



# Negotiator's Guide

## Greening your workplace Negotiator's Guide

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# Introduction

Climate change is a trade union issue because:

- the move to a low-carbon economy has massive implications for jobs
- it has huge economic consequences
- it is linked to many Prospect policies, eg international development
- it has implications for the working environment.

Prospect has a long history of involvement and a significant contribution to make in combating the dangers of climate change. As a union, we are uniquely well placed to make that contribution. Members in the Met Office, research councils, the Environment Agency, the energy sector and many other areas have a scientific or professional expertise and a common concern to address the most serious threat to the future of life on our planet.

We can make our contribution at many levels. Prospect and its predecessor unions have a proud tradition of leadership on policy and action within the Trades Union Congress and internationally through our Global Union Federation. We have helped shape TUC policy through motions to Congress. Through the Trade Union Sustainable Development Advisory Committee we have made an input to the big policy issues such as sustainable employment, the European Emissions Trading Scheme and climate change legislation, and initiatives including training and facilities for environmental representatives.

But on environmental issues – as with other issues – Prospect depends on its lay representatives to be effective in the workplace. This guide is intended to help reps at all levels, and interested members, in the practical work you do with employers, members and in the wider community. It builds on our experience over a number of years but is obviously not the final word on the subject. We would welcome your comments on what is bound to be a long running and continuing issue.

I am conscious, too of the need to put our own house in order and to make sure that we significantly reduce Prospect's own carbon footprint. Together with our staff and members we will be putting the ideas and suggested actions in this guide into practice in our own organisation and that must mean significant changes in the way we work.

Trade unions are collective organisations and although individual actions are important in tackling climate change, we must also have collective action. Working together, I believe that we can make a difference and this guide can help all of us to be effective. I hope you find it useful.

*Paul Noon, General Secretary*

# 1

## Climate change is real

### 1.1 Facts:

- Glaciers, snow cover and permafrost have decreased in both hemispheres
- by 2007, 12 of the past 13 years were the warmest since records began
- sea levels are rising at the rate of almost 2mm a year
- cold days, nights and frosts have become rarer while hot days, hot nights and heatwaves have become more frequent
- the European heatwave of 2003 caused 30,000 deaths. The direct costs were 13.5 billion dollars
- insurance payouts arising from the UK floods of 2007 will top £3billion
- the UK experienced the warmest year on record in 2006, with an average temperature of 9.7°C - 1.1°C above average.

### What the experts say

**1.2** The 2007 Intergovernmental Panel on Climate Change's assessment report has concluded, beyond any reasonable doubt, that Earth is nearing the stage when carbon dioxide rises will bring irreversible change to the planet.

**1.3** The Stern report, published in late 2006, says that time is running out to tackle the causes of climate change. "The task is urgent. Delaying action, even by a decade or two, will take us into dangerous territory. We must not let this window of opportunity close." It is a false economy to put off action because costs will only rise. The impact of global warming could potentially cost up to 20% of world GDP, which would lead to a recession on a scale not experienced since the 1930s.

**1.4** The proportion of greenhouse gas concentrations in the atmosphere is currently around 430 parts per million, compared with 280 ppm before the industrial revolution. Stern estimates that this will rise to 500-550ppm by

2050 on current trends, which would drive up temperatures by 2°C. But with growth in the world economy, the increase could be much higher.

**1.5** The predicted consequences for the UK are severe:

- infrastructure damage from flooding and storms
- water availability will be increasingly constrained and serious droughts will occur more regularly
- heat-related deaths will increase and cities will be uncomfortably hot during the summer.

**1.6** For more projections for the UK, see the UK Climate Impacts Programme's website: [www.ukcip.org.uk](http://www.ukcip.org.uk)

### International

**1.7** If climate change continues unabated, south and east Asia will be most vulnerable. According to the UN development programme, rising sea levels combined with storm surges mean that large parts of Bangladesh would simply disappear.

**1.8** The United Nations Environment Programme says the conflict in Darfur has been driven by climate change and environmental degradation, which threaten to trigger a succession of new wars across Africa unless more is done to contain the damage:

- the desert in northern Sudan has advanced southwards by 60 miles over the past 40 years
- rainfall has dropped by 16-30%
- crop yields could drop by 70%

**1.9** Stern says the solutions are:

- pricing of carbon through tax, trading and regulation

- support for innovation and the deployment of low-carbon technologies
- removal of barriers to energy efficiency
- improvements in information and education on climate change to persuade individuals to help combat global warming.

## Unions and employers must work together

**1.10** Saving energy at work is important, because more CO<sub>2</sub> emissions are generated in the workplace than in the home (particularly as we get greener in our home lives). Rising energy costs also affect an organisation's bottom line.

**1.11** Workplaces consume vast amounts of resources and generate a large and complex range of waste materials. As such, they are a key place to start any shift to environmental management. Workplaces emit 60 million tonnes of carbon a year – around half our total emissions – so we urgently need to change the way we work.

**1.12** By working in partnership, trade unions, workers and employers can make significant inroads towards reducing our carbon footprint.

**1.13** With 6.7 million members in the UK, unions have an important role to play in raising awareness. The workplace is a natural forum for bringing people together around a common purpose. Unions are also in a unique position to inform, advise and encourage their members to consider environmental management initiatives at work, home and in the community.

**1.14** Climate change is also about employment, jobs and opportunities for millions of workers. Those who are affected most by our overheating planet are ordinary working people and the poor in the developing world.

**1.15** International action is important – but developing countries like China will only agree to reduce their emissions if developed countries, like the UK, also take strong action now to reduce our own emissions. Individuals, unions, communities, employers and governments all

have a role. Improving energy efficiency is key – most governments agree it is the quickest way to reduce CO<sub>2</sub> emissions while we work to reduce our dependency on fossil fuels.

**1.16** Some examples of action taking place in Prospect workplaces include:

- Manufacturing shops at BAE Systems have light sensors that switch off when there is sufficient natural light available.
- The Biotechnology and Biological Sciences Research Council is looking to supply part of its energy needs by renewable sources. It has set up a car-sharing scheme, video conferencing and bought two electric vans for site use.
- Magnox Electric reduced waste going to landfill by 60% through recycling.
- The Met Office uses rainwater to flush the toilets.
- The Natural Environment Research Council uses dual fuel and hybrid cars in the transport pool.
- Reps at the National Library of Scotland carried out a staff survey and helped to organise a 'green' day as part of Learning at Work week.
- The British Museum launched its TUC green workplaces project with a green fair in December 2006. Around 300 people – a third of the museum's workforce – attended the event. Various organisations had stalls, and there were plenty of free gifts. The event also identified staff willing to be green workplace reps.
- In the Department for the Environment, Food and Rural Affairs, unions are raising awareness among staff by taking part in fairs and exhibitions. They have also run pilot workshops for union members looking at energy use – what we use, how we use it, what ways work best to reduce it, etc.

