



CLIMATE CHANGE IN SCOTLAND  
ANNUAL REPORT 2009-10



# **Climate Change in Scotland Annual Report 2009-10**

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## Introduction

*"We have passed an historic, groundbreaking bill that sets an international example that we hope others will follow."*

**Rt Hon Alex Salmond MSP, First Minister of Scotland, June 25, 2009**

Climate Change is one of the greatest challenges the world faces, threatening life through its impacts on temperature, on natural resources such as fresh water, and through increased risks of disease and flooding. In many cases it is the deprived people in the world who are most exposed to the impacts of climate change.

The Scottish Parliament, with the strong support of Scottish civic society and business, unanimously passed the Climate Change (Scotland) Act in June 2009. The Act's world-leading targets provide the certainty businesses and communities need to plan for the low carbon future in Scotland.

### 1. Purpose of Annual Report

This is the fourth annual report since Scotland's Climate Change Programme was published in 2006<sup>1</sup>. There has been significant progress in climate change policy in Scotland in recent years and we now have our own statutory framework in the form of the Climate Change (Scotland) Act. This report provides a summary of achievements in 2009-10 related to climate change mitigation and adaptation.

This report is comprised of 7 sectoral reports as well as an update on cross-cutting issues such as carbon assessment and adaptation. This is not an exhaustive list of progress in 2009-10 but provides a general overview of key activities in each sector with weblinks to further information where appropriate.

In future reporting duties will be determined by the Climate Change (Scotland) Act. Some of these reporting requirements start in 2010, but not all. It is therefore likely that there will be a further Annual Report, similar to this one, for 2010-11. Future reporting duties outlined in the Act include:-

- Provision of a statement of net emissions and whether relevant annual target has been met, plus:
  - breakdown of carbon unit use;
  - Scottish electricity consumption and generation; and
  - average emissions from electricity generation
  - Report on proposals and policies for meeting annual targets each time a batch of targets is set.

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<sup>1</sup> <http://www.scotland.gov.uk/Publications/2006/03/30091039/0>

- A report on progress from the relevant body (Committee on Climate Change);
- Ministerial response to Committee on Climate Change (CCC) report on progress;
- Reports on emissions attributable to Scotland's consumption of goods and services;
- Progress on the Adaptation programme.

## **2. Summary 2009-10**

2009-10 was a very important period for climate change in Scotland. The Climate Change (Scotland) Act was passed unanimously by the Scottish Parliament in June 2009. The Act includes world-leading targets and has received strong support from Scottish civic society and business.

The Climate Change Delivery Plan was published in June 2009 outlining the transformational changes required to meet the targets in the Act. More details on this are provided in Chapter 15.

It was also the year that the Copenhagen Summit took place. The First Minister and the Minister for Transport, Infrastructure and Climate Change represented Scotland in Copenhagen during the conference to promote Scotland's world-leading targets set out in the Climate Change (Scotland) Act 2009.

### **2.1 Low Carbon Economy**

The recognition of the need to move towards a Low Carbon Economy has become more widespread and is viewed as both a challenge and, perhaps more importantly, a major opportunity for Scotland. The Scottish Government published 'Towards a Low Carbon Economy for Scotland' in March 2010. This discussion paper sets out plans to move towards a low carbon economy in Scotland, as part of the Government's overarching Economic Strategy. The discussion paper is designed to provide a Scottish focus to low carbon related activity and to complement activity at both UK and EU level. Responses to the discussion paper will be used to help shape the Low Carbon Strategy, due for publication in autumn 2010.

### **2.2 Emissions overview**

Including the effect of EU Emissions Trading Scheme (ETS) and international aviation and shipping, Scottish emissions in 2007 of the six greenhouse gases were 19.2% lower in 2007 than in the 1990 base year, down from 70.0 to 56.6 Mt CO<sub>2</sub>e. Between 2006 and 2007, emissions fell by 1.2% from 57.3 to 56.6 Mt CO<sub>2</sub>e.

The economic recession has continued to have an impact on emissions in Scotland and elsewhere. 2008 emissions data for Scotland will be available in September 2010 and 2009 data will be available in 2011. Provisional 2009 estimates of UK greenhouse gas emissions show a decline of 8.6% on the previous year<sup>2</sup> (excluding the effect of trading in the EU Emissions Trading Scheme)<sup>3</sup>. As the UK economy contracted during 2009, this resulted in an

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<sup>2</sup>

[http://www.decc.gov.uk/en/content/cms/statistics/climate\\_change/gg\\_emissions/uk\\_emissions/2009\\_prov/2009\\_prov.aspx](http://www.decc.gov.uk/en/content/cms/statistics/climate_change/gg_emissions/uk_emissions/2009_prov/2009_prov.aspx)

<sup>3</sup> The percentage decrease is likely to be significantly smaller after the EU Emissions Trading System is taken into account.

overall reduction in demand for electricity, together with lower fossil fuel consumption by businesses and households.

### **2.3 Renewables**

There have been significant developments on the renewables front in 2009-10 with Scotland paving the way to become the green energy powerhouse of Europe. Our natural resources make us ideally placed to meet our energy requirements from renewable sources and we are well on the way to meeting our target of 50% of electricity demand from renewables by 2020. An outline of the main developments is shown in Chapter 6 of this report.

### **2.4 Environmental and Clean Technologies**

In addition to developing new renewable energy technologies, it is also vital to develop other Environmental and Clean Technologies to support the transition to an environmentally sustainable, low carbon economy. A partnership between the Scottish Government, Scottish Enterprise, Highlands and Islands Enterprise and the Scottish Funding Council published an Environmental and Clean Technologies Action Plan in September 2009, setting out proposals for supporting the development of the ECT sector in Scotland. This action plan identifies five priority ECT subsectors as: building technologies; sustainable transport; waste management, recovery and recycling; water and waste water treatment; and environmental monitoring and instrumentation. The Scottish Government's Low Carbon Strategy, to be published in autumn 2010, will include a section setting out the way forward for Environmental and Clean Technologies, and will be followed by more detailed business plans for each of the priority subsectors later in the year.

### **2.5 Public Sector Role**

The role of the public sector in leading by example has been elevated by the inclusion of Public Bodies Duties in the Climate Change (Scotland) Act and the Scottish Government is developing guidance to assist public bodies in complying with their duties which commence on 1 January 2011. A new Public Sector Climate Action Group was established, jointly chaired by the Minister for Climate Change and COSLA's Spokesperson for Regeneration and Sustainable Development, to lead Scotland's public sector in meeting Scotland's climate change ambitions. Chapter 10 provides further background on this.

### **2.6 Business role**

The business sector in Scotland has been generally pro-active in recognising the role they have to play in contributing to emission reductions in Scotland. The formation of the new 2020 Climate Group, which is comprised of several key business figures, was welcomed by Scottish Ministers. Further achievements in this sector are outlined in Chapter 8.

## 2.7 Adaptation

Scotland launched the first Climate Change Adaptation Framework in December 2009. In releasing this framework, the Scottish Government is taking a coordinated, strategic lead and is challenging all sectors to take action to capitalise on the opportunities and adapt to the negative consequences from climate change.

