Scottish Environment LINK

Carbon Accounting

Guidance compiled for LINK

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Carbon Accounting

1. Introduction

This document is a guide to carbon accounting: assessing your organisation's carbon emissions and setting targets for reduction. To implement carbon accounting in your organisation, you can follow the structure of this document, which is laid out to be as straight-forward as possible:

(1)   Measure your current, or baseline, carbon emissions

(2)   Set targets for reduction

(3)   Set up systems to monitor your emissions and conduct a periodic emissions audit

(4)   Report, internally and externally, on your reduction programme and progress against targets

Information on how to approach each step is provided in the sections below. The final section also provides some ideas on how to motivate staff and volunteers to work towards your emissions targets. General guidance on how to reduce your emissions (to meet targets) is provided in the companion LINK document, *A guide to cutting your organisation's carbon emissions*.

It is best not to be overwhelmed by trying to do more than you have the capacity to handle. For example, it may be better to start by accounting for just non-transport energy emissions instead of putting the whole exercise off due to lack of capacity. Once you feel you have a handle on this, you can then add in accounting for transport emissions. Of course the more you can do now, the better. Note, too, that even if you feel you cannot measure everything at the moment, it is still worth putting the necessary data collection procedures in place now (as described in the *Monitoring* section) as this will make measurements much easier when you get to them.

Finally, it is important to recognise that a significant part of our carbon footprint comes from the materials we consume, the waste we dispose of, and the water we use. Measuring the specific carbon emissions from these activities that are attributable to your organisation can be difficult and is outside the scope of this document. However, further information can be found in the companion document *A guide to cutting your organisation's carbon emissions*.

2. Measuring Your Organisation's Carbon Emissions

The first step in implementing carbon accounting for your organisation is to measure your existing, baseline, emissions. Two of the main areas that generate carbon emissions are general energy use (e.g. electricity, heating, powered equipment) and transport. For each of these, this section provides:

(1)   an explanation of what specific activities generate carbon emissions

(2)   how to calculate your organisation's emissions

(3)   links to tools that calculate emissions for you

(4)   information on free audits provided by the Energy Savings Trust

2.1. Energy Use

2.1.1. Factors to consider

Aside from transport (which is covered separately), there are three main uses of energy and all of them potentially result in carbon emissions.

Electricity:	Seventy-two percent of the UK's electricity supply is generated by coal and natural gas[1]. It is possible to purchase from a renewable supplier or generate it renewably yourself.
Heating:	The majority of heating in the UK is generated from carbon-emitting sources such as natural gas and oil. Biomass heating (e.g. using wood pellets), solar water heating, and ground source heat pumps can reduce carbon emissions from heat.
Equipment and machinery:	Equipment not powered by electricity (e.g. mowers, tractors) usually run on some form of fossil fuel.

2.1.2. How to calculate emissions from non-transport energy use

The UK Department for Environment, Food, and Rural Affairs (Defra) produces a set of robust conversion factors that can be used to easily calculate carbon dioxide emissions from a variety of energy sources. You can calculate your non-transport energy use as follows:

(1) Collect together information on your energy use over the past year:

    (a) Electricity bills (emissions from electricity you generate yourself will be accounted for in other fuel types, below, or are zero in the case of renewable generation such as on-site solar photovoltaic panels)

    (b) Natural gas bills

    (c) Records of how much heating oil you have purchased or used

    (d) Records of how much coal you have purchased or used

    (e) Records of how much fuel for equipment and machinery you have purchased—keep separate totals for different fuel types (e.g. diesel and petrol)

(2) Download the document *Guidelines to Defra's greenhouse gas (GHG) conversion factors for company reporting* from the *Environmental Reporting* section of Defra's website. If you do not have access to the website, contact the LINK office who can supply you with a copy.
<http://www.defra.gov.uk/environment/business/envrp/conversion-factors.htm>

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1   Full fuel mix data from all suppliers can be found at <http://www.electricityinfo.org/>.