## Training

**1.17** Prospect has organised several national and branch-based courses on greening the workplace. If your branch or section would like to run a tailored course, please contact sue.ferns@prospect.org.uk

**I.18** The TUC also runs courses for union members interested in the role of environmental rep, details at [www.unionlearn.org.uk](http://www.unionlearn.org.uk). The GreenWorkplaces project has helped develop tailored, carbon-cutting courses for particular workplaces, using the Carbon Trust's 'Five steps to carbon management' and the Trust's auditing tools.

## TUSDAC

**I.19** In 2007 the Trade Union Sustainable Development Advisory Committee (TUSDAC) is co-chaired by Prospect general secretary Paul Noon and Hilary Benn, Secretary of State for the environment, food and rural affairs. It meets regularly to progress environmental matters for trade unions. Recent achievements include:

- helping unions develop training materials on environmental action for reps in the workplace
- securing funding from the Carbon Trust for a TUC-based worker to develop capacity within unions for joint pilots on energy saving in the workplace
- publishing an in-depth TUC report, *Greening the Workplace*, in 2005
- has its own website containing useful advice and contacts for trade unions, at [www.sustainableworkplace.co.uk](http://www.sustainableworkplace.co.uk)

## Who are the experts?

**I.20 Stern report:** In July 2005 The Chancellor asked Sir Nick Stern to lead a major review of the economics of climate change, to understand more comprehensively the nature of the economic challenges and how they can be met, in the UK and globally. [www.hm-treasury.gov.uk/index.cfm](http://www.hm-treasury.gov.uk/index.cfm), search for 'Stern report'

**The Royal Society**, the national academy of science of the UK and the Commonwealth, has a guide to facts and fictions about climate change: [www.royalsoc.ac.uk/page.asp?id=2986](http://www.royalsoc.ac.uk/page.asp?id=2986)

**Intergovernmental Panel on Climate Change:** [www.ipcc.ch](http://www.ipcc.ch)

**UK Climate Impacts Programme:** [www.ukcip.org.uk](http://www.ukcip.org.uk)

**United Nations Environment Programme:** [www.unep.org](http://www.unep.org)

# 2

## Ten steps to a greener workplace

### THE TEN STEPS

1	Secure management commitment
2	Get staff involved
3	Elect/appoint a committee including union/staff reps, building management, purchasing officer, senior managers with access to all heads of department
4	Negotiate a framework agreement
5	Elect environmental reps
6	Do an environmental audit, discuss results with staff
7	Draw up an action plan
8	Devote adequate time and resources
9	Monitor your progress
10	Communicate your results

### Step 1 – Management commitment

**2.1** Commitment from the top and the grassroots is important because people at all levels are more likely to act if they understand the financial and local environmental impact of measures, and they may all have important information about causes and impacts. It's important to have both a senior champion and an operational manager with clear responsibility to make this information transparent.

**2.2** Often, the first step in an environmental improvement programme is to convince senior managers of the financial and wider benefits and overcome any barriers that they may have. One of the best ways to do this is to identify obvious areas of waste reduction and environmental improvement and where to make immediate savings through no-cost or low-cost measures.

**2.3** The role of the senior manager is crucial

for all the other steps in the programme.

For example, quantifying and costing wastes involves planning and organising colleagues to help collect data. This means that both responsibility and authority need to be provided by senior management to get full co-operation and support from other members of staff.

**2.4** Organisations need to decide which improvement options are a priority and which are feasible in terms of timescales, any investment or capital costs – and the payback period.

**2.5** Senior management input is also crucial for deciding priorities, setting targets for reductions and recording performance. To maintain momentum for the programme at all levels within the company, senior management endorsement is an essential component of any reporting and feedback.

### Step 2 – Staff involvement

**2.6** Environmental initiatives won't work unless all staff – from the chief executive to the cleaner – buy into them. Awareness-raising events such as open days are great ways of getting people to think about the environment at home and at work. You could invite local campaign groups to come in and give talks or provide advice and materials. At ScottishPower, reps have shown Al Gore's film about climate change, 'An Inconvenient Truth' during work hours. Reps at the Department for the Environment, Food and Rural Affairs and the British Library have organised green days.

**2.7** If organisations achieve cost savings, a proportion could be reserved for further green investment, or for rewarding staff as a whole. Increasingly, many organisations are looking at what they do, for example a 'full life-cycle'

analysis of their products, as well as how they do it, and this is an area where the workforce could have an important voice.

## Step 3 – Elect/appoint a committee

**2.8** Who is responsible for environmental policy and practice? Often there is a committee or working party combining (for example) facilities/energy environment manager, corporate social responsibility/public relations, and possibly human resources (especially if they are also looking at travel). All the current TUC GreenWorkplaces projects have established a local committee or working group with union involvement, or are working towards that.

## Step 4 – Negotiate a framework agreement

**2.9** Does your organisation currently have written environmental policies or environmental management systems, eg EMAS, ISO14001, Carbon Trust carbon management scheme? (including involvement in emissions trading schemes)?

**2.10** An overarching agreement could cover:

- a commitment to employee involvement, environmental reps, facilities and training
- the issues to be covered
- mutual responsibilities and procedures for dealing with issues
- clear objectives and monitoring policies; and
- links with health and safety and other policies and structures.

**2.11** Framework agreement, model principles:

- **Sustainable development**
- **Pollution**
  - monitor levels of pollution
  - use available resources and legislation to reduce air, land, water and noise pollution.
- **Energy and water**
  - increase your energy efficiency
  - work with local and national organisations to develop a comprehensive energy strategy, based on conserving

resources and reducing carbon emissions

- monitor how much water you use and cut your consumption
- encourage others to conserve energy and water.

### ■ Resource management

- reduce, reuse and recycle goods and materials in your work
- cut the use of, and where possible stop using, products that damage the environment in their production, use or disposal
- encourage local people to reduce, reuse and recycle goods and materials.

### ■ Land use planning

#### ■ Transport

- look at your use of transport at work and reduce vehicle use and pollution by developing a travel plan
- work with local and national partners to encourage and support a mixed transport strategy, with particular emphasis on cutting car use and promoting public transport, cycling and walking.