## 2.8 Key climate change publications in 2009-10:

A number of publications and consultations related to climate change were issued during 2009-10. Some of the key documents shaping the Scottish Government strategic response to climate change include:

- Scottish Government Climate Change Delivery Plan, June 2009<sup>4</sup>
- Climate Change (Scotland) Act 2009, June 2009<sup>5</sup>
- Conserve and Save: A Consultation on the Energy Efficiency Action Plan for Scotland<sup>6</sup>
- Environmental and Clean Technologies Action Plan 2009/10, September 2009<sup>7</sup>
- Copenhagen Accord<sup>8</sup>, UNFCCC
- Scotland's path to a low-carbon economy – Committee on Climate Change, February 2010<sup>9</sup>
- Towards a Low Carbon Economy for Scotland: Scottish Government Discussion Paper, March 2010<sup>10</sup>
- Paris Statement to European Regions<sup>11</sup> (to which Scotland was a signatory)

In addition, Scotland's emissions were reported in:

- Scottish Greenhouse Gas Emissions 2007<sup>12</sup>
- Greenhouse Gas inventories for England, Scotland, Wales and Northern Ireland: 1990 – 2007, September 2009<sup>13</sup>
- End User Greenhouse Gas inventories for England, Scotland, Wales and Northern Ireland: 1990, 2003-2007, November 2009<sup>14</sup>
- Production of a Time Series of Scotland's Ecological and Greenhouse Gas Footprints, Scottish Government<sup>15</sup>

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<sup>4</sup> [www.scotland.gov.uk/publications/2009/06/18103720/0](http://www.scotland.gov.uk/publications/2009/06/18103720/0)

<sup>5</sup> [http://www.opsi.gov.uk/legislation/scotland/acts2009/pdf/asp\\_20090012\\_en.pdf](http://www.opsi.gov.uk/legislation/scotland/acts2009/pdf/asp_20090012_en.pdf)

<sup>6</sup> <http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Action/energy-efficiency-policy/ActionPlan>

<sup>7</sup> <http://www.scotland.gov.uk/Topics/Business-Industry/Energy/ECTActionPlan>

<sup>8</sup> <http://unfccc.int/home/items/5262.php>

<sup>9</sup> <http://www.theccc.org.uk/reports/scottish-report>

<sup>10</sup> <http://www.scotland.gov.uk/Publications/2010/03/22110408/9>

<sup>11</sup> <http://www.theclimategroup.org/our-news/news/2010/3/4/paris-statement-of-european-regions/>

<sup>12</sup> <http://www.scotland.gov.uk/Publications/2009/09/07145629/0>

<sup>13</sup> <http://www.naei.org.uk/reports.php>

<sup>14</sup> <http://www.naei.org.uk/reports.php>

<sup>15</sup> <http://www.scotland.gov.uk/Publications/2009/10/28101012/0>

### **3. Climate Change (Scotland Act) 2009**

The Climate Change (Scotland) Act 2009 received Royal Assent on 4 August 2009, following a comprehensive period of Parliamentary scrutiny and amendment during the Bill process. On June 24, 2009 the Bill was passed unanimously by members of the Scottish Parliament.

The Act is a key commitment of the Scottish Government, and is the most far-reaching environmental legislation considered by the Parliament during the first ten years of devolution.

Reducing greenhouse gas emissions and transitioning to a low carbon economy is a key action in contributing to the Scottish Government's Purpose to create a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth.

The full text of the Act is available on the Office of Public Sector Information website, along with explanatory notes which help place the effect of the Act in context.

- Part 1 of the Act, creates the statutory framework for greenhouse gas emissions reductions in Scotland by setting an interim 42% reduction target for 2020 and an 80% reduction target for 2050. To help ensure the delivery of these targets, this part of the Act also requires that the Scottish Ministers set annual targets, in secondary legislation, for Scottish emissions from 2010 to 2050.
- The Scottish Ministers will take advice on the targets they set. In the first instance this advice will be provided by the UK Committee on Climate Change. However, Part 2 of the Act contains provisions which will allow the Scottish Ministers to establish a Scottish Committee on Climate Change or to designate an existing body to exercise advisory functions should it be decided that this is appropriate.
- Part 3 places duties on the Scottish Ministers requiring that they report regularly to the Scottish Parliament on Scotland's emissions and on the progress being made towards meeting the emissions reduction targets set in the Act.
- Part 4 places climate change duties on Scottish public bodies. This Part also contains powers to enable the Scottish Ministers, by order, to impose further duties on public bodies in relation to climate change.
- The Act includes other provisions on climate change in Part 5, including adaptation, forestry, energy efficiency and waste reduction.
- Public engagement is a significant feature of Part 6 of the Act, which also includes provision on carbon assessment.

In summary, the Climate Change (Scotland) Act 2009 sets a world-leading level of ambition, including:

- All internationally recognised greenhouse gases
- Emissions from international aviation and international shipping
- System of annual targets for cuts in emissions

- Interim target of at least 42% emissions cuts by 2020, compared to 1990-95 international baseline (1990 for carbon dioxide, methane and nitrous oxide and 1995 for the fluorinated gases).
- Target of at least 80% cuts in emissions by 2050
- Duties on Scottish public bodies to contribute to the Act's targets and to any statutory adaptation programme
- Requirement to publish a public engagement strategy
- Accounting for trading in the EU Emissions Trading Scheme

## **4. Framework and Targets**

### **4.1 Overview**

Climate change is a global issue requiring global solutions. Scotland is a small country with around 0.08% of the world's population. However, Scotland produces an estimated 0.2% of the world's greenhouse gas emissions. In addition to emissions produced in Scotland, consumption in Scotland has the effect of causing emissions to be released in other countries which produce the products we buy. As a developed nation, the Scottish Government recognises the need for Scotland to lead by example by showing how to reduce emissions and move towards a low carbon economy. The Climate Change (Scotland) Act is an example of world-leading legislation which can act as an example of best practice to other countries.

### **4.2 United Nations**

#### **Copenhagen Summit / Copenhagen Accord**

The Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) took place in Copenhagen in December 2009. This was the largest climate change gathering ever to take place which raised the profile of the issue significantly. However, the aim to negotiate a successor to the Kyoto Protocol was not fulfilled at the summit. The Copenhagen Accord<sup>16</sup> was, instead, the main outcome of the negotiations. The European Union has indicated its support for the Copenhagen Accord.

Although the Copenhagen conference did not deliver the hoped for level of commitments to emission cuts or a timetable for a new legally-binding international treaty, the UN has reported that around 100 out of 192 countries in the UNFCCC, accounting for over 80% of global emissions, now support the Accord which aims to limit global temperature rise to less than 2°C.

The First Minister and the Minister for Transport, Infrastructure and Climate Change represented Scotland in Copenhagen during the conference to promote Scotland's world-leading targets set out in the Climate Change (Scotland) Act 2009.

Whilst at the Copenhagen summit, the First Minister signed a joint statement with the President of the Maldives<sup>17</sup>. This marked the commitment of both countries to share technology and research, forming a partnership between Scotland and The Maldives – a country which is particularly vulnerable to rising sea levels through global warming.

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<sup>16</sup> <http://unfccc.int/home/items/5262.php>

<sup>17</sup> <http://www.scotland.gov.uk/News/Releases/2009/12/15141113>

The First Minister also addressed the Climate Group Climate Leaders Summit of over 60 state and regional government ministers as well as business leaders from across the world. Other speakers included: Helen Clark, Head of the UN Development Programme, representing the UN Secretary-General; the President of the Maldives; the Governors of Wisconsin, Washington and Sao Paulo; the Presidents of Catalonia and Ile-de-France; the Premiers of Quebec, British Columbia, Manitoba and South Australia; the First Minister of Wales and Prince Albert II of Monaco.

The Minister for Transport, Infrastructure and Climate Change hosted Scotland's Low Carbon Mission event in Copenhagen, with keynote speaker Mary Robinson, former UN Human Rights Commissioner.

### **The Climate Group**

The Scottish Government became a full member of the Climate Group in November 2009<sup>18</sup>. The Climate Group is a highly influential organisation which focuses on developing and sharing expertise on developing a low carbon economy.