(3) Use the conversion factors to calculate the kilograms of CO_2 emissions for all non-transport energy use over the past year. The location of conversion factors, and some notes on their use are as follows:

Energy type   **Location**
Notes

(a) <u>Electricity (bought)</u>   Defra: Annex 3, Table 2
You will need to know how many kWh of electricity you have used, which can be found on your bills. For electricity suppliers, including renewable tariffs, use the *Rolling Average* conversion factor. The *Renewables* conversion factor cannot be used for electricity you purchase[2].

(b) <u>Natural gas</u>   Defra: Annex 1, Table 1
There are conversion factors for kWh and therms, and your usage should be given in at least one of these units on your gas bills.

(c) <u>Heating/burning oil</u>   Defra: Annex 1, Table 1

(d) <u>Coal</u>   Defra: Annex 1, Table 1

(e) <u>Fuel for equipment and machinery</u>   Defra: Annex 1, Table 1
Conversion factors are listed for a variety of fuels (e.g. diesel, petrol).

To complete step (3), you may find it useful to set up a spreadsheet that includes all energy uses relevant to your organisation, with the Defra conversion factors. That way you can easily generate an updated set of numbers in the future.

2.1.3. Online energy use emissions calculator

The Carbon Trust provides an online carbon footprint calculator which uses Defra's conversion factors to determine CO_2 emissions for your organisation. You will need to set up a free account, but once this is done you can create multiple carbon footprint reports, and edit them later. This calculator asks for data on transport as well as the energy use discussed in this section, but if you do not want to calculate transport emissions at this point you can indicate you have no transport-related activity. It is possible to edit the carbon footprint later to include the transport information. To complete a carbon footprint, you will need to gather together the same set of information as discussed in step (1) of *How to measure energy use*, above.

<http://www.carbontrust.co.uk/publicsites/CFCalculator/>

2.1.4. Organisations that can carry out an audit for you

The Energy Savings Trust (EST) can provide free energy audits for most organisations. Their audits involve a consultant analysing your building and energy use, providing advice on how to lower your energy use, and guidance on how to monitor your energy use in the future. To qualify for a free audit from the EST, you probably need to be spending at least £1,000 per year on your energy bills. However, this figure is not set in stone and there is some flexibility. It is also possible for multiple organisations in the same (or possibly adjacent) building to group together for an audit. The best course of action is to contact Andrew Arnott, one of the EST's business advisers, on (0131) 468 8668 and he can provide advice for your specific situation or refer you to a business adviser in your area.

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2   This is because of the manner in which the electricity industry trades renewable generation through the use of Renewable Obligation Certificates (ROCs).

2.2. Travel and Transport

2.2.1. Factors to consider (and which ones to include in your audit)

There are three areas that you might consider when auditing travel related to your organisation's operations.

Business travel:	This includes travel taken as a direct result of your organisation's operations, including travelling to meetings and travelling between your sites or properties.
Commuting:	This is the travel undertaken by staff and volunteers to get to and from work.
Visitors:	Travel by visitors is applicable if your organisation manages properties or reserves that are open to visitors, or holds events attracting substantial numbers of people.

Of these three, only *business travel* is the direct responsibility of your organisation and is the only one where precise measurement is feasible. As the other two types of travel are not your direct responsibility, you may not feel that you can include them in your audit. However, it is possible to track usage trends for the other two types of travel, and doing this encourages an organisation to think about how it can encourage more sustainable travel by staff and visitors. The more types of travel you can include in your auditing, the better.

2.2.2. How to calculate transport emissions

2.2.2.1. Business travel

The UK Department for Environment, Food, and Rural Affairs (Defra) produces a set of conversion factors that can be used to easily calculate carbon dioxide emissions transport modes (e.g. car, bus, train). Whilst the conversion factors for most of these modes are robust, the ones for aviation have a couple of omissions. They do not account for the increased per passenger emissions in more luxurious classes of travel due to more space being necessary for increased legroom, bigger seats, and beds. The Defra conversion factors also do not take into account the fact that aviation emissions, because they are made at altitude, have a greater climate change impact than the same emissions would at ground level[3]. Therefore, it is suggested that you use conversion factors developed by Carbon Planet when calculating airline emissions. These conversion factors are based on robust research of actual airline emissions.