#### ■ Accidents and planning ahead

- use risk management to cut the risk of environmental accidents and put plans in place to deal with them
- look at the environmental impacts of new policies, activities and practices before they are agreed.

#### ■ Service delivery

- include a sustainability assessment in all Best Value service reviews
- aim to improve your environmental performance when you deliver your services
- encourage your contractors to have the same environmental standards as yourselves.

## Step 5 – Environmental reps

**2.12** Union environmental reps can act as a conduit between management and members/staff, feeding concerns, suggestions and responses in both directions, and working with the workforce and management to develop best environmental practice, particularly in estates



and human resource management. They can help review or shape environmental policies and initiatives, and ensure that such policies are properly understood, fit for purpose, and can be put into practical effect at each workplace (see Chapter 3).

## Step 6 – Do an audit

**2.13** Has the organisation had a Carbon Trust or other environmental audit? Has it implemented the recommendations?

**2.14** To be able to improve performance you need to know where you're starting from. There are many ways of auditing and measuring environmental performance. An audit can be as basic as members of the committee walking through the office, observing what is happening and talking to other staff.

- Check to see if equipment is left switched on when it is not being used for long periods of time or after staff have gone home.
- Check what types of waste are being put into rubbish bins, and how often paper is used on only one side.
- Find out what fuel is used in company cars and how many business miles are made by what form of transport.
- Survey how many people walk to work, travel by bus or would consider cycling to work.
- Find out about current purchasing policies.
- Talk to other staff about their ideas for greening the office, such as saving energy or reducing waste.

**2.15** Use the audit to look at each aspect of your office. Determine how your activities affect the environment, assess the significance of the impacts and look at options to make low-cost and no-cost improvements. Make sure the results are shared and discussed with staff.

**2.16** Your committee may decide to use outside consultants for a more formal audit. They will also look at aspects such as raw materials used, products, energy, waste, transport and the general work environment.

## Step 7 – Draw up an action plan

**2.17** A carbon or environmental management plan should include: a business case for change; calculation of payback times for investment; a plan for delivery; a way of prioritising projects, communicating and monitoring impacts; and a commitment to work with staff and union(s).

## Step 8 – Devote adequate time and resources

**2.18** The Natural Environment Research Council set up a 'Green Fund' which represents 0.01% of NERC's budget. Successful bids include: video conferencing equipment, solar panels, bike shed and a composter.

## Step 9 – Monitor your progress

**2.19** Who has responsibility for monitoring progress overall, and at operational level – an individual, a committee?

## Step 10 – Communication

**2.20** Workers want facts and targets that they can understand, that focus on a particular area, can be updated, and are personally meaningful and tangible. For example, one GreenWorks project explained that the workplace produced ten times more CO<sub>2</sub> than all their homes and personal lives put together, and set a target to reduce this by 10%. Another halved night-time electricity consumption over 18 months by publicising figures on night-time electricity consumption in their building.

**2.21** Communication needs to be two-way, through reps, meetings, events, committees, surveys, newsletters (printed and electronic), noticeboards and posters.

# 3

## Environmental reps

**3.1** Surveys consistently indicate widespread enthusiasm among trade union reps for taking action on the environment. In 2007, a poll for the Carbon Trust revealed that more than two thirds (67%) of workers were keen to help their organisation cut carbon emissions and wanted to know more about how to do it. However, less than a fifth of workers (18%) were happy with what their company was doing to cut emissions.

**3.2** Union environmental reps can act as a conduit between management and members/staff, feeding concerns, suggestions and responses in both directions, and working with the workforce and management to develop best environmental practice, particularly in estates and human resource management. They can help review or shape environmental policies and initiatives, and ensure that such policies are properly understood, fit for purpose, and can be put into practical effect at each workplace.

**3.3** Those involved in the TUC/Carbon Trust GreenWorkplaces project have included shop stewards, health and safety reps, and those new to union activism. It is important to organise facility time for training, periodic workplace inspections (both regular and in response to specific concerns), meetings, paperwork and communication.

### Rights for reps

**3.4** National and international trade unions are campaigning for trade union environmental reps to be given the same rights at work as other trade union reps. This would give environmental reps and members a voice at work on energy efficiency, recycling, green travel plans and sourcing renewable energy. Cost savings could be used to create better jobs and greener ways to work.

**3.5** Union reps have a proven capacity to

effect progressive change at work, for example in areas like health and safety and learning (1). Union environment reps are an excellent way to engage workers in the debates around climate change.

**3.6** Members of Parliament backed the call and 76 of them signed an early day motion (1125) which says trade unions and their 6.7 million members have a vital role to play in working for best environmental practice in the workplace.

### Review of facilities and facility time

**3.7** In June 2006 the government launched a review of the facilities and facility time provided to workplace reps. Unions pressed the government to use the review to respond positively to the campaign for trade union environmental reps to be given the same rights at work as other trade union reps. Disappointingly, the government said it was "premature to consider providing distinct time off rights to environmental and equality reps". However it did ask Acas to revise and update its Code of Practice on time off for trade union duties and activities.

### What unions want

**3.8** The TUC says there is a clear case for statutory provisions to give environmental reps the right to paid time off to carry out their duties and to attend trade union training. Its suggestions include:

- The UK Advisory, Conciliation and Arbitration Service's code of practice on trade union duties and activities should be amended to recognise the role of unions in formal consultations with the employer on sustainable production and consumption.

- Environmental reps should be able to participate in climate change education, training and employee engagement activities consistent with Article 6 of the United Nations framework convention on climate change.
- Reps should receive a minimum of ten days of accredited training in the 12 months immediately following their election/ appointment.
- They should have the right to reasonable paid time off to carry out their functions and to get information from their employer to assist with these duties.
- Employers should be required to grant facilities such as room space, phone and computer use to enable environment reps to fulfil these duties.

## Defra reps make the case

**3.9** In April 2007, David Miliband, then Secretary of State for Environment, Food and Rural Affairs, asked Prospect reps in the department to submit proposals for union environmental reps within Defra and its associated agencies and non-departmental public bodies.

**3.10** Here is an outline of the case they put to the minister. You can use it as the basis for an agreement on union environmental reps (UERs) in your workplace.

### Aims

- to provide an effective and responsive interface between management and staff at all levels in core Defra, its agencies and associated non-departmental public bodies
  - to challenge, monitor and advance environmental considerations and solutions across the departmental estate and in respect of employment practices and policies
  - to communicate and promote sustainable and best environmental practice among union members and staff generally, and to encourage and assist their engagement
  - to help establish benchmarks and best practice in respect of the link between industrial relations and environmental issues
- that can be applied within the department and across the wider civil and public service.