### **One Billion Trees Initiative**

At the Climate Group's Climate Leaders summit in Copenhagen, State and Regional government leaders committed to collectively planting 1 billion trees by 2015 as an endowment for the environment, with the aim of persuading national governments, businesses and communities to join the initiative and plant a tree for every one of the 7 billion people on the planet. Scotland has pledged to plant 100 million trees by 2015 as part of this commitment.

## **4.3 European Union**

The EU has committed to a 20% emissions cut below 1990 levels by 2020, and to scaling up this reduction to 30% if other major economies agree to do their fair share of the global effort. In this respect, the EU considers the Copenhagen Accord as a first step towards a legally binding global climate agreement. The Accord endorses the EU's core objective of keeping global warming below 2°C above the pre-industrial temperature in order to prevent the worst impacts of climate change.

The European Commission has set out a strategy to help maintain the momentum of global efforts to tackle climate change. The Communication *International climate policy post-Copenhagen: Acting now to reinvigorate global action on climate change*<sup>19</sup>, adopted on 9 March, proposes that the EU swiftly begin implementing last December's Copenhagen Accord, in particular 'fast start' financial assistance to developing countries. In parallel the EU should continue to press for a robust and legally binding global agreement

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<sup>18</sup> <http://www.scotland.gov.uk/News/Releases/2009/11/04104957>

<sup>19</sup> [http://ec.europa.eu/environment/climat/future\\_action\\_com.htm](http://ec.europa.eu/environment/climat/future_action_com.htm)

that involves all countries in real climate action. This will require integrating the Copenhagen Accord into the UN negotiations and addressing the weaknesses in the Kyoto Protocol. Active outreach by the EU will be key to promoting support for the UN negotiations and the Commission will undertake this effort in close contact with the Council and with the support of the European Parliament.

The Scottish Government continues to press for a move to the 30% EU target. Scottish Ministers wrote to the new European Commissioner for Climate Action, Connie Hedegaard, when she took up post in February 2010 to that effect.

The Climate Group and some of Europe's most powerful regional governments sent a joint statement<sup>20</sup> to EU leaders on 4<sup>th</sup> March 2010 to warn that more ambitious EU climate and energy policies will be essential to powering Europe's future competitiveness, growth and jobs.

#### **4.4 United Kingdom**

The UK has both international (Kyoto Protocol) and domestic (UK Climate Change Act) targets to reduce greenhouse gas emissions. Detail of the UK's performance against these emissions targets can be found on the Department of Energy and Climate change website<sup>21</sup>. The UK is on target to exceed the emissions reduction target of 12.5% set out in the Kyoto Protocol and the Scottish Government is committed to working with UK Government to achieve this.

The Scottish Government is a partner with the other UK administrations in the Climate Change Act 2008<sup>22</sup>. The interim target in the Climate Change (Scotland) Act to reduce emissions by at least 42% in 2020 (relative to 1990) is more ambitious than the currently legislated UK target of 34%. There are a number of other areas of difference between the two legislative frameworks e.g.

- The Scottish Act includes emissions from international aviation and international shipping.
- The UK framework sets carbon budgets covering 5 year periods whereas the Scottish framework is based on annual targets.
- The UK framework allows borrowing of up to 1% of emissions from the next budget period whereas the Scottish framework does not allow borrowing of emissions from future periods.
- The UK framework allows the purchase of credits to meet carbon budgets (subject to advice from the CCC). The Scottish framework puts a limit of 20% of emissions reduction effort to be provided by credits.

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<sup>20</sup> <http://www.theclimategroup.org/our-news/news/2010/3/4/paris-statement-of-european-regions/>

<sup>21</sup> [http://www.decc.gov.uk/en/content/cms/statistics/climate\\_change/gg\\_emissions/targets/targets.aspx](http://www.decc.gov.uk/en/content/cms/statistics/climate_change/gg_emissions/targets/targets.aspx)

<sup>22</sup> [http://www.opsi.gov.uk/acts/acts2008/ukpga\\_20080027\\_en\\_1](http://www.opsi.gov.uk/acts/acts2008/ukpga_20080027_en_1)

## 4.5 Scotland

Scottish Ministers are committed to realising the economic and employment opportunities presented by the low carbon economy, and are determined for Scotland to act as a responsible nation in the world. Moving towards a low carbon economy will help Scotland play a leading role in the international effort to limit the worst impacts of climate change, and provide a secure future and sustainable lifestyle for future generations.

The Climate Change (Scotland) Act requires that advice is requested from the Committee on Climate Change (CCC) on a range of issues, including relating to regulations required by the Act: the highest achievable target for 2020; the level of annual targets for 2010-22; the appropriate limit on use of carbon units; and the methodology for inclusion of Scotland's share of international aviation and international shipping emissions.

Mr Stevenson wrote to Lord Turner, Chair of the CCC, on 31 August 2009 to formally request this advice. The advice was published by the CCC on 24 February 2010<sup>23</sup>.

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<sup>23</sup> <http://www.theccc.org.uk/reports/scottish-report>

## 5. Emission Trends

- 5.1 Scottish greenhouse gas emissions are published annually on the Scottish Government website<sup>24</sup>. These figures are based on the Greenhouse Gas Inventory produced by AEA Technology and are presented both by source and by gas. Scotland's emissions in 2007 were 19.2% lower than our international baseline in 1990-95 (56.6 Mt CO<sub>2</sub>e in 2007, compared to 70.0 Mt CO<sub>2</sub>e in 1990). These figures include international aviation and shipping and include the effect of trading under the EU Emissions Trading Scheme.
- 5.2 Excluding the effect of trading under the EU Emissions Trading Scheme, in 2007, Scotland was responsible for 8% of UK net emissions.
- 5.3 Energy supply (36.2%) and Transport (25.9%) account for the biggest share of emissions. All sectors, apart from transport, have seen a reduction in emissions from the baseline year.
- 5.4 We are continuing to develop the inventory in partnership with DECC and the other Devolved Administrations to improve our estimation methods.
- 5.5 The GHG footprint of Scotland (Scotland's emissions on a consumption basis rather than a production basis and excluding emissions and removals due to land use, land use change and forestry) increased by 14 % between 1992 and 2006. The per capita footprint follows a very similar pattern, rising from 14.7 tCO<sub>2</sub>e per capita in 1992 to 16.7 tCO<sub>2</sub>e per capita in 2006. If all of the world's GHG emissions (using the 2005 figures) were allocated equally across the world's population each person would have a GHG footprint of just below 6.4 tCO<sub>2</sub>e.

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<sup>24</sup> <http://www.scotland.gov.uk/Publications/2009/09/07145629/7>

Table 1.

<b>Scottish Greenhouse Gas Emissions, Base Year-2007 adjusted for trading in the EU Emissions Trading Scheme</b>															
															Million tonnes carbon dioxide equivalent
		1990 Base Year	1990	1995	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
<b>Net Scottish emissions</b>	Emissions (including net emissions/removals from LULUCF and including emissions from international aviation and shipping)	70.01	69.89	67.70	67.64	63.03	65.42	64.82	60.88	60.37	58.36	57.39	61.03	56.90	
<b>EU ETS</b>	Net purchases/(sales) by Scottish installations											(0.58)	3.96	0.50	
	Scottish share of net purchases/(sales) by UK Government											(0.18)	(0.18)	(0.18)	
	<b>Net Scottish purchases/(sales)</b>											<b>(0.76)</b>	<b>3.78</b>	<b>0.32</b>	
<b>With allowance for EU ETS</b>	Emissions (including net emissions/removals from LULUCF and including emissions from international aviation and shipping)	70.01	69.89	67.70	67.64	63.03	65.42	64.82	60.88	60.37	58.36	58.15	57.25	56.59	
	Percentage change from baseline			-3.3%	-3.4%	-10.0%	-6.6%	-7.4%	-13.0%	-13.8%	-16.6%	-16.9%	-18.2%	-19.2%	
Source: AEA, Department of Energy and Climate Change, Environment Agency, Scottish Environment Protection Agency.															
<b>Notes:</b>															
Base year consists of emissions of CO <sub>2</sub> , CH <sub>4</sub> and N <sub>2</sub> O in 1990, and of HFCs, PFCs and SF <sub>6</sub> in 1995.															
Net purchase/sales is the difference between units allocated and units surrendered.															

