benefits:

- 94g/km is an achievable benchmark level; these are the least polluting cars and have lower running costs. There is however scope to reduce this further.
- From 2015/16 tax years cars with 94g/km or less have a lower percentage applied to calculate the benefit in kind tax (petrol 5% to 13%, diesel 16%). These percentages are increasing rapidly; by 2019-20 at car with 120g/km will have percentage of 28%.
- Businesses can claim 100% first year allowances on such cars purchased between April 2013 and April 2015. From April 2015 this is reduced to 75g/km or less.
- Congestion charges are removed for cars with emission of 75g/km or less.
- There is no Road Fund Licence (tax disk) charge for cars with less than 100g/km emissions.

## Mileage expense claims

Businesses can pay employees up to 45p per mile tax free for travelling by car. This can create an incentive for employees to travel by car rather than using public transport as the 45p per mile is likely to exceed the marginal cost of using the car. One way to avoid this car incentive is to only pay expenses at 15p to 20p per mile for car use.

Some companies have resolved this by having a policy of only paying car mileage when no other form of transport was reasonably available. Others will pay a fixed amount of expense per journey regardless of the transport used, although care is needed regarding taxation of expenses in this area.

Tax free mileage rates of 20p per mile for bicycle journeys and 5p per mile for each passenger can be paid. Tax relief is also available against the cost of purchasing a bicycle.

## Bio fuels

Most diesel engines will run on bio diesel with little or no modification. There are various methods of production of biofuel and various sources of the raw vegetable oils. Some sources are environmentally damaging and have been linked to monoculture farming and deforestation. Use of biofuel produced by palm oil is particularly destructive. Some respected sources say that it is preferable to use biofuel compared to fossil fuel, whereas others say it is not.

There are limited supplies of biofuel produced from waste cooking oils. Use of these fuels is considered environmentally friendly. It should be borne in mind that the limited supplies mean that they should not be wasted. Although processing costs are currently higher due to low volume of demand for bio fuels, there are much lower duties on bio fuels which mean that prices are competitive.

# Energy

## Assessing your environmental impact

Measuring the amount of emissions relating to energy use is relatively straightforward. As with all emissions recording you should specify reporting periods and measure accurately for that period, the period usually being each calendar month.

Taking meter readings on a regular basis should only take a few moments each month. Electricity may be partly or fully renewable. You will know this from your bill. Even if fully renewable we recommend that you include 10% of emissions which allows for inefficiencies in the distribution system and emissions related to manufacture and installation of generators, turbines and solar panel. Recording 10% rather than zero also means that profligate use is avoided.

The only point to note regarding gas usage is to ensure you are working with the correct units of measure. This can be established by reference to your gas meter or bill.

The conversion factors from meter readings to emissions are:

- Electricity 0.58 CO<sub>2</sub> kg / kWh
- Natural Gas 0.21 CO<sub>2</sub> kg / kWh
- Oil 2.53 CO<sub>2</sub> kg / litre
- Coal 3.07 CO<sub>2</sub> kg / kg
- Wood 0.11 CO<sub>2</sub> kg / kg

Converting other units of gas to kWh requires one of these factors:

- 1 Therm = 29.31 kWh
- 1 Cubic m = 10.67 kWh

Recording should include total kWh and CO<sub>2</sub> kg. These may also be expressed as kWh and CO<sub>2</sub> kg per square meter of floor area (1 square meter = 10.764 square foot).

## Deciding on your targets

Electricity usage best practice depends on sector and on the type of building you are in. Examples of targets for electricity usage are 44 kWh per square meter per year for standard offices, add 40 kWh / m<sup>2</sup> pa for air conditioning and a further 66kWh/m<sup>2</sup> pa for a building with night storage heaters and no gas heating.

An example of a gas heating target is 59 kWh per year per square meter.

All energy usage will vary depending on temperature. For those that are particularly keen there is a concept known as degree days that enables adjustment for the average temperature during the month. We recommend that totals are simply recorded and then year on year averages are targeted for reduction.

## Reducing your impacts

Electricity supplied with a valid Climate Change Levy Exemption Certificate should be counted as Certified Renewable. Your supplier will be able to tell you the percentage of renewable energy used.

To reduce the amount of electricity there are some immediate steps such as turning computer equipment off at night and turning monitors off at lunch time. No equipment should be left on standby when not in use. Energy efficient light bulbs are an obvious next step. Many actions will be longer term and are centred on buying equipment that is energy efficient.

It should be remembered that air conditioning is a relatively new fad in this country and many millions of workers manage perfectly well without it. There is no legal maximum, although the TUC have called for an upper limit of 30C for non-strenuous work. A far better solution to overheated work areas in summer is to effectively insulate your building and implement natural air cooling and shading systems.

Gas usage can often be considerably reduced by installation of more efficient boilers. Heating controls should be temperature, time and day of week dependent. The law on minimum temperatures is clear and unambiguous - 13C for strenuous work and 16C generally; certainly thermostats should be set at less than 20C.

Contractors and very small businesses may be able to consider wood burning to heat the workplace. Wood is effectively a battery for solar power. If trees are considered a temporary store of carbon (compared to fossil fuels) and your wood is from a renewable source or saved from landfill then burning wood is effectively carbon free. However, in line with best practice we recommend accounting for 50% of emissions caused by wood burning (rather than zero) to allow for the time delay in new trees reabsorbing the carbon.

Solar panels are a cost effective way of reducing energy related emissions. There are two main types of solar systems: water heating collectors and photovoltaic solar electric panels. In financial terms both types offer an annual saving of approximately 3% of the investment. In terms of environmental impacts, solar can reduce carbon dioxide emissions by up to 500kg per year for every £1,000 investment.