### Role

UERs would:

- be ideally placed to use the standing and structures of trade unions to directly influence and develop the thinking and actions of their members and others in respect of environmental matters
- be appointed from within the membership of recognised trade unions. They would work with and through existing trade union structures. The number of representatives at each location would depend on the size and geographical spread of their respective constituencies
- be the link between management and staff to help ensure that environmental policies and initiatives are put into practical effect at each workplace and that such policies and initiatives are properly understood and fit for purpose
- be invited by management at the appropriate level to comment on proposed sustainability action plans and policies. They would be expected to reflect and feed into the views of their respective union executive committees and memberships. They would meet periodically with management to discuss progress in developing and implementing relevant policies. They would also work with their union colleagues to establish appropriate networking arrangements for reps across the department, its agencies and NDPBs.
- share information and best practice examples with staff via appropriate methods of communication. They would also feed into relevant consultation and negotiation at local, agency and departmental level via the appropriate trade union structures
- be expected to carry out periodic inspections of the workplace, similar to those carried out by health and safety representatives but with a significantly different focus. Such inspections would take place both as part of a regular monitoring programme and in response to specific concerns, complaints or initiatives.

### Resources required

- UERs would require paid time off to attend relevant training, including initial training on taking up post, occasional refresher training to maintain their expertise, and specific training in response to newly identified concerns or key developments in environmental thinking.
- UERs would also require a reasonable amount of time to carry out their functions, eg workplace inspections, meetings with management and colleagues as necessary, dealing with relevant paperwork and communication. The physical resources associated with communicating with members should already be available via existing union structures and facilities.

(1) [www.hse.gov.uk/research/index.htm](http://www.hse.gov.uk/research/index.htm)  
click on 'find a research report'  
search (exact phrase) for 'trade union  
representatives'

# 4

## Environmental management systems

**4.1** An Environmental Management System is a comprehensive management tool for assessing, monitoring and controlling the environmental pollution produced by a company or organisation.

**4.2** It is more thorough than ad-hoc approaches such as recycling paper, using low energy light bulbs and 'switch off' campaigns, because it puts systems in place to ensure the organisation has a genuine and positive impact on the environment.

**4.3** A good system will incorporate an environmental policy, recycling of materials, waste minimisation and energy-saving programmes. If it is monitored it will not be just the token gesture favoured by some companies who produce regular environmental reports or set up environmental 'stakeholder' groups; these can be little more than publicity stunts to promote a brand name. Environmental credentials are now selling points and enhance a company's reputation, but a critical approach is needed: some initiatives simply pay lip service to the green agenda.

**4.4** Some organisations choose to develop their own DIY systems or self-declare their conformity with environmental management standards. However, more credibility can be gained from external auditing by independent third parties who have been accredited to certify companies to given standards (see below).

**4.5** In the UK, you can achieve EMS certification under three accredited standards or schemes:

- ISO 14001, the international EMS standard
- the EU Eco-Management and Audit Scheme (EMAS)
- BS 8555, a British standard for small and medium-sized enterprises.

**4.6** But registration is in itself only a badge – the real evidence of an organisation's commitment is in the positive outcome of its activities.

**4.7** ISO 14001 is an international environmental standard that details how an environmental management system should be defined and implemented. A baseline requirement of the standard is that an organisation must provide for compliance with mandatory environmental legislation. The standard ensures that an organisation which chooses to adopt ISO 14001 understands how its operations or activities impact on the environment.

**4.8** The EU Eco-Management and Audit Scheme (EMAS) is a voluntary initiative first introduced in 1995 which incorporates ISO 14001 as the management system element. EMAS builds on ISO 14001 and goes further than the international standard by requiring organisations to produce an independently validated public statement about their performance, and make a commitment to continuous improvement beyond minimum legal compliance.

**4.9** BS 8555 is a new British standard aimed at small to medium-sized enterprises. The standard splits the implementation process for ISO 14001 or EMAS into six separate stages.

### Comparisons

**4.10** The London Hazards Centre says EMAS has several features which make it superior to ISO 14001. In addition to external validation, EMAS requires:

- an audit, review, and annual public statement. ISO 14001 merely recommends such action
- that companies move towards levels

of performance compatible with the "economically viable application of best available technology" (EVABAT); ISO 14001 is less strict

- communication with "public authorities, the public and contractors". ISO 14001 does not require this.

#### 4.11 Seven steps to EMAS:

To gain EMAS accreditation companies must:

- 1 develop an environmental policy  
– committing the company to compliance with existing legislation and to continuous improvement of its environmental performance
- 2 conduct an environmental review – to identify all the environmental impacts of a site
- 3 set up an environmental programme – to put policy into practice
- 4 create a management system – to organise and document the programme, and make clear who does what within the organisation
- 5 develop an audit cycle – to check the programme's progress at regular intervals
- 6 produce an annual public statement that outlines clearly and concisely how the company has met its stated objectives
- 7 subject the system to external validation  
– an accredited verifier, independent of the site auditor, must validate both the management system and the statement.

## Communications

**4.12** A new international standard, ISO 14063, officially entitled *Environmental Management – Environmental Communication – Guidelines and Examples*, aims to provide businesses of all sizes with guidance on the general principles, policy, strategy and activities relating to both internal and external environmental communication.

**4.13** It is one of the latest additions to the ISO 14000 series of environmental management standards and aims to help organisations better communicate their environmental performance.

**4.14** The new standard comes at a time when organisations are facing mounting pressure

to be more transparent about environmental issues. Key provisions of the Companies Act 2006, including the requirement for all but the smallest firms to produce a business review as part of the director's report, came into force on October 1, 2007. The expanded business review must contain information about environmental matters, including the impact of the company's business on the environment.

#### 4.15 For more information:

**NetRegs** provides free environmental guidance for small businesses in the UK.  
[www.netregs.gov.uk/netregs/](http://www.netregs.gov.uk/netregs/)

[www.emas.org.uk](http://www.emas.org.uk)

**The Institute of Environmental Management and Assessment** promotes best practice standards in environmental management, auditing and assessment.  
[www.iema.net/index.php](http://www.iema.net/index.php)

<http://europa.eu.int/comm/environment/emas>

[www.bsi-global.com](http://www.bsi-global.com)

# 5

## Reduce, reuse, recycle

**5.1** Recycling is often the first thing colleagues think of when asked about how green their workplace is. A 'reduce, re-use and recycle' approach to products at work will use fewer scarce resources and less energy (and therefore carbon) than new products made from virgin materials.