Table 2.

**Scottish Greenhouse Gas Emissions, Base Year and 2007 (not adjusted for trading in the EU Emissions Trading Scheme)**

Sector	Baseline (1990-95) Mt CO <sub>2</sub> e	2007 Mt CO <sub>2</sub> e	Change (Baseline to 2007) Mt CO <sub>2</sub> e	Change (Baseline to 2007) %	% of Scottish net emissions 2007	% of UK 2007
<b>Energy Supply</b>	22.35	<b>20.59</b>	0.00	-7.8%	<b>36.2%</b>	9%
<b>Transport (incl international aviation and shipping*)</b>	13.21	<b>14.73</b>	0.00	11.5%	<b>25.9%</b>	8%
<b>Business &amp; Industry</b>	12.46	<b>7.68</b>	0.00	-38.3%	<b>13.5%</b>	7%
<b>Agriculture</b>	9.72	<b>7.69</b>	0.00	-20.9%	<b>13.5%</b>	16%
<b>Residential</b>	7.79	<b>7.20</b>	0.00	-7.6%	<b>12.7%</b>	9%
<b>Waste Management</b>	5.77	<b>2.64</b>	0.00	-54.2%	<b>4.6%</b>	12%
<b>Public</b>	1.24	<b>0.81</b>	0.00	-34.7%	<b>1.4%</b>	8%
<b>Land Use, Land Use Change and Forestry**</b>	-2.52	<b>-4.44</b>	0.00	76.4%	<b>-7.8%</b>	249%
<b>Total Scottish net emissions</b>	<b>70.01</b>	<b>56.90</b>	<b>-0.01</b>	<b>-18.7%</b>	<b>100.0%</b>	<b>8%</b>

Source: AEA - 2007 GHG inventory for England, Scotland, Wales and Northern Ireland.

**Notes:**

Base year consists of emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O in 1990, and of HFCs, PFCs and SF<sub>6</sub> in 1995.

\*Emissions from international aviation and shipping are recorded as memo items in the UK GHG inventory.

\*\*Net emissions from land use, land use change and forestry are negative.

## SECTOR AND ISSUE REPORTS

### 6. Energy Supply

#### 6.1 Emissions from energy supply

Energy supply in Scotland was responsible for emissions of 20.59 Mt CO<sub>2</sub>e in 2007, which is 36.2% of the Scottish total, and a reduction of 7.8% since the baseline year. Within the energy supply sector emissions rose by 4% from power generation but there were large falls from refining, mining, venting and flaring. Most emissions from this sector are from sites falling within the EU Emissions Trading Scheme (section 8.1).

#### 6.2 Low Carbon Economy

Scottish Ministers are committed to the low carbon economy and the world-leading targets set out in the Climate Change (Scotland) Act 2009 provide certainty for businesses and communities to plan for this. The Scottish Government discussion paper 'Towards a Low Carbon Economy for Scotland' identifies the significant changes envisaged as a result of the move towards a low carbon economy particularly in relation to renewables and Carbon Capture and Storage (CCS). Both these sectors involve emerging technologies and markets that could lead to considerable economic benefits for Scotland.

#### 6.3 Renewables targets

Scotland is currently committed to achieving a headline target of 20% of total Scottish energy use coming from renewable sources by 2020. Individual targets on renewable electricity, heat and transport fuels have been put in place :

- **Electricity:** Achieve 50% of gross electricity consumption from renewable sources by 2020, with an interim target of 31% by 2011. The 2011 milestone for renewable electricity generation equates to around 5 GW of installed renewable generation capacity. This target is one of the Scottish Government National Indicators and is reported on annually by the Scottish Government. Current performance against this indicator stands at 22%, based on 2008 electricity generation statistics.
- **Transport:** to achieve a 10% target for renewable transport fuels by 2020, in line with mandatory 10% EU target set for each Member State.
- **Heat:** A target has been set at 11% of heat energy to be supplied from renewable sources by 2020. Currently Scotland sources 1.4% of its heat demand from renewable sources<sup>25</sup>. The Scottish Government is working to develop a method for monitoring and reporting against this target, which is envisaged will be informed by the development and rollout of the Renewable Heat Incentive across the UK.

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<sup>25</sup> Renewable Heat In Scotland, Sustainable Development Commission (SDC), July 2009  
<http://www.sd-commission.org.uk/publications.php?id=1015>

## **6.4 Renewables Action Plan / Renewable Heat Action Plan**

The Scottish Government's Renewables Action Plan was published in July 2009 and outlines the collective actions which can make Scotland a European leader in renewable energy. The Action Plan sets out route maps for technologies and covers cross-cutting issues such as skills, infrastructure and research and development, all focused on helping to achieve Scotland's renewable targets.

Publication of the Renewable Heat Action Plan in November 2009 fulfilled another requirement of the Climate Change (Scotland) Act. The Action Plan outlines measures designed to help Scotland meet its target of 11% of heat coming from renewable sources by 2020. It sets out the ways that government can work with partners to achieve a comprehensive renewable heat delivery infrastructure, coupled with a supportive policy and regulatory framework.

## **6.5 Beaully to Denny powerline upgrade**

In January 2010 the Scottish Government announced the approval of applications to upgrade the overhead power lines from Beaully to Denny<sup>26</sup>. This upgrade will boost grid capacity along the line and help to unlock Scotland's onshore and offshore renewables potential. Extensive conditions have been imposed to protect the interests of communities and minimise the impact on the environment along the line.

## **6.6 Offshore electricity transmission**

In January 2010, the Scottish Government, in conjunction with the Northern Ireland Assembly Government and the Government of Ireland, announced the launch of a feasibility study into an offshore electricity network linking Scotland, Northern Ireland and Ireland<sup>27</sup>. The development of an offshore grid would help to realise the potential of Scotland's huge wind, wave and tidal resources.

## **6.7 Carbon Capture and Storage**

Carbon Capture and Storage will have an important role to play in reducing Scotland's greenhouse gas emissions over the medium to long term. In March 2010 the Scottish Government, together with Scottish Enterprise published a Carbon Capture and Storage roadmap. This sets out a vision of CCS becoming a mainstay of Scotland's future energy supply and a vital economic sector.

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<sup>26</sup> [www.scotland.gov.uk/topics/business-industry/energy/infrastructure/energy-consents/beaully-denny-index](http://www.scotland.gov.uk/topics/business-industry/energy/infrastructure/energy-consents/beaully-denny-index)

<sup>27</sup> [www.scotland.gov.uk/news/releases/2010/01/08101417](http://www.scotland.gov.uk/news/releases/2010/01/08101417)

The Scottish Government also announced its position on coal fired power stations in November 2009, which aligns with UK Government policy, as follows:

- Any new coal plant will need to demonstrate CCS on a minimum of 300 MW (net) from day one of operation.
- Full CCS on further new builds from 2020 from day one.
- Rolling review of technical and economic viability of CCS will take place with the aim of making a decision on retro-fitting by 2018 with the likelihood of existing plants being retro-fitted by 2025.

## **6.8 Scottish Low Carbon Investment Project**

The Scottish Government is leading work on the Low Carbon Investment Project to attract international investment liquidity into Scottish low carbon projects. The project will involve an assessment of both the low carbon investment opportunities across the public and private sectors in Scotland and the appetite among the international investment community to invest in these projects.

