

## Appendix 4

### Our Mitigation Protocol

#### *How will we reduce our greenhouse gas emissions?*

#### **A Mitigation Agenda**

The agenda for a policy response to mitigate climate change through greenhouse gas (GHG) emissions reduction and the enhancement of sinks is well rehearsed in the climate change literature. Driven by a variety of Government-agreed, short-term GHG emissions reduction targets, the UK Climate Change Programme recognises that local authorities are uniquely placed to provide the vision and leadership necessary for the delivery of the programme. Devon County Council has action in place on a number of initiatives that will contribute to climate change mitigation but these measures, together with additional activities, need to be brought together into a coherent mitigation agenda. Such an agenda is likely to have the following characteristics:

- Action taken is independent of the uncertainty over climate change outcomes and can be started immediately.
- It is a long-term activity that will require routine examination of ways of working as well as the deployment of new technology, new regulatory frameworks and challenging cultural change.
- It is unlikely that individual/community voluntary action alone can deliver the deep cuts in emissions required to prevent dangerous climate change.
- It will always attract investment costs in the short-term.
- It may deliver short-term savings but is principally aimed at realising long-term benefits for future generations.

The following 8-point mitigation protocol is based on three widely acknowledged mitigation frameworks from Defra <sup>1</sup> and the World Resources Institute <sup>2 3</sup>.

#### **Step 1. Secure Organisational Support**

The case for action has been made through the work of the Climate Change Task Group of the Environment and Economy Overview/Scrutiny Committee and endorsed by the Executive in December 2002<sup>4</sup>. With the appointment of the Climate Change Officer in December 2003,

<sup>1</sup> Defra Environmental Reporting Guidelines for Company Reporting on Greenhouse Gas Emissions @ [www.defra.gov.uk/environment/envrp/gas/04.htm](http://www.defra.gov.uk/environment/envrp/gas/04.htm) .

<sup>2</sup> Working 9 to 5 on Climate Change: An Office Guide @ [www.wri.org](http://www.wri.org) .

<sup>3</sup> The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard @ [www.ghgprotocol.org](http://www.ghgprotocol.org)

<sup>4</sup> ED/02/294/HQ, Climate Change: Priorities dated 16 December 2002.

the process of building organisational support for a corporate response to climate change has begun. As "*greenhouse gas champion*", the Climate Change Officer has the authority to collect data and draw up a strategy for managing and reporting on greenhouse gas (GHG) emissions as well as addressing the adaptation response. A public declaration of the Council's commitment to reduce emissions from its own operations and to promote mitigation and adaptation action throughout the local community was made on 14<sup>th</sup> July 2004 by becoming a signatory to the Nottingham Declaration on Climate Change. There is now a requirement to gain organisational support from members and officers throughout the Council.

## **Step 2. Plan the Emissions Inventory.**

**Set the organisational boundary.** It is normal to align the organisational boundary for GHG reporting along the lines of corporate financial responsibility using the concepts of control and influence. This is necessary because GHG emissions may in due course become a formal liability attracting a value perhaps based on the social cost of carbon (currently £74 per tonne of carbon or £20 per tonne of CO<sub>2</sub>)<sup>5</sup>. The present value of this liability may be in excess of £1.5 million based on a carbon footprint of 75,000 tonnes of CO<sub>2</sub> equivalent. Recognition of legal responsibility and ownership will allow the Council to better assess its GHG risks and opportunities leading to well-informed management decisions. Early resolution of the ownership of emissions from, for example, Exeter and Devon Airport Ltd., locally-managed schools, contracted out services like highway maintenance, school/community transport and DevonBus, and the county's municipal waste and landfill sites is essential.

**Set the operational boundary.** The process of identifying the scope of the emissions inventory requires a distinction between direct and indirect emissions. Direct emissions are those from sources owned or controlled by the Council. They are also known as Scope 1 emissions and include those from gas, coal or oil-fired boilers owned by the Council, from its vehicle fleet and from unintentional (fugitive) releases from refrigeration and air conditioning systems. Emissions from Council-owned landfill sites may also fall in this category. Indirect emissions are those resulting from the consequence of Council activity but occur from sources owned or controlled by other organisations. Indirect emissions are further divided into Scope 2 and 3 emissions where Scope 2 accounts for those resulting from the import of electricity and Scope 3 all other activities. This latter grouping will include emissions from employee business travel and commuting, outsourced activities, waste and the supply chain. The distinction between direct and indirect emissions is important as any future regulation covering emissions is likely to make such a distinction in order to prevent double counting. Under the GHG protocol reporting of Scope 1 and 2 emissions is mandatory. The reporting of

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<sup>5</sup> The Government Economic Service Working Paper 140 entitled "Estimating the Social Cost of Carbon Emissions".

Scope 3 emissions is encouraged as it provides the opportunity to be innovative with GHG management.

**Identify a Baseline Year.** The baseline year against which emission reductions are measured throughout the climate change community is 1990. This year is used as it has been calculated that global emissions will need to drop below 1990 levels within a few decades in order to stabilise the atmospheric concentration of CO<sub>2</sub> during the 21<sup>st</sup> century and avoid dangerous climate change. However, as the data for constructing the Council's carbon footprint for 1990 is no longer available, the use of 2004/5 as the baseline year is unavoidable.