An online emissions calculator (discussed below) might be quicker than calculating emissions manually, but if you prefer to do it yourself, you can calculate your business travel carbon emissions as follows. It is probably easiest to create a spreadsheet tailored to your organisation so you can easily include updated data at any time. Note that it will be much easier to measure your travel-related emissions if you set up systems for automatically collecting data as described in the *Monitoring* section below.

    (1)   Collect together information on your organisation's *business travel* over the past year:

        (a)   If you do not have separate records for diesel and petrol car-based

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3   Details of this effect are discussed in the Intergovernmental Panel on Climate Change document *Aviation and the Global Atmosphere* <http://www.grida.no/climate/ipcc/aviation/>.

business travel, you will need a record of total kilometres[4] driven on business; if you do have separate records, ignore this item and see the ones below

(b) Amount of petrol purchased for business travel by car *or* the number of kilometres driven in petrol cars, including taxis and hire cars, ideally separated by type:

- small petrol engine (≤1.4 l)
- medium petrol engine (1.4 l–2.0 l)
- large petrol engine (≥2.0 l)
- medium hybrid engine
- large hybrid engine

(c) Amount of diesel purchased for business travel *or* the number of kilometres driven in diesel cars, including taxis and hire cars, ideally separated by type:

- small engine (≤1.7 l)
- medium engine (1.7 l–2.0 l)
- large engine (≥2.0 l)

(d) Amount of petrol purchased for business travel by motorcycle/scooter *or* the number of kilometres driven by motorcycle/scooter, ideally separated by type:

- small (≤125 cc)
- medium (125 cc–500 cc)
- large (≥500 cc)

(e) The distance in kilometres, per person, travelled by bus

(f) The distance in kilometres, per person, travelled by national rail[5]

(g) The distance in kilometres, per person, travelled by light rail (e.g. trams)

(h) The distance in kilometres, per person, travelled by underground (e.g. Glasgow subway)

(i) The distance in kilometres, per person, travelled by air[6], separated by class and distance:

- economy class
- premium economy class
- business class
- first class
- short haul (≤1,000 km)
- medium haul (1,000–5,000 km)
- long haul (≥5,000 km)

It is important to account for individual flights as one outward trip by air might involve two or more actual flights (which could be different types)

(2) Download the following two documents. If you don't have access to websites, contact the LINK office who can supply you with copies:

(a) *Guidelines to Defra's greenhouse gas (GHG) conversion factors for company reporting* document from the *Environmental Reporting* section of Defra's website.
<http://www.defra.gov.uk/environment/business/envrp/conversion-factors.htm>

(b) *Greenhouse Gas Flight Emissions Info* from the *Flight Emissions Calculator* section of Carbon Planet's website.

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4 1 mile ≈ 1.6 kilometres / 1 kilometre ≈ 0.625 miles

5 See the section *Links to online calculators*, below, for help with calculating rail journey distances.

6 See the section *Links to online calculators*, below, for help with calculating air journey distances.

<http://www.carbonplanet.com/downloads/ghg_emission_factors_for_flights.pdf>

<http://www.carbonplanet.com/shop/flight_emissions_calculator>

(3) Use the conversion factors to calculate the kilograms of CO_2 emissions for all business travel over the past year. The location of conversion factors, and some notes on their use are as follows:

Transport type   **Location**
Notes

(a) Average car (unknown fuel)   Defra: Annex 6, Table 6d
This conversion factor should only be used if you cannot separate your car-travel records by type of fuel. If you can, use the conversion factors below instead.