The project will culminate with an international conference on 28/29 September 2010 bringing together leading players from the energy industry and finance community.

## **6.9 Key achievements 2009-10:**

### **Publications**

- Renewables Action Plan<sup>28</sup> - published on 1<sup>st</sup> July 2009 (update on progress<sup>29</sup> published on 1<sup>st</sup> Feb 2010);
- Renewable Heat Action Plan<sup>30</sup> – published 5 November 2009;
- Energy Efficiency Action Plan – published ‘Conserve and Save’<sup>31</sup> for consultation on 8<sup>th</sup> October 2009;
- Marine Energy Road Map – published 26<sup>th</sup> August 2009<sup>32</sup>
- CCS Roadmap for Scotland<sup>33</sup> - published on 10<sup>th</sup> March 2010
- National Renewables Infrastructure Plan Stage 1 (led by Scottish Enterprise) – published on 4 February 2010<sup>34</sup>
- Saltire Prize Final Guidelines - published on 23<sup>rd</sup> March 2010<sup>35</sup>

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<sup>28</sup> [www.scotland.gov.uk/publications/2009/07/06095830/0](http://www.scotland.gov.uk/publications/2009/07/06095830/0)

<sup>29</sup> [www.scotland.gov.uk/publications/2010/01/28112033/5](http://www.scotland.gov.uk/publications/2010/01/28112033/5)

<sup>30</sup> [www.scotland.gov.uk/publications/2009/11/04154534/0](http://www.scotland.gov.uk/publications/2009/11/04154534/0)

<sup>31</sup> [www.scotland.gov.uk/topics/business-industry/energy/action/energy-efficiency-policy/actionplan](http://www.scotland.gov.uk/topics/business-industry/energy/action/energy-efficiency-policy/actionplan)

<sup>32</sup> <http://www.scotland.gov.uk/Publications/2009/08/14094700/0>

<sup>33</sup> [www.scotland.gov.uk/topics/business-industry/energy/infrastructure/energy-consents/thermal-guidance/ccs-roadmap](http://www.scotland.gov.uk/topics/business-industry/energy/infrastructure/energy-consents/thermal-guidance/ccs-roadmap)

<sup>34</sup> <http://www.scottish-enterprise.com/nationalrenewablesinfrastructureplan.pdf>

<sup>35</sup> <http://www.scotland.gov.uk/Publications/2010/03/23084824/0>

## **Funding / subsidy**

- Saltire Prize (launched in December 2008) – £10 million innovation prize for marine & tidal energy. Saltire Prize has already attracted 146 Registrations of Interest from 29 countries across the world.
- Introduced (in June 2009) the UK's most generous support for commercially deployed marine renewable energy projects (5 ROCs wave/3 ROCs tidal).
- Provided over £3M grant support under the Scottish Biomass Heat Scheme for installations in SMEs and for district heating. To date we have approved grants for 58 projects.
- Increased support for biomass CHP and anaerobic digestion to 2 ROCS per unit of output under the Renewables Obligation (Scotland).
- The Scottish Government announced in March 2010 a new £12M fund to support the wave and tidal sector<sup>36</sup>. The Wave and Tidal Energy: Research, Development and Demonstration Support fund – known as WATERS – will support the testing of new wave and tidal prototypes in the seas around Scotland. The fund is administered by Scottish Enterprise.

## **Other**

- Offshore Valuation Study – jointly funded and informed the development of the Public Interest Research Centre (PIRC) led Offshore Valuation study, which was published in May 2010<sup>37</sup>.
- Grid Access Reform – working with DECC as part of the reform of Grid access for new renewable projects launched on 25<sup>th</sup> August 2009;
- Plans to upgrade energy transmission and distribution infrastructure to meet the challenges of the low carbon economy.
- Approval of applications to upgrade Beaully to Denny powerlines – January 2010.
- Scottish Energy Advisory Board (SEAB) established in May 2009. Chaired by the First Minister, the Board will enable high-level engagement between Ministers, the energy industry and other relevant bodies on the key issues facing the energy sector in Scotland.
- Alongside the SEAB are 3 themed Advisory Groups, co-chaired by the Minister for Enterprise, Energy and Tourism with representatives from industry, public sector and academia. The Forum for Renewable Energy Development in Scotland (FREDS) will continue as the Renewables themed group, while new bodies have been established for Oil & Gas and Thermal Power respectively.

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<sup>36</sup> <http://www.scottish-enterprise.com/your-sector/energy/energy-support/energy-funding/energy-grants/Wave-and-Tidal-Energy-Fund.aspx>

<sup>37</sup> <http://www.offshorevaluation.org/>

- Established a Renewable Heat Implementation Group under the Forum for Renewable Energy Development in Scotland to drive progress.
- Worked with the industry-led Marine Energy Group to develop a Road Map for Marine Renewables. The Road Map sets out the aspirations for the sector, a clear action plan and priority recommendations aimed at delivering up to 2 GW of marine energy by 2020 and potentially creating investment of £2.4bn and 5,300 retained jobs in Scotland.
- August 2009 - Scottish European Green Energy Centre in Aberdeen officially opened by First Minister<sup>38</sup>
- Clean energy Memorandum of Understanding signed between Governments of Scotland and India to boost collaboration between Scottish and Indian Universities and research institutes<sup>39</sup>.
- January 2010 - The First Minister supported The Crown Estate in announcing the successful developers from their Offshore Wind Leasing, for the two Scottish Round 3 Zones. The chosen consortia will take forward a proposed 4.8 GW of capacity.
- John Swinney video message introduced a series of well attended offshore wind supply chain 'share fair' events led by The Crown Estate, HIE and Scottish Enterprise in January and February 2010. Events aimed at encouraging Scottish businesses to seize the opportunities offered by the emerging offshore wind industry.
- Since June 2009 Scottish Ministers have given consent to seven applications for new or extended wind power developments, and four hydro schemes with a combined electricity generation capacity of 480.3 MW. Details of all energy consent applications are available on the Scottish Government website<sup>40</sup>.
- March 2010 – The First Minister supported The Crown Estate in announcing the successful bidders in the Pentland Firth and Orkney Waters leasing round – the world's first commercial leasing round for wave and tidal energy. 10 project agreements signed with potential installed capacity of up to 1.2 GW.
- Established the Offshore Wind Industry Group (OWIG) which represents all the developer consortia involved in Round 3 and Scottish Territorial Waters leasing rounds. The Group is co-chaired Scottish Government and ScottishPower Renewables and serves as the main conduit for industry intelligence on key issues.

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<sup>38</sup> <http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Action/leading/Energy-In-Europe/SEGEC>

<sup>39</sup> <http://www.scotland.gov.uk/News/Releases/2009/10/14102543>

<sup>40</sup> [www.scotland.gov.uk/topics/business-industry/energy/infrastructure/energy-consents/applications-database](http://www.scotland.gov.uk/topics/business-industry/energy/infrastructure/energy-consents/applications-database)

- Appointed Sandy Cumming, former Chief Executive of Highlands & Islands Enterprise (HIE) as Offshore Energy Partnership Director. His role will be to co-ordinate offshore energy policy across the public sector in Scotland. Sandy will chair the newly established Offshore Energy Programme Board (a sub-group of the Energy Advisory Board).
- Accompanying the launch of the Saltire Prize Guidelines (March 2010), The Crown Estate set out plans to open a further Scottish Leasing Round to support potential Saltire Prize competing projects. Proposed areas for lease opened for short period of informal consultation. Announcements made by Jim Mather at Scottish Renewables Conference.