**5.2** Most UK waste still ends up in landfill sites. Apart from concerns about toxins entering the soil and water, as waste rots in landfill it creates methane, which contributes to global warming even more powerfully than CO<sub>2</sub>. Envirowise estimates that waste typically costs companies 4.5% of their turnover.

**5.3** In 2002-3, around 68 million tonnes of industrial and commercial waste was produced in England. Industrial waste was 38 million tonnes and commercial waste was 30 million tonnes. Overall 44% of commercial and industrial waste was sent to landfill and 45% recycled.

**5.4** In Scotland, businesses (excluding the construction and demolition sector) produced an estimated 9 million tonnes of waste in 2004, of which 6.4 million tonnes (71%) arose from commerce and 2.6 million tonnes (29%) from industry. Construction waste is believed to account for a further seven million tonnes annually.

**5.5** Organisations should continually seek ways to minimise the use of resources including energy, paper, raw materials, packaging and disposable items, particularly when new systems, practices or locations are introduced.

### Water

**5.6** The UK has less available water per person than most other European countries. London is drier than Istanbul, and the south-east of

England has less water available per person than the Sudan and Syria.

**5.7** Because Scotland relies predominantly on surface water abstraction it is susceptible to short-term variability in climate.

**5.8** Each person in the UK currently uses about 150 litres of water a day. But if you include the amount of embedded water (water used to produce food and non-food products) within products our water consumption is 3,400 litres every day! This consumption level is not sustainable in the long term.

**5.9** Also, water uses a lot of 'embodied' energy to be treated, pumped, delivered, and perhaps heated.

**5.10** If we do not take action now, climate change, population shifts and behaviour mean the UK will face increased water stress in the future.

**5.11** The Environment Agency's publication 'Waterwise' outlines how to develop a water management plan. It says that management and employee support, and promoting successes, are just as important as gathering information and target setting. Its six simple steps to long-lasting success are:

- obtain management and staff support
- find out what the true cost of water is to your organisation
- identify your water use
- reassess your water use
- identify and evaluate your water efficiency measures and write a plan
- put your plan into action and report your results.

**Bottled water** 1

**5.12** 2,275 million litres of bottled water were sold in the UK in 2006 and were worth

almost £1,700m in retail value. At an average of 95p per litre, it costs as much as petrol. The average cost of tap water in the UK is £1 per 10,000 litres.

**5.13** The energy cost of producing a billion plastic bottles from by-products of crude oil, transporting the water over hundreds or thousands of miles and then disposing of the containers in landfill sites or incinerators make bottled water one of Britain's most wasteful luxuries.

**5.14** Organisations should ensure that all employees have access to clean drinking water, without having to rely on carbon-intensive plastic or glass bottles.

## Purchasing

**5.15** Even better than recycling is reducing the use of resources (including energy) in the first place, by having a well-thought through purchasing strategy.

**5.16** Start by ensuring that your organisation's supply chain is open and transparent about its environmental and social impact. For example, the organisation could commit to: buying recycled and/or recyclable paper and other products where possible, ensuring new printers and copiers can (and are set to) print on both sides, or setting an ambitious 'zero waste' target.

**5.17** Purchasing/replacement policies for equipment and IT should prioritise ease of use, safety and running costs/energy efficiency (eg A++, Energystar), as well as an ethical supply chain.

**5.18** Properly consulting the workforce before any major purchasing decisions such as changes to layout, equipment or systems, will minimise the waste that can be generated from ill-thought through changes that then have to be undone.

**5.19** Ensure that there is a commitment to buy equipment and goods only when necessary. Following consultation with staff, ensure

purchases meet the latest energy standards, are sourced from suppliers with good employment and environmental standards, and are easy and safe to use.

## Fairtrade

**5.20** The ethical Fairtrade movement works toward reducing poverty and exploitation through world trade. Fair and ethical trading means ensuring that:

- workers are paid a living wage
- working conditions are safe and secure
- there is no forced labour
- there is a right to collective bargaining
- producers get a fair price for the goods they produce
- there are opportunities for learning, development and investment
- wherever possible goods are produced locally so as to have minimal impacts on the environment.

**5.21** You could promote fairtrade in your workplace by organising an event for the annual Fairtrade Fortnight (25 February – 9 March 2008); checking whether your employer purchases Fairtrade food and drinks; and encouraging your organisation to adopt an ethical purchasing policy.

[www.fairtradeatwork.org.uk/index.html](http://www.fairtradeatwork.org.uk/index.html)

## Travel plans

**5.22** Unions should negotiate a travel plan that promotes low-carbon transport and reduces unnecessary travel.

**5.23** A green transport plan should aim to:

- reduce reliance on the car by reducing the length and number of motorised journeys, in particular, those journeys carried out in single occupancy vehicles, eg through a car-sharing plan
- promote the use of alternative means of travel which are more sustainable and environmentally friendly; eg interest-free loans for bus and rail season tickets, information on local bus and train services; promoting walking and cycling, with



changing and shower facilities at work, interest-free loans to purchase bikes or signing up to the government's cycle to work scheme

- reduce emissions and encourage the purchase of energy-efficient vehicles
- encourage work practices which reduce the need to travel, such as video-conferencing.

### Targets

**5.24** Establish targets for your office and monitor their success over a set period. For example:

- review and alter accordingly existing travel patterns throughout the organisation
- a 15-20% reduction in car-borne commuting in the initial year of the plan, thereby increasing the proportion of employee commuter trips by modes of transport other than single-occupancy cars
- a zero short-haul flight policy within three months
- no increase in the number of parking permits/spaces for employees, in the future an annual reduction in permits/parking spaces.

### Keys to success

**5.25** There are several keys to the successful development and implementation of a green transport plan, including:

**Commitment from management.** Senior management should lead by example and provide the necessary resources to develop and implement the plan.

**Communications.** Explain the reason for adopting a plan, promote the benefits available to staff and provide plenty of information about the alternatives.

**Build consensus.** Listen to concerns, allow time for staff to get used to change, monitor changes. Try not to do everything at once.

### More information

**5.26** The Department for Transport has a travel plan resources pack for employers with information and help on all stages of the process.