(b) Petrol car   Defra: Annex 6, Tables 5a, 6a, 6c
If you have a record of the amount of petrol bought then use *Table 5a* as this will be the most accurate. If you only have a record of the mileage driven, then use *Table 6a* (standard petrol cars) and *Table 6c* (hybrid petrol cars). Ideally in the latter case, you can separate the miles by size of car, but if not then use the "Average petrol car" conversion factor.

(c) Diesel car   Defra: Annex 6, Tables 5a, 6b
If you have a record of the amount of diesel bought then use *Table 5a* as this will be the most accurate. If you only have a record of the mileage driven, then use *Table 6b*. Ideally in the latter case, you can separate the miles by size of car, but if not then use the "Average diesel car" conversion factor.

(d) Motorcycle/scooter   Defra: Annex 6, Tables 5a, 7
If you have a record of the amount of petrol bought then use *Table 5a* as this will be the most accurate. If you only have a record of the mileage driven, then use *Table 7*. Ideally in the latter case, you can separate the miles by size of motorcycle, but if not then use the "Average petrol motorbike" conversion factor.

(e) Bus   Defra: Annex 6, Table 8

(f) National rail   Defra: Annex 6, Table 8

(g) Light rail (e.g. trams)   Defra: Annex 6, Table 8

(h) Underground (e.g. Glasgow subway)   Defra: Annex 6, Table 8

(i) Flights   Carbon Planet: Page 9, Table 4
The conversion factor is found by looking in the row corresponding to the seating class and then locating the column related to the type of flight.

2.2.2.2. Commuting and visitor travel

When considering staff and volunteer commuting and visitors travelling to your properties or events, it is not normally feasible to measure the precise carbon emissions as for business travel. However, the type of transport used by commuters and visitors can be split into three general categories:

(1) Zero-emission: walking, cycling

(2) Low-emission: bus, rail

(3) High-emission: car

To measure commuting and visitor travel, conduct staff and visitor surveys to determine what percentages of people use each category of travel. Note that it is important to keep figures for staff/volunteers separate from those for visitors as any actions you take based on the results will likely be different. If your organisation has multiple sites, you can start by surveying the main one and then expand to others over time.

2.2.3. Links to online calculators

Business travel

The most comprehensive travel carbon calculator is the YETI calculator hosted at Smarter Choices. This calculator allows you to upload business travel data and then analyses it en masse, providing useful graphs and breakdowns enabling you to easily determine which modes of transport and which destinations are responsible for the most emissions. This analysis helps to identify the best ways to tackle transport emissions. You will need to provide similar information as discussed in step (1) of *Business travel*, above, but the necessary information can be exported from a spreadsheet and uploaded to YETI. So by recording the appropriate information as part of your monitoring procedures, analysing business travel with YETI should take very little extra time. However, note the issue regarding calculation of flight emissions (below).

If you would like to analyse commuting, YETI also allows each staff member to log in to the website and enter their own commuting information. Staff can use geographic start and end points and YETI will calculate the distances for journeys such as bus and train travel for them. Each commute can involve multiple legs (e.g. walking, bus, walking). You can then log on and YETI will provide analysis of commuting travel for all staff as well as the business travel.

<http://www.smarterchoices.co.uk/content/yeti/HelpWithYeti.aspx>
<http://www.smarterchoices.co.uk/CompanyRegister.aspx>

The Carbon Trust also provides an online carbon footprint calculator which uses Defra's conversion factors to determine CO_2 emissions for your organisation. The calculation only considers business travel, not commuting or visitor travel, and is not ideal for calculating flight emissions (see below). There is no option to upload all your business travel information at once, so entering business travel is more time-consuming than with YETI. But it is manageable with small amounts of travel. You will need to set up a free account, but once this is done you can create multiple carbon footprint reports, and edit them later. As it aims to calculate all the emissions of your organisation, this calculator asks for data on energy use as well as the transport use discussed in this section, but if you don't want to calculate energy emissions at this point you can indicate you have do not have non-transport-related energy use. It is possible to edit the carbon footprint later to include the energy information. To complete a carbon footprint, you will need to gather together the same set of information as discussed in step (1) of *Business travel*, above.