## 7. Energy Efficiency

### 7.1 Energy Efficiency Action Plan

The Scottish Government published 'Conserve and Save: a Consultation on the Energy Efficiency Action Plan for Scotland'<sup>41</sup> on 8 October 2009. This covered a wide range of policy areas, including energy efficiency in domestic, business and public sector buildings, transport, infrastructure for the built environment, and issues of behavioural change, skills, and finance. The consultation closed in January 2010, an analysis of responses was published in March 2010, and the action plan is due to be published in autumn 2010.

The Scottish Energy Efficiency Action Plan fulfils one of the ten pledges on energy policy that Scottish Ministers announced in February 2009.<sup>42</sup> Pledge 7, promising to 'implement measures to improve Scotland's energy use through the Energy Efficiency Action Plan', is reaffirmed in the Climate Change (Scotland) Act. This contains a provision for Scottish Ministers to prepare and publish a plan for (a) promoting energy efficiency; and (b) improving the energy efficiency of living accommodation in Scotland. By October 2010, the plan will set annual energy efficiency targets and describe how those targets are to be reported on.

The Consultation on the Action Plan, published in October, was a comprehensive document that brought together in one place the wide range of existing activity, together with proposals to improve and increase the effectiveness of that activity. Building on this, the Action Plan will outline:

- the urgent need for energy efficiency and how it helps us to achieve a number of our objectives across Scottish Government, including the links to the Report on Proposals and Policies (RPP) and other policies and plans;
- our work to develop energy efficiency targets for Scotland;
- our ongoing work to influence attitudes and behaviours;
- current large-scale activity and proposed actions across individual sectors (housing; non-domestic buildings and processes; the public sector estate; wider infrastructure relating to the built environment, including heat, water and planning; and transport);
- the opportunities for business;
- work across skills and finance;
- how we will take forward the plan, including partnership working and stakeholder engagement.

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<sup>41</sup> [www.scotland.gov.uk/topics/business-industry/energy/action/energy-efficiency-policy/actionplan](http://www.scotland.gov.uk/topics/business-industry/energy/action/energy-efficiency-policy/actionplan)

<sup>42</sup> <http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Action/economic-recovery>. The set of energy pledges forms a coherent approach to energy issues in Scotland, addressing short- and longer-term opportunities, and focusing on both contributing to economic recovery and growth and addressing climate change.

## **7.2 Emissions from domestic sector**

Chapters 6 and 7 of the Consultation on an Energy Efficiency Action Plan focus on issues related to Scotland's homes. A range of activity to improve the energy efficiency of our homes continued through 2009-10 through programmes covering support, incentives, research and finance, with the role of regulation now also under consideration. The Scottish Government's recently published Housing Policy Reform discussion paper, *Housing : Fresh Thinking, New Ideas* will also take this debate to housing agencies and other stakeholders. As well as reducing greenhouse gas emissions, improving domestic energy efficiency will also help to reduce fuel poverty and household fuel bills; while sustaining and creating a significant number of jobs.<sup>43</sup>

## **7.3 Revised Building Standards for new builds**

Following full public consultation carried out in summer 2009, the Building (Scotland) Amendment Regulations 2010 were laid in Parliament on 10 February 2010 and come into force on 1 October 2010. This timing gives industry 6 months to adjust to the changes. These regulations and associated guidance require that new build homes and new non-domestic buildings must be more energy efficient, have greater sound insulation and better levels of home security.

The enhanced energy standards will enable a reduction in CO<sub>2</sub> emissions of 30% on 2007 standards and of 70% compared to those that existed in 1990.

## **7.4 Assessment of energy performance and emissions of domestic and non-domestic buildings**

Section 63 of the Climate Change (Scotland) Act requires that the Scottish Ministers make regulations providing for the assessment of the energy performance and greenhouse gas emissions of existing non-domestic buildings. Initially, owners of non-domestic buildings will be encouraged to improve their buildings in line with steps outlined in these assessments. However, improvement measures will eventually be required in order to create a 'level playing field'. The passage of the Climate Change (Scotland) Act also introduced similar powers for improving the energy efficiency of domestic buildings. Options for the use of these powers were consulted on in 'Conserve and Save'.

There is no statutory deadline by which these regulations have to be made. However, the Act requires that the Scottish Ministers report on when they intend to make provision in respect of relevant sections of the legislation by the end of March 2011.

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<sup>43</sup> See *Towards a Low Carbon Economy for Scotland: Discussion Paper* (<http://www.scotland.gov.uk/Publications/2010/03/22110408/9>).

## **7.5 Home Insulation Scheme**

During 2009-10, the first phase of the Home Insulation Scheme was implemented. This is an area-based initiative supported by £15m of Scottish Government funding aimed at reducing greenhouse gas emissions and tackling fuel poverty by offering energy advice and low-cost or free energy efficiency measures to every household in an area. 95,200 houses were initially targeted in 10 areas across Scotland. This led to engagement with households resulting in 47,400 Home Energy Checks, with many households being referred for measures such as loft and cavity wall insulation, where their homes are suitable. Households assessed as being vulnerable to fuel poverty are referred to the Energy Assistance Package (EAP) for further support. The Energy Saving Trust is the managing agent for the scheme, working with local authorities and other agencies as appropriate. Extensions to these initial areas have been announced.

## **7.6 Report on the Scottish civil estate**

Section 76 of the Climate Change (Scotland) Act requires that the Scottish Ministers, in respect of each financial year, beginning with 2010-11, lay before the Scottish Parliament a report containing an assessment of the progress towards improving the efficiency and the contribution to sustainability of buildings that are part of the civil estate in Scotland. The deadline for the first of these reports is 31 October 2011.

## **7.7 Permitted development rights**

### **Section 70**

A commitment to introduce permitted development rights for domestic microwind turbines and air source heat pumps was achieved on time (5 February 2010) by way of a consultation<sup>44</sup>, laying of an Order<sup>45</sup> and support by an explanatory Circular<sup>46</sup>.

In recognition of the fact that we can go further, a second consultation<sup>47</sup> was launched on 5 February 2010 and the responses are to be analysed by the end of July before next steps are taken.

### **Section 71**

We have published our initial proposals on non-domestic microgeneration<sup>48</sup>.

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<sup>44</sup> <http://www.scotland.gov.uk/Publications/2010/01/14153239/0>

<sup>45</sup> [http://www.opsi.gov.uk/legislation/scotland/ssi2010/ssi\\_20100027\\_en\\_1](http://www.opsi.gov.uk/legislation/scotland/ssi2010/ssi_20100027_en_1)

<sup>46</sup> <http://www.scotland.gov.uk/Publications/2010/03/05114236/0>

<sup>47</sup> <http://www.scotland.gov.uk/Publications/2010/02/05083644/0>

<sup>48</sup> <http://www.scotland.gov.uk/Publications/2010/06/01094402/2>

The proposals are subject to strategic environmental assessment and an environmental report is currently with the consultation authorities. We shall be undertaking face-to-face interviews with manufacturers and installers to fulfil Business and Regulatory Impact Assessment requirements during June. A full public consultation is expected to commence in July 2010.

## **7.8 Development Plans**

### **Section 72**

By way of piloting proposals to fulfil section 72, we are discussing how building standards and the planning system can secure a way in which local development plans can include policies for buildings on low and zero carbon generating technologies with Aberdeen City Council.