[www.dft.gov.uk/pgr/sustainable/travelplans/work/resourcepackemployers/](http://www.dft.gov.uk/pgr/sustainable/travelplans/work/resourcepackemployers/)

DfT has also produced a document which outlines lessons from UK case studies.  
[www.dft.gov.uk/pgr/sustainable/travelplans/work/publications/](http://www.dft.gov.uk/pgr/sustainable/travelplans/work/publications/)

## Workplace checklist

ENERGY	YES	NO
Has your organisation signed up to the Carbon Trust's carbon management programme, which helps large public and private sector organisations to reduce energy use.	<input type="checkbox"/>	<input type="checkbox"/>
If you are in a large workplace, do you have combined heat and power (CHP) generators?	<input type="checkbox"/>	<input type="checkbox"/>
HEATING AND LIGHTING	YES	NO
Is your air conditioning programmed to come on only when the temperature reaches 24°C?	<input type="checkbox"/>	<input type="checkbox"/>
Does your heating system switch off when it gets above 19°C?	<input type="checkbox"/>	<input type="checkbox"/>
Are the thermostats in the right places and set to the right temperature?	<input type="checkbox"/>	<input type="checkbox"/>
Is your cooling equipment regularly maintained?	<input type="checkbox"/>	<input type="checkbox"/>
Do you have doors or windows open when the heating or air conditioning is on?	<input type="checkbox"/>	<input type="checkbox"/>
Is your building properly insulated and draught-proofed?	<input type="checkbox"/>	<input type="checkbox"/>
Can staff individually control heating, cooling and lighting in their workspace?	<input type="checkbox"/>	<input type="checkbox"/>
Are all bulbs low energy? (compact or modern fluorescent)	<input type="checkbox"/>	<input type="checkbox"/>
Is lighting on in areas, or at times of day, when there's enough daylight? Why?	<input type="checkbox"/>	<input type="checkbox"/>
Do you have individual desk lamps?	<input type="checkbox"/>	<input type="checkbox"/>
Do all staff turn off lights whenever and wherever they're not needed?	<input type="checkbox"/>	<input type="checkbox"/>
Are motion sensor lights used in low use areas?	<input type="checkbox"/>	<input type="checkbox"/>
Is temperature an issue, either generally or at particular times of day?	<input type="checkbox"/>	<input type="checkbox"/>
Is heating or cooling left on in areas, or at times of year/day, when it doesn't need to be - or simultaneously?	<input type="checkbox"/>	<input type="checkbox"/>
Is heating or ventilation blocked by furniture/ equipment?	<input type="checkbox"/>	<input type="checkbox"/>
Does your workplace make good use of natural daylight?	<input type="checkbox"/>	<input type="checkbox"/>
EQUIPMENT	YES	NO
Is equipment regularly serviced and clearly labelled?	<input type="checkbox"/>	<input type="checkbox"/>
Is any equipment left on when not in use? Why?	<input type="checkbox"/>	<input type="checkbox"/>
Are there automatic power-reducing features, eg motion sensor lights, timers on water coolers, IT power downs?	<input type="checkbox"/>	<input type="checkbox"/>
Are all computer monitors flat screen?	<input type="checkbox"/>	<input type="checkbox"/>
Are the energy-saving features on your office equipment activated, eg PCs, monitors, faxes and printers?	<input type="checkbox"/>	<input type="checkbox"/>
Is equipment labelled with the amount of energy it uses?	<input type="checkbox"/>	<input type="checkbox"/>

<b>EQUIPMENT</b> <i>CONTINUED</i>	YES	NO
Does equipment have an energy monitor?	<input type="checkbox"/>	<input type="checkbox"/>
Is new equipment installed in a way that makes it easy to use its eco-features?	<input type="checkbox"/>	<input type="checkbox"/>
Are staff fully trained in its use?	<input type="checkbox"/>	<input type="checkbox"/>
Do PCs automatically power down after working hours?	<input type="checkbox"/>	<input type="checkbox"/>
Do you have seven-day timers (which ensure appliances are not left on overnight and at weekends) on shared equipment, eg printers, vending machines and water coolers?	<input type="checkbox"/>	<input type="checkbox"/>
<b>RECYCLING</b>	YES	NO
Does your workplace recycle everything possible, eg:		
paper	<input type="checkbox"/>	<input type="checkbox"/>
plastic	<input type="checkbox"/>	<input type="checkbox"/>
cans	<input type="checkbox"/>	<input type="checkbox"/>
glass	<input type="checkbox"/>	<input type="checkbox"/>
all other major waste streams	<input type="checkbox"/>	<input type="checkbox"/>
mobile phones	<input type="checkbox"/>	<input type="checkbox"/>
IT equipment	<input type="checkbox"/>	<input type="checkbox"/>
furniture	<input type="checkbox"/>	<input type="checkbox"/>
Is everything bought recycled where possible?	<input type="checkbox"/>	<input type="checkbox"/>
<b>PAPER</b>	YES	NO
Does your organisation use unbleached, off-white 100% recycled paper?	<input type="checkbox"/>	<input type="checkbox"/>
<b>WATER</b>	YES	NO
Do all workers have access to clean drinking water, without having to rely on carbon-intensive plastic or glass bottles?	<input type="checkbox"/>	<input type="checkbox"/>
Are water-saving measures in place?	<input type="checkbox"/>	<input type="checkbox"/>

# 6

## Savings and successes

**6.1** The TUC reduced its landfill waste by 40% in 18 months through raising awareness and negotiating for improved facilities.

**6.2** A simple seven-day timer on shared equipment, such as printers, vending machines and water coolers, will ensure that they're not left on overnight or at weekends. These are relatively cheap to buy and can save up to 70% on energy costs.

**6.3** Natural daylight costs nothing and reduces your lighting costs by up to 19%.

**6.4** The Natural Environment Research Council's Swindon headquarters bought a composter and reduced waste sent off site by 30%.

**6.5** The British Geological Survey's Keyworth site sent 41 tonnes of cardboard/paper, 32 tonnes of scrap metal, 15 tonnes of wood, 4.4 tonnes of glass and 8.6 tonnes of obsolete IT equipment to be recycled in 2006-06.

**6.6** Keyworth has reduced its waste disposal costs by £10,000 a year since 1998 just by recycling paper and cardboard.

**6.7** BGS only purchases paper that is 100% recycled or produced from sustainable forests. In 2005, Keyworth reduced the amount of paper used by 33%.

**6.8** Energy-saving lightbulbs use 75% less electricity than standard light bulbs, provide the same amount of light, and last up to 10 times longer.

**6.9** By turning down your heating by just 1°C you can save up to 10% on your fuel bills every year.

**6.10** Air conditioning can double an office's energy costs.

**6.11** The Met Office headquarters in Exeter was built to be as environmentally sound as possible. Measures include: collecting rain water from the site, treating it with UV light and then reusing it to flush the toilets. During 2006-07 the Met Office reduced water consumption in Exeter by 22% on 2005-06.

**6.12** The Defence Science and Technology Laboratory has been awarded grants totalling over £16,500 for schemes on three of its sites, which are aimed at encouraging staff to use their cars less.