# Water

## Assessing your environmental impacts

If your water supply is metered then obtaining readings should be straightforward.

Bottled water, whether in small bottles or as part of a dispensing machine, is extremely wasteful in terms of pollutants, energy in bottling, plastics and transportation. Production of 2 plastic bottles is the equivalent 1kg or CO<sub>2</sub>. Record any use of bottled water within your businesses separately from tap water.

## Deciding on your targets

Although there are emissions associated with the extraction, storage and purification of water these are not usually calculated. Instead, set a simple target of between 4.1 litres per person per day (best practice) and 12.3 litres per person per day (satisfactory). These figures are from the BRE Environmental Assessment Method.

## Reducing your impacts

The first best step is to acknowledge that tap water in the UK is perfectly healthy to drink. It is simple enough to store tap water in a jug or bottle in the fridge, and replace it as it is used up. This will also reduce electricity demand compared to putting warm shop bought bottles in the fridge or operating a water cooler and dispensing machine.

Water use in toilets can often be reduced by putting purpose designed “water hippos” in the cistern. Urinals that flush through the night and weekend should be modernised with proximity sensors or at least with time and day controls.

Processes that have traditionally involved large consumptions of water are modernising. Printing for example can now be carried out using waterless systems. This not only saves millions of litres of water, it also drastically reduces many of the pollutants that traditional printing gives rise to.

# Waste & Recycling

## Assessing your environmental impacts

Waste and recycling is an area that many small businesses are surprisingly poor at dealing with. And yet it is very straightforward to reduce landfill waste.

In order to assess your business' current waste that is sent to landfill you could weigh one bag (or a few to get an average) and keep track of the bags sent per month. Alternatively if you are charged by the bag or tonne then your financial record can be used.

The record to be kept is the total weight of rubbish sent to landfill per £1,000 of turnover.

## Deciding on your targets

The amount of waste that is being produced by your company will vary with production and sales. There are no records of best practice, this is simply a case of reducing your waste, possibly as a factor of sales. One small survey of four offices making efforts to reduce waste going to landfill produced figures showing landfill amounts of 12kg to 45kg per person per year.

## Reducing your impacts

Almost all waste should be recyclable if purchases are made carefully and some effort to find facilities is made. Disposable items such as cups, cutlery and plates should be avoided because of the energy costs of production and transportation; and they are unpleasant to use.

Paper waste can be shredded (once or cross shredded) and then collected for recycling. If volumes are small you may find a keen gardener in your office that will be grateful to take shredded paper away to mix with grass clippings in their compost. Security firms will take away confidential papers for secure shredding and recycling.

Plastic bottles, glass and cans, cardboard and organic waste should all be recycled within most local authorities. Contact your local authority to find out what facilities exist.

One of the main barriers to recycling, particularly around offices, is ease of use of facilities. If each workspace has relevant recycling bins and the only landfill bin is located centrally (rather than the common practice of only one recycle bin) then all individuals will happily recycle, and are often very keen to do so.

Computer equipment must always be recycled. Charities and schools will often be very glad of serviceable computers. Removing all sensitive data is relatively straightforward with the correct software. Manufacturers such as Dell will take old equipment when purchasing new items.

Plastic bags are very damaging too. Production of just 5 plastic bags equates to around 1kg of CO<sub>2</sub>. Try whenever possible to reuse bags.

# Purchasing

## Assessing your environmental impacts

The methods, decision making processes and supplier selection criteria will necessarily be a subjective review, not a quantitative analysis. There may be aspects that can be analysed, such as percentage of supplies that have required an environmental statement, but on the whole it is a written statement of what actually happens and why that will record your current position.

## Deciding on your targets

Your businesses environmental policy relating to procurement should be drawn up and made available to everyone within the business.

## Reducing your impacts

All types of purchasing can be considered as part of an environmental policy. These include raw materials, goods purchased for resale, office supplies, utilities, services, financial costs and plant and equipment.

Purchasing new items should only be done when necessary. Items that are serviceable or repairable should usually be maintained unless there is a clear and significant energy or fuel efficiency to be gained by replacement.

All businesses should aim to purchase recycled goods where possible. Whilst businesses may be willing to recycle their waste, purchasing recycled goods remains an anathema. For instance recycled paper for use in the office is now capable of passing any Pepsi challenge against paper of the same weight and price. In the case of paper you should look for as high percentage of post-consumer waste as possible, this saves virgin forest, water and energy. You might also consider becoming an almost paperless office. Scanners, modern computers and easy to use software mean that archiving documents is viable for all businesses. Once you have experienced the benefits including fast searches of all documents you will only wish you had gone “paperless” sooner.

There are lots of other office and business products that are recycled, and all are vastly beneficial to the environment compared to purchasing products made from raw materials. It is also preferable to purchase items that will last rather than cheaper throw away products. The old saying goes “*Buy cheap, buy twice!*”

Businesses should minimise the use of natural resources and purchase non-polluting and energy efficient technologies wherever possible. Technology and design in your particular sector will have a range of efficiencies that you can explore. One item of technology relevant to most business is computing. If practical buy a laptop instead of a desktop; it consumes five times less electricity.

Local purchases (reducing your delivery schedule impacts) and low packaging (reducing your waste) should be part of all purchasing criteria.

When purchasing services you should consider the waste that the supplier produces and their general stance regarding the environment. In the case of a small local professional company this can often be gleaned by a glance around their website and car park. Banking arrangements can be made through Triodos Bank or The Cooperative Bank who both operate strong ethical policies.