### **7.9 Key achievements 2009-10:**

- Climate Change (Scotland) Act – energy efficiency requirements, including enabling powers for regulation of energy efficiency in existing buildings; duties of local councils to establish energy efficiency discount schemes.
- Oct 2009 – Scottish Government launched the £2m Energy Saving Scotland home loans pathfinder scheme, offering householders interest free loans of up to £10,000 for energy efficiency and renewable energy measures.
- The Scottish Government published ‘Conserve and Save: a Consultation on the Energy Efficiency Action Plan for Scotland’ on 8 October 2009.
- First phase of the Scottish Government’s Home Insulation Scheme targeted 95,200 households in 10 areas resulting in 47,400 home energy checks and many referrals for energy efficiency measures.
- Feb 2010 Budget Bill - announced funding for area-based home insulation schemes<sup>49</sup> to be increased from £15million to £25million, including £10 million for a new universal access scheme offering free insulation to around 90,000 homes.
- Feb 2010 Budget Bill – committed £2 million for 2010-11 for a Scottish boiler scrappage scheme. This will offer up to 5,000 homeowners a £400 grant towards replacing a G-rated boiler with a highly energy efficient model.
- Commitment to introduce permitted development rights for domestic microwind turbines and air source heat pumps achieved on time.
- Scottish Government invests around £10 million annually in the work of both the Carbon Trust and the Energy Saving Trust in Scotland. These organisations work with householders and the public and private sectors to achieve the sustainable use of energy and cut carbon emissions. Initiatives include the Energy Saving Scotland home

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<sup>49</sup> [www.scotland.gov.uk/topics/built-environment/housing/quality/his/universal-scheme](http://www.scotland.gov.uk/topics/built-environment/housing/quality/his/universal-scheme)

renewables grant scheme, Energy Saving Scotland home loans and Energy efficiency design awards.

- The Building (Scotland) Amendment Regulations 2010 were laid in February 2010<sup>50</sup>.
- Launch of the Housing Energy Efficiency Learning Network, which is a cross-Government initiative that supports housing associations and co-operatives, local authorities and developers to provide more energy efficient housing. The network gives practical help to organisations and individuals working at a local level.

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<sup>50</sup> [http://www.opsi.gov.uk/legislation/scotland/ssi2010/ssi\\_20100032\\_en\\_1](http://www.opsi.gov.uk/legislation/scotland/ssi2010/ssi_20100032_en_1)

## **8. Business and Industry**

### **8.1 EU Emissions Trading Scheme**

Energy-intensive industry is covered by the European Union Emissions Trading Scheme (ETS). In Scotland the EU ETS covers nearly 100 large industrial installations. This represents around 50% of Scotland's total CO<sub>2</sub> emissions.

### **8.2 CRC Energy Efficiency Scheme**

The CRC is a mandatory emissions trading scheme that started on 1 April 2010. It applies innovative mechanisms to overcome barriers to the uptake of energy efficiency experienced by large non-energy-intensive organisations. For example, CRC recognises that reputational drivers are as important as financial. Also it seeks to ensure that both landlords and tenants benefit from improving energy efficiency.

All organisations in the public or private sector which used at least 6,000 Mega Watt-hours of electricity through half-hourly meters during 2008 (corresponds to bill of c. £600,000) will be required to participate. SEPA expect that 200 to 250 organisations with headquarters in Scotland will participate, including banks, hotel and retail chains, manufacturers, health boards and local authorities. The threshold does not apply to central government, which is mandated to participate.

CRC participants must monitor and report on emissions from all energy sources, except those already covered by the EU ETS or Climate Change Agreements under the Climate Change Levy. Energy used for transport or domestic accommodation is also excluded. At the end of each year participants must return a quantity of electronic *allowances* equal to their emissions (one allowance is equivalent to one tonne CO<sub>2</sub>). In Phase I (2010-12) an unlimited number of allowances will be available at the start of each year in Government sales. From 2013, the number of allowances will be limited, capping emissions, and will be available through government auctions rather than sales: these allowances may be traded (bought or sold depending on how well each participant manages its emissions), and if necessary additional allowances may be purchased through the "safety valve".

### **8.3 Scottish Business in the Community / Mayday Network**

The Scottish Business in the Community Mayday network encourages businesses to make climate change pledges and take energy efficiency measures. The Network has seen a significant increase in membership from 150 in 2008-09 to over 1100 by the end of 2009-10. The funding provided for 2009-10 enabled the Network to improve their systems and create a clearer model for businesses looking to join the network and/or reduce their emissions. Building on this expanded membership and going forward SBIC

will concentrate on establishing a methodology/framework to measure emission reductions of its membership and provide reduction data by end of financial year; measure uptake in advice from signposted organisations on a quarterly basis via leadership group; and provide data to support improved access to case studies of exemplar businesses. Details of the Mayday network in Scotland can be found on Scottish Business in the Community's website<sup>51</sup>.

#### **8.4 Climate Change Business Delivery Group**

The Government is supporting the work of the Climate Change Business Delivery Group (CCBDG) which shares ideas and challenges Scottish business to do more to tackle climate change. The CCBDG has recently looked at how it could provide better support for Scottish businesses and provide strong leadership on tackling climate change. The "Future Focus" paper that was produced by the group sets out a clear range of objectives aimed at supporting and encouraging businesses by sharing experience and good practices.

#### **8.5 2020 Climate Group**

The 2020 Climate Group is a group of senior figures from the public, private and third sector in Scotland who have been convened by Ian Marchant (Chief Executive of Scottish and Southern Energy) to help contribute to the delivery of Scotland's climate change targets (particularly the 42% emissions reduction by 2020). The Group held its inaugural meeting on 8 December prior to a launch event with the First Minister at the Falkirk Wheel.

The working remit for the 2020 group is to:

- build on the work of the Climate Change Business Delivery Group and other climate change alliances to provide strong, visible leadership to Scotland's business and non-governmental communities to inspire them to do more to reduce carbon emissions.
- help drive innovation through partnerships and synergies between members.
- advise on, and aim to make early progress towards, achievement of the outcomes and targets of the Climate Change Delivery Plan.
- identify relevant action and opportunities, and collaborate, to bring benefits to the Scottish economy.
- identify where the group can best target its resources and expertise to accelerate the development, investment and action required across the following areas: Heat, Electricity, Waste, Transport, Rural land use & forestry, Consumer behaviour & attitudes.
- The group comprises of senior executives from across Scotland's business, public and private sectors including NGOs and academia. The group aims to consider how Scotland's business, voluntary and public sectors can work together to help achieve Scotland's targets and

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<sup>51</sup> [www.sbcscot.com/programmes/climate-change](http://www.sbcscot.com/programmes/climate-change)

the transformational changes required in the Scottish Government's Climate Change Delivery Plan.

- The main aim is to help ensure that all sectors of Scotland's economy and civic society contribute fully to achieving Scotland's emission reduction targets for 2020, and, where relevant, the group will seek to liaise with other groups to ensure alignment of actions and avoid duplication of effort.

## **8.6 Key Achievements 2009-10:**

- First Minister launched the 2020 Climate Group<sup>52</sup> on 8 December 2009.
- The Scottish Government provided £150,000 in 2009-10 to Scottish Business in the Community (SBIC) to support the Mayday Network in Scotland.
- Implemented the CRC Energy Efficiency Scheme Order 2010; this is a central part of climate change policy, which will deliver cost-effective emissions reductions and corresponding financial savings to participants. CRC will ensure energy efficiency in the target sector increases, contributing to ambitious climate change targets by reducing UK emissions by at least 4 Mt CO<sub>2</sub> p/a by 2020. The scheme is projected to deliver a net benefit to participants of £1 billion a year by 2020, through savings on energy bills. The Order came in to effect on 1 April 2010.
- Contributed to the continued development of the EU Emissions Trading Scheme (EU ETS) through a recent review of the Directive. Working with UK Government on applying the Scheme in an undifferentiated manner across the UK. The EU ETS is a key measure to drive ambitious carbon emissions reductions. Following EU agreement, the Directive should improve and extend the scheme from 2013 (Phase III).