**6.13** Portsmouth City Council gave £5,000 towards secure bicycle parking and new car park spaces for car sharers at the Portsdown West site. Wiltshire County Council provided £10,000 which will be put into travel schemes at DSTL Porton Down. Groundwork Solent is partly funding a scheme at Alverstoke to improve cycling skills for staff. All the funds will be matched by DSTL and staff at the three sites should see the green projects completed by March 2008.

# 7

## Obstacles and how to overcome them

**7.1** The UK public remains sceptical about how much impact climate change will have on the country and believes the problem is being overstated by politicians and scientists, according to a MORI poll conducted in June 2007.

**7.2** The poll showed that while most Britons recognise the problem of climate change and that humans have played a role in causing it, many are not convinced that the issue is as bad as scientists and politicians claim. More than half (56%) believe scientists themselves are still questioning climate change when in reality there is virtual scientific consensus.

**7.3** Although 45% of those questioned said climate change was the greatest threat to mankind, terrorism, crime, graffiti and even dog mess were all higher on the list of local concerns.

**7.4** Climate change is also bottom of the priority list for Britain's largest companies, according to a survey of business leaders (1). More than half of the companies surveyed by YouGov in April 2007 said there were more urgent issues, such as brand awareness, marketing strategies and corporate social responsibility. Just 14% had a clear strategy for tackling climate change. One third of the senior corporate executives saw policy initiatives as more about managing company reputation than making a difference to global warming.

**7.5** Other obstacles to green workplaces and suggested solutions include:

### Scepticism

"There is no evidence that carbon dioxide is involved in global warming. The rise in global temperatures that we have seen over the past few decades is due to changes in the sun's energy output and to changes in the Earth's

magnetic field." UK weather forecaster Piers Corbyn

**Solution:** "If you look at the computer models we created years ago, only those that take account of increases in carbon dioxide emissions have provided forecasts that have been accurate. The importance of carbon emissions is accepted by just about every scientist today, except for this handful of deniers. So let's see their figures and let us judge them when we have analysed their data." Alan Thorpe, chief executive of the Natural Environment Research Council

### Slow management response

**Solution:** Employers need to take greening the workplace seriously, but while we wait for them to catch up you can all keep doing your bit. Even small steps can make a huge impact when everyone gets involved.

### Lack of money

**Solution:** Typically, waste minimisation will save the company money - up to 1% of business turnover, either as extra profit or in reduced operating costs. By implementing no-cost or low-cost measures, your company could also reduce water, effluent costs and energy bills by 20% or more.

### It's not my problem

**Solution:** We are all part of the problem and we all need to be part of the solution - if not for our sakes, then for the sake of our children and grandchildren.

### The organisation or company is too small to make a difference

**Solution:** The Building Research Establishment has produced an office toolkit for small offices with no dedicated environmental personnel.

1

### Weak chief executive/board support

**Solution:** Appeal to their pockets - look for case

studies showing the business benefits of good practice. Point out that being environmentally friendly will attract more customers.

**Lack of resources and time**

**Solution:** Target a few areas where immediate savings could be made, such as raw materials use and energy, water and solid waste reduction, rather than tackle all potential sources of waste reduction at once.

**Environmental measures are a low priority**

**Solution:** Point out that they will become a requirement as more legislation comes into force.

**Staff working patterns**

**Solution:** Time the start of a waste reduction programme to avoid any planned changes in processes, organisation or staff working patterns.

(1) Climate Change Business Leaders Survey, undertaken by YouGov on behalf of KPMG

# 8

## Information and resources

### At work

- [www.sustainableworkplace.co.uk](http://www.sustainableworkplace.co.uk)
- [www.defra.gov.uk/environment/tusdac/index.htm](http://www.defra.gov.uk/environment/tusdac/index.htm) – TUSDAC is the main forum for consultation between government and trade unions.
- [www.globalactionplan.org.uk](http://www.globalactionplan.org.uk) – An environmental charity that helps people to make positive changes at home, at work, at school and in the wider community.

### Campaign groups

- [www.icount.org.uk/](http://www.icount.org.uk/) – Stop climate chaos coalition.
- [www.greenpeace.org.uk](http://www.greenpeace.org.uk) – Greenpeace.
- [www.green-office.org.uk/](http://www.green-office.org.uk/) – Friends of the Earth, Scotland.
- [www.wwf.org.uk/core/](http://www.wwf.org.uk/core/) – World Wildlife Fund.

### Climate change information

- [www.environment-agency.gov.uk/yourenv/639312/](http://www.environment-agency.gov.uk/yourenv/639312/)
- [www.dft.gov.uk/ActOnCO2/](http://www.dft.gov.uk/ActOnCO2/)
- [www.metoffice.gov.uk/research/hadleycentre/](http://www.metoffice.gov.uk/research/hadleycentre/)
- [www.unep.org/](http://www.unep.org/) – United Nations Environment Programme.
- [www.tyndall.ac.uk/](http://www.tyndall.ac.uk/) – Tyndall Centre for Climate Change Research.
- [www.ipcc.ch/](http://www.ipcc.ch/) – Intergovernmental Panel on Climate Change.

### Education/training

- [www.envirowise.gov.uk/GG488A](http://www.envirowise.gov.uk/GG488A) – All the materials necessary to run a training programme to give trade union members the confidence and tools to enable them to play an active and informed part in promoting environmentalism in the workplace, the union and beyond.

- [www.greenfacts.org/index.htm](http://www.greenfacts.org/index.htm) – Mission is to bring complex scientific reports on health and the environment to the reach of non-specialists.
- [www.epaw.co.uk](http://www.epaw.co.uk) – Environmental and sustainable issues.

### Energy

- [www.carbontrust.co.uk](http://www.carbontrust.co.uk) – The government's main provider of help for businesses aiming to improve energy efficiency and cut carbon emissions. Carbon Trust Helpline: 0800 085 2005.
- [www.energysavingtrust.org.uk/](http://www.energysavingtrust.org.uk/) – The Energy Saving Trust aims to cut emissions of carbon dioxide by promoting the sustainable and efficient use of energy.
- <http://footprint.wwf.org.uk/> – footprint calculator.
- [www.carbonbalanced.org/](http://www.carbonbalanced.org/) – World Land Trust, an international conservation charity.
- [www.cdproject.net/](http://www.cdproject.net/) – The Carbon Disclosure Project, where more than 1,000 large corporations report on their emissions through the site.