<http://www.carbontrust.co.uk/publicsites/CFCalculator/>

One weakness with the YETI and Carbon Trust calculators is that they do not take account of increased flight emissions due to altitude or seating class. Therefore, you should aim to calculate your flights using Carbon Planet's flight emissions calculator

<http://www.carbonplanet.com/shop/flight_emissions_calculator>

Calculating flight distances

The flying distance between airports can be calculated precisely using Air Routing International's 'Time/Distance Calculator' on its website. You will need to know the official IATA codes for the airports—if you do not know them, they can be found using the 'Airport Locator' on the same website. You can ignore the 'Air Speed' field on the

calculator as you will only be interested in the distance. In the calculator's results, the figure you need is the kilometres, which is the second figure from the bottom.

<http://www.airrouting.com/content/tdcalc.html> (distance calculator)
<http://www.airrouting.com/content/airportloc.html> (airport locator)

If you would prefer a calculator where you can choose the airports' names from a menu instead of needing to know the IATA codes, you can use Carbon Planet's flight emissions calculator. This calculator calculates distance between airports using an approximation formula but is close enough, generally being within a few miles of the Air Routing International data.

<http://www.carbonplanet.com/shop/flight_emissions_calculator>

Calculating rail distances

Unfortunately, there is not an online tool for calculating the distance between two rail stations. Distances are listed in the official 'National Rail Timetable' which can be downloaded from the Network Rail website. A less precise, but potentially easier, alternative is to use an online mapping tool such as MultiMap or Google Maps to find out the driving distance and use that as a reasonable approximation. For instance, the rail timetable gives a distance between Edinburgh Waverley and London King's Cross as 393 miles, whereas MultiMap gives the driving distance as 403 miles.

<http://www.networkrail.co.uk/aspx/3828.aspx>
<http://www.multimap.com/>
<http://maps.google.co.uk/>

2.2.4. Organisations that can carry out an audit for you

The Energy Savings Trust (EST) can provide free consultancy advice on a travel plan for your organisation. As part of this advice they will help you assess both business travel and commuting. The service from the EST would involve more than this assessment as you would need to develop a travel plan as well. Whilst this is a time-consuming process, it will help make monitoring easier and can provide significant benefits as discussed in the LINK companion document *A guide to cutting your organisation's carbon emissions*. You can either download a Travel Plan Advice application form from the EST website or contact Andrew Arnott, one of the EST's business advisers, on (0131) 468 8668 and he can provide advice for your specific situation or refer you to a business adviser in your area.

<http://www.energysavingtrust.org.uk/fleet/organisations/traveladvice/planyourtravel/>

3. Setting Emissions Targets

Once you have measured your carbon emissions, you can set targets to reduce these emissions. This will help both to focus your efforts and to give staff a specific goal to work towards.

3.1. Important Issues when Setting Targets

When setting your targets, it is important that they are realistic (though potentially challenging) but also meaningful. A target to reduce emissions "as much as possible" is certainly realistic but it will be difficult to ascertain whether the target has been met or

not. However, do not shy away from setting challenging targets. Making meaningful emissions reductions is not necessarily difficult, depending on your current practices. Just turning off your computers at night and using energy saving light bulbs can make significant reductions. See the LINK companion document *A guide to cutting your organisation's carbon emissions* for more ideas.

Looking at the bigger picture, the purpose of cutting your carbon emissions is to avoid the most damaging effects of climate change. Leading climate scientists agree (and the UK government and EU have accepted) that to avoid the most severe effects of climate change, the largest allowable increase in global temperature is 2º C above pre-industrial levels. The world has already warmed 0.7º C since pre-industrial times, so at most we can only afford a further increase of 1.3º C. To keep within this limit, the scientific consensus is that countries such as ours must cut carbon emissions to at least 80 per cent below 1990 levels. To achieve this, the UK needs a decrease in carbon emissions of at least 3 per cent per year.