### **Step 3. Gather the data and calculate emissions.**

**Data Capture Mechanism.** This is a new, extensive and ongoing data collection requirement that is essential if annual progress is to be monitored and reported. Initially, emission estimates will have to suffice in many areas using performance benchmarks, national or regional averages and other explicit assumptions. Over time local key performance indicators (KPIs) for selected mitigation measures will be identified and timely data capture at source will be necessary. The development, implementation and maintenance of such a system will require staff resources. Moreover, it is likely to take several annual iterations to become properly established and integrated into the core business.

**Initial Data Capture Requirements.** The following areas are identified as the principal sources of Scope 1 and 2 emissions:

- Total annual fuel consumption for the DCC-owned fleet by fuel type.
- Total annual fuel consumption of oil, gas and solid fuel consumed in boilers owned and operated by the Council.
- Total annual output of methane and CO<sub>2</sub> from Council-owned landfill sites.
- Total annual kilowatt-hours of electricity purchased by facilities owned and operated by the Council including properties, road signs and streetlights.

In order to increase the scope for GHG reduction measures, arrangements for collecting the following Scope 3 data should be developed;

- Total annual number of business miles by transport type.
- Total annual number of commuting miles by transport type.
- Total volume/tonnage of waste generated by Council operations.
- Total volume of water consumed.

- An assessment of emissions associated with key outsourced activities.

#### **Step 4. Establish an emissions reduction target.**

**International and Domestic Targets.** As a result of the 1997 Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC) the UK agreed to reduce its greenhouse gas emissions by 12.5% below 1990 levels by 2008-2012 <sup>6</sup>. In addition to this international commitment, the Government has set a domestic goal to reduce CO<sub>2</sub> emissions by 20% below 1990 levels by 2010 <sup>7</sup>. This 1% per annum reduction target has been restated in the UK Government's Public Sector targets from April 2000 and in the 2003 Energy White Paper <sup>8</sup> where the aspiration is to cut greenhouse gases to 60% below 1990 levels by 2050.

**Setting the Council's Target.** As the data for constructing the Council's carbon footprint for 1990 is no longer available, a mechanism is required for setting an appropriate emissions target based on the baseline year of 2003/4. It is inappropriate to adopt outright either the Kyoto or domestic reduction targets i.e. a 12.5% reduction within 4 years or 20% within 6 years. Such large reductions in the order of 3.3% to 3.7% per annum may be too costly to achieve on an ongoing basis and would represent significant over-achievement in the present target regime. Based on the aspirational target outlined in the 2003 Energy White Paper a target of 2% per annum would deliver a 60% reduction in emissions by 2050 for a 2003/4 baseline. This is likely to represent a reduction of 1500 tonnes of CO<sub>2</sub> per annum, which is equivalent to 3.5 million kWh of electricity or 4.5 million commuting or business miles. For mitigation action to be successful savings of this magnitude will have to be made year-on-year and thus alternatives to a simple reduction in electricity consumption or mileage count will be required.

#### **Step 5. Decide on measures to achieve target.**

From a systems perspective there are three mitigation strategies to be considered as follows;

##### **Input (or Energy) Strategies**

- **Option 1. "Do less" - DEMAND REDUCTION** - reduce the demand for fossil fuels.
- **Option 2. "Use less" - ENERGY EFFICIENCY** - make more efficient use of fossil fuels.
- **Option 3. "Use different" - SUBSTITUTION** - substitute existing fossil fuels with sustainable fuels or fuels with low or no carbon output.

<sup>6</sup> UK 3<sup>rd</sup> National Communication under UNFCCC, 2001.

<sup>7</sup> UK Climate Change Programme, 2000.

<sup>8</sup> Energy White Paper entitled "Our energy future - creating a low carbon economy"

### Output (or Waste) Strategies

- **Option 4. "Generate less" - WASTE MANAGEMENT** - reduce the potential for emissions especially methane from agriculture and waste.
- **Option 5. "Recover more" - RECOVERY** - collection and use of landfill gas as a substitute energy source.
- **Option 6. "Sink more"- SEQUESTRATION** - conserve existing biological carbon pools and enhance sequestration potential through afforestation.

### Market Strategy

- **Option 7. "Offset"- EMISSIONS TRADING/TECHNOLOGY TRANSFER** - purchase carbon credits or pay others to reduce their emissions as offsets against the Council's emissions.

The Council has action in place on a number of mitigation initiatives within this strategic framework. For example, the Green Travel Plan has both a demand reduction and energy efficiency focus, the Renewable Energy Strategy has a clear substitution goal and the Municipal Waste Management Strategy with its emphasis on recycling is an important waste management strategy. However, neither the full scope of the Council's existing/planned mitigation measures nor an estimate of the absolute size of their individual contribution is known at present. This scoping exercise is essential before the initial mitigation agenda can be confirmed. There is also a need to identify and cost additional mitigation measures that may be required to meet the initial and/or future targets.

### Step 6. Implement measures.

Once the initial package of measures has been costed and funded, implementation is likely to take place as a corporate (horizontal) rather than directorate (vertical) initiative.

### Step 7. Establish and operate a monitoring system.

The lead officer will need to establish and operate a system for monitoring the effectiveness of the mitigation measure. This process may use extant local/regional monitoring initiatives (e.g. BVPIs) and should be identified at the initial data capture stage for the carbon footprint.

### Step 8. Report progress/make a public declaration.

It is recommended that an annual progress report is produced.