### Environmental management

- [www.emas.org.uk](http://www.emas.org.uk)

### Fair trade

- [www.fairtrade.org.uk](http://www.fairtrade.org.uk)
- [www.tjm.org.uk](http://www.tjm.org.uk) – Trade Justice Movement.
- [www.wearewhatwedo.org](http://www.wearewhatwedo.org)

### Recycling

- [www.wasteonline.org.uk](http://www.wasteonline.org.uk)
- [www.envirowise.gov.uk](http://www.envirowise.gov.uk)
- [www.envirofone.co.uk](http://www.envirofone.co.uk) – for recycling telephones.
- [www.freecycle.org.uk](http://www.freecycle.org.uk) – A global network for swapping/donating rather than throwing things away – has local groups across the UK.

- [www.recycle-more.co.uk](http://www.recycle-more.co.uk): *help and advice on all aspects of recycling at home, at school and in the workplace.*
- [www.recoup.org/business/default.asp](http://www.recoup.org/business/default.asp): *Plastics recycling.*
- [www.berryman-uk.co.uk/index.php](http://www.berryman-uk.co.uk/index.php): *the UK's largest collector and recycler of waste glass.*

### Sustainable development

- [www.sd-commission.org.uk/](http://www.sd-commission.org.uk/) – *The government's advisory body on sustainable development.*
- [www.forumforthefuture.org.uk/](http://www.forumforthefuture.org.uk/) – *a sustainable development charity.*
- [www.aecb.net/index.php](http://www.aecb.net/index.php): *the sustainable building association.*

### Tax relief

*The Enhanced Capital Allowance scheme provides businesses with enhanced tax relief for investments in equipment that meets published energy-saving criteria.*

*ECA's website covers equipment that qualifies for the allowance and gives the performance criteria for each technology. It also explains how to claim ECAs.*

- [www.eca.gov.uk/etl/default.htm](http://www.eca.gov.uk/etl/default.htm)

### Timber and paper

- [www.fsc-uk.org](http://www.fsc-uk.org) – *The Forest Stewardship Council runs a global forest certification system that includes Forest Management and Chain of Custody certification. This ensures that timber produced in certified forests has been traced from the forest to the end user.*
- [www.ppe.uk.net](http://www.ppe.uk.net) – *Names of green printers and recycled paper.*

### Travel

- [www.sustrans.org.uk](http://www.sustrans.org.uk) – *UK sustainable transport charity.*
- [www.cyclescheme.co.uk](http://www.cyclescheme.co.uk)
- [www.dft.gov.uk/pgr/sustainable/cycling/cycletoworkschemeimplementat5732](http://www.dft.gov.uk/pgr/sustainable/cycling/cycletoworkschemeimplementat5732) – *Guidance for employers' payroll and HR departments on implementing tax-free cycle loans to their employees.*

- [www.liftshare.com](http://www.liftshare.com)
- *You can see examples of branded sites at: [www.harwellcarshare.com](http://www.harwellcarshare.com) and [www.journeysharecaithness.co.uk](http://www.journeysharecaithness.co.uk)*

### Waste

- [www.envirowise.gov.uk](http://www.envirowise.gov.uk) – *The main government programme providing advice to businesses in industry and commerce on improving resource efficiency (eliminate, reduce, re-use). Envirowise Helpline: 0800 585 794.*
- [www.wasteonline.org.uk/](http://www.wasteonline.org.uk/)
- [www.wrap.org.uk](http://www.wrap.org.uk) – *Research reports and useful fact sheets.*

### Water

- [www.waterwise.org.uk](http://www.waterwise.org.uk)
- [www.environment-agency.gov.uk/subjects/waterres/287169/](http://www.environment-agency.gov.uk/subjects/waterres/287169/)



# 9

## Quiz

### True or false?

- Computer monitors use twice the energy of PCs?
  - True
- Switching off all non-essential equipment in an office overnight saves enough energy to run one small car for 50 miles
  - False, answer is 100 cars
- One return flight from London to New York will generate the same amount of CO<sub>2</sub> as driving a family car for 4 months
  - True

### Energy

- How much of the energy consumed in the UK is wasted?
  - 30%
- How much could your organisation save each year by turning down its heating by 1 degreeC?
  - Up to 10% of its fuel bill
- How much energy could your organisation save by having a simple, seven-day timer on shared equipment, eg printers, water coolers and vending machines?
  - Up to 70%
- How much of an office's energy bill is spent on lighting?
  - Around 15%
- How much less electricity do energy-saving lightbulbs use compared to standard light bulbs?
  - 75%
- How much longer do energy-saving light-bulbs last compared to standard light bulbs?
  - Up to 10 times

### Paper

- How much of the waste in a typical office is paper-based?
  - Half

### Waste

- How much does waste cost UK industry a year?
  - £15 billion
- How much of office waste is recyclable?
  - Approx 70%
- On average, how much office waste reaches a recycling facility?
  - 7.5%

### Water

- How much water in the average office is used in the washroom?
  - Over two-thirds
- How much water does a 5mm stream of water waste every year?
  - 528,000 litres
- How much water do push button taps save compared to conventional taps?
  - Up to half

### Transport

- How much would be saved each year by increasing the efficiency of vehicles from 30 miles per gallon to 40mpg (based on a business with 50 company cars doing 30mpg and 15,000 business miles per year @58p per litre excl VAT)?
  - £16,560
- How many early deaths does air pollution cause in the UK every year?
  - Estimates range from 24,000 to 32,000.
- How many tonnes of CO<sub>2</sub> does an average car in the UK produce per year?
  - Approximately 3.3 tonnes

# SHARE YOUR CAR AND CUT YOUR CO<sub>2</sub> MILEAGE

CO<sub>2</sub> MILEAGE RATES – MASS OF POLLUTANTS IN GRAMMES EMITTED PER PASSENGER MILE OF TRAVEL

<i>Transport</i>	<i>Mode</i>	<i>CO<sub>2</sub></i>	<i>C,Carbon</i>	<i>NOx</i>	<i>Particulates</i>
<b>Car</b>	<b>Petrol</b>	298	81	0.95	0.10
	<b>Diesel</b>	225	61	2.22	0.30
	<b>Hybrid</b>	200	55	0.3	n/a
<b>Rail</b>		116	32	n/a	n/a
<b>Air</b>		340	93	0.70	n/a
<b>Taxi</b>		357	97	2.43	0.66
<b>Coach/Bus</b>		90	25	0.3	0.03
<b>Tube</b>		171	47	0.12	n/a

The table shows conversion factors for transport mode. This will enable your office to estimate CO<sub>2</sub> emissions for each mile or kilometre travelled.



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