You should keep this ultimate goal in mind when setting targets. Therefore, they should aim for reductions sooner rather than later and be focused around the necessary minimum emissions reduction of 3 per cent per year. And the sooner you reduce your emissions, the greater the opportunity you will have to encourage your organisation's supporters or members to do the same.

3.2. Types of Targets

The type of target you use will depend on what you are focusing on and how your organisation works. You need to decide what makes most sense for your organisation, but here are some of the factors to consider when structuring your targets. The next section illustrates these factors with specific examples.

Measurement unit:	Are your targets going to be for the whole organisation, or per person? Are you going to measure carbon emissions or use/consumption (e.g. of electricity)?
Aim:	Are you going aiming to reduce emissions by a certain percentage on current levels, aiming for a specific amount of emissions, or is your target more general? Note that specific targets are generally more effective than general ones.
Subject:	What are you targeting? Depending on your organisation, you might want to set an overall target for emissions reduction, set separate targets for transport and energy use, or even separate out targets for different types of energy (e.g. electricity).

3.3. Examples of Targets from Other Organisations

Some LINK member organisations have already set targets for carbon emissions reduction. Examples of these targets are shown below to give you a starting point in developing your own targets. As this is not meant to be an assessment of organisations' existing targets, their names have been omitted. However organisations with emissions reduction targets often state them on their websites. Looking for organisations that are similar (in size) to your own, can provide a frame of reference when setting your own targets.

3.3.1. Annual percentage reduction targets

- A 3 per cent average reduction in carbon emissions each year from 2007 to 2012; at least a 1.5 per cent reduction in travel emissions from 2007–2008.

- Reduce overall electricity and gas consumption by 5 per cent in 2008.

- Regarding emissions from air travel, aim for a further 5 per cent reduction over last year's target of 292 tonnes of carbon.

3.3.2. Specific quantity of emissions targets

- The overall travel emissions target remains consistent with the previous years' targets of 422 tonnes CO_2 emissions.

- The annual emission of CO_2 due to business travel should not exceed an average of 1,200 kg per employee. The distance travelled annually should not exceed 7,500 miles per employee.

- No non-renewable energy will be used in our offices.

3.3.3. General reduction targets

- Increase the use of trains instead of aeroplanes for journeys within Europe.

- Identify and implement ways in which we can reduce the adverse environmental impact of our business travel.

- To encourage our supporters to reduce the adverse environmental impact of their business and domestic travel

4. Monitoring

Once you have measured your baseline carbon emissions and set targets for reduction, you need to monitor your emissions over time. Plan to complete an emissions audit periodically (e.g. annually). This audit is a chance to look at emissions over the previous periods, evaluate progress against targets, and set new targets if appropriate. Whilst you might only calculate emissions for some activities during the audit, for other activities it will be easier to track emissions on an ongoing basis. The results from this ongoing monitoring can then be included in your periodic audit.

4.1. Energy

Energy use is simple to monitor as you are likely receive a regular bill for electricity and gas. By creating a spreadsheet, using the conversion factors as described in the *Section 2* above, you can enter in energy usage whenever you receive bills and immediately see your carbon emissions. If you purchase other fuel (e.g. heating oil, coal) then you can enter their quantities when making the purchase. This will make it easy to track progress against reduction targets and compare your emissions for similar periods year-on-year. Note that you should aim to monitor energy usage for each office used by your organisation.

4.2. Transport

Transport can be more difficult to monitor if you do not have a system set up to track the necessary figures. The best way to monitor transport emissions is to capture data in the

following ways:

- Expense claim forms for business travel should include a space for miles travelled and the type of transport used. When specifying a car or motorcycle as the type of transport, staff must include the engine's size and fuel type. On the form, provide staff with links to the mileage calculators described in *Section 2*.

- If you have fleet or pool cars that staff use, keep a central record of the amount of fuel used for these cars.

- If you already count visitors to your properties, include information on how they travelled to the property.

By collecting information in this way, you can set up a spreadsheet using the conversion factors described in *Section 2* and enter data on business travel when processing expense claims. If you have existing accounting procedures for keeping track of fleet car usage, calculating their emissions can be done at the same time, otherwise it can be done during your periodic emissions audit.

Auditing commuting and visitor travel is best done through staff and visitor surveys to coincide with your periodic emissions audit. You can use the travel surveys developed when making your initial baseline measurements.

5. Reporting

Once you have a programme of carbon emission reduction targets with regular monitoring, it is a good idea to provide information on the programme, available both internally and externally to your organisation. Internal reporting informs staff and volunteers of the importance of emissions reductions and provides updates on progress. External reporting shows that you are taking action and can be used to encourage your supporters to also reduce their personal carbon emissions.

Reporting does not have to be complicated, and is probably best published on your website. This avoids the cost and resource use associated with printing paper reports. For each area you have set targets for (e.g. energy, business travel) you should provide the following information:

(1) **Policy (should not change unless the policy is reviewed and updated)**

    (a) Reason for focusing on this topic

    (b) Target

    (c) Actions your organisation is taking to work towards the target

(2) **Progress Report (updated based on periodic monitoring discussed above)**

    (a) Did your organisation meet the target, do better than the target (by how much?) or miss the target (by how much?)

    (b) Brief discussion explaining the organisation's performance in this area

In your report, you should structure this information in whatever way you feel will be clearest (e.g. all progress reports could be grouped together). Furthermore, for internal reporting you might want to produce more detailed statistics or discussion for item (2b) above. This could help to identify any issues and where to focus efforts for the coming

period.

If an external organisation requires an environmental report from you, they may have specific reporting standards you need to meet. In particular there is a widely used carbon emissions accounting tool called the 'GHG Protocol'[7]. This protocol separates emissions into three scopes and you might be required to report emissions separated by the scope they fall into. For information, these scopes are listed here but you should verify any requirements with the organisation requesting your environmental or emissions report.

(1) Direct emissions: emissions your organisation generates (e.g. burning natural gas in a boiler, mileage on cars owned by the organisation).

(2) Indirect emissions (imported utilities): electricity, heat, or steam generated elsewhere but brought onto your organisation's site.

(3) Indirect emissions (other): using transport your organisation does not own (e.g. trains, hire cars) and emissions caused by the manufacture of products you purchase.

6. Motivating Employees to Work Towards Targets

Your staff and volunteers are probably very busy already. Therefore, it is worth thinking about whether you can provide incentives that will encourage them to be enthusiastic about your carbon reduction targets. Of course it may not be possible for your organisation to provide any incentives other than "doing the right thing", but this topic is worth at least considering. There are many ways to motivate people and how you do this will depend to a large extend on the size and culture of your organisation. However, the following are some ideas that hopefully provide a starting point:

• Part of the monetary savings resulting from reduction (e.g. of electricity use) could be used for a staff lunch or group activity. Savings could also be invested in items that provide further reductions and make the office more comfortable (e.g. double-glazing).

• You can provide interest-free loans for staff to purchase bicycles.

• Set up a Carbon Rationing Action Group (CRAG) that staff can join. In such groups, those who go over their agreed carbon ration pay a small fine which is collected by those who use less carbon than their agreed ration. A CRAG provides a social way for people to get involved with carbon reduction. For details on CRAGs, see the website which also gives examples of the many different CRAGs in the UK.
<http://www.carbonrationing.org.uk/>

• Internally promote local events which encourage carbon reduction behaviour and give staff time off to attend the events if necessary (e.g. Edinburgh Bike Breakfast).

• Where possible, provide discounts on energy saving equipment for staff. For instance, if your organisation is buying a bulk order of energy saving light bulbs at a lower-than-retail price, allow staff to buy bulbs for personal use at cost.

• Provide subsidies for bus season tickets.

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7   See <http://www.ghgprotocol.org/>.