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<sup>52</sup> <http://www.2020climategroup.org.uk/>

## **9. Transport**

### **9.1 Transport emissions**

Transport emissions (including international aviation and shipping) were 11.5% higher in 2007 than the baseline year. The sector accounted for 25.9% of total Scottish emissions in 2007. Meeting the challenging targets set out in the Climate Change (Scotland) Act will require a significant contribution from the transport sector.

The Climate Change Delivery Plan, published in June 2009, outlined key policy areas to enable significant reductions in transport emissions. A research study on Mitigating Transport's Climate Change Impact in Scotland (MTCCI) was commissioned to further develop our evidence of abatement measures for inclusion in the forthcoming 2010 Report on Proposals and Policies. The research report was published in August 2009<sup>53</sup>.

### **9.2 National Transport Strategy Refresh**

The National Transport Strategy (NTS), published in December 2006<sup>54</sup>, set out a twenty year vision for transport policy in Scotland and set three key strategic outcomes (KSOs):-

- reduce emissions, to tackle the issues of climate change, air quality and health improvement;
- improve journey times and connections, to tackle congestion and the lack of integration and connections in transport; and
- improve quality, accessibility and affordability, to give people a choice of public transport, where availability means better quality transport services and value for money or an alternative to the car.

These KSOs have stood up well and Scottish Ministers believe the vision within the NTS remains relevant. However, since its publication, we have seen the introduction of the Government's overarching Purpose and National Performance Framework, the Concordat between national and local government, the world-leading targets within the Climate Change (Scotland) Act 2009 and a major downturn in public expenditure.

The NTS includes a commitment to review every four years and, in the light of the changes in the policy landscape, this process is now underway. However, the focus is on updating rather than redrafting our longer-term transport policy and strategy. The review will be carried out in consultation with key stakeholders.

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<sup>53</sup> <http://www.scotland.gov.uk/Publications/2009/08/26141950/0>

<sup>54</sup> <http://www.scotland.gov.uk/publications/2006/12/04104414/0>

### 9.3 Key achievements 2009-10:

#### **Publications / consultations**

- Our commissioned research report Mitigating Transport's Climate Change Impact in Scotland (MTCCI) was published in August 2009.
- Transport Scotland published the consultation document 'Developing Rail Freight Policy in Scotland'<sup>55</sup> in November 2009 to determine the key challenges and opportunities that exist to further develop rail as a transport mode for freight.
- A single, shorter consolidated Scottish Planning Policy document was published in February 2010. This replaced the former Scottish Planning Policy series, including Planning for Transport<sup>56</sup>.
- Our Low Carbon Vehicle Technology consultation was launched in June 2009. The report was published in March 2010<sup>57</sup>.
- The first edition of the Carbon Account for Transport was published in August 2009, with an updated and expanded second edition published in March 2010<sup>58</sup>.
- Consultations on the first Cycling Action Plan for Scotland started in 2008 were continued throughout 2009. The Action Plan was published in June 2010<sup>59</sup>.

#### **Funding**

- In this Spending Review, the Scottish Government has made available nearly £73m for sustainable and active travel. Of this, £27.27m is allocated to local authorities for Cycling, Walking and Safer Streets and £35.7m is core Scottish Government funding to allocate to strategic projects (at least 50% of this has been allocated to cycling and walking projects).
- A further £10million was allocated to sustainable transport for 2010-11 in April 2010 as part of the allocation of consequential that arose from the UK budget in March. This sum will be used to assist the uptake of low carbon vehicles, associated infrastructure and increased cycling.

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<sup>55</sup> <http://www.transportscotland.gov.uk/reports/rail/j11289-00.htm>

<sup>56</sup> <http://www.scotland.gov.uk/Publications/2010/02/03132605/0>

<sup>57</sup> <http://www.scotland.gov.uk/Topics/Transport/sustainable-transport/LCV>

<sup>58</sup> <http://www.scotland.gov.uk/Publications/2010/03/11091112/0>

<sup>59</sup> <http://www.scotland.gov.uk/Publications/2009/05/28093408/0>

- The £15million Smarter Choices, Smarter Places demonstration project<sup>60</sup> was launched in May 2009. £10m is provided by the Scottish Government over the current Spending Review while the remaining £5m consists of matched funding. Funding has been allocated to seven projects ranging from the Orkneys to Dumfries and Galloway. The projects involve infrastructure improvements and behavioural change campaigns, including widespread personal travel planning.

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<sup>60</sup> <http://www.scotland.gov.uk/topics/transport/sustainable-transport/places>

## **10. Public Sector**

### **10.1 Public Sector emissions**

In 2007, emissions from direct fuel use in the Scottish public sector, which are likely to be predominantly from operating boilers for heating, were around a third lower than the baseline year (a reduction from 1.2 Mt CO<sub>2</sub>e to 0.8 Mt CO<sub>2</sub>e).

### **10.2 Public Sector role**

The public sector has a leading role in supporting delivery of Scotland's climate change mitigation and adaptation ambition, and can demonstrate this by setting its own demanding targets, sharing best practice, and encouraging wider action through communication, partnership working and visible reporting on performance.

### **10.3 Progress to date**

Many public bodies have made strong commitments to the climate change agenda, working through mechanisms such as the Carbon Trust Carbon Management Programme and the CRC Energy Efficiency Scheme.

The Scottish Government is working to support public bodies respond to climate change and fund a number of delivery bodies and agencies offering different types of resource efficiency support to the public sector in Scotland. These programmes and agencies in Scotland include [Carbon Trust](#), [Salix Finance](#), [Energy Saving Trust](#), [SEPA](#), and [Zero Waste Scotland](#).

With support from the Scottish Funding Council, the [Environmental Association for Universities and Colleges](#) (EAUC) provides the further and higher education sector with dedicated advice, guidance and training in all aspects of sustainability, environmental management and social responsibility.

Guidance, direct help and assistance is provided by [Health Facilities Scotland](#) on a broad range of measures and initiatives to assist NHS Boards to improve their energy efficiency, reduce their CO<sub>2</sub> emissions and contribute to the Scottish Government's sustainable development objectives.

### **10.4 Public Bodies Duties**

Section 44 of the Climate Change (Scotland) Act places duties on public bodies relating to climate change. The duties, which come into force on 1 January 2011, apply to all 'public bodies', defined as a Scottish public authority within the meaning of section 3(1)(a) of the Freedom of Information (Scotland) Act 2002 (as amended).

While compliance with the duties is a matter for the public bodies concerned, the Act requires that Scottish Ministers must give guidance to public bodies in relation to their climate change duties, and those bodies must have regard to such guidance.

The Scottish Government has been engaging with public sector representatives, and others, to inform development of draft guidance<sup>61</sup>. An Advisory Group, established by the Scottish Government to provide advice on the development of the guidance, met for the first time in February 2010. The members of the group represent a range of public bodies, including local government, NHS, government agencies and Non-Departmental Public Bodies. Other members include the Sustainable Development Commission Scotland, Scottish Trades Union Congress, Audit Scotland, and Stop Climate Chaos.

Prior to the wider written consultation exercise planned for late summer 2010, the Scottish Government, working with the Sustainable Development Commission and Sustainable Scotland Network, held pre-consultation workshops in March 2010 to which a number of public bodies covered by the duties, and representatives from non governmental organisations, were invited.

## **10.5 Public Sector Climate Action Group**

In order to provide a political driver for actions to deliver the requirements of the Climate Change (Scotland) Act, the Scottish Government has joined with the Convention of Scottish Local Authorities (COSLA) to identify and promote the actions needed across the public sector to meet Scotland's ambitious climate change targets. The Minister for Transport, Infrastructure and Climate Change is co-chairing a new Public Sector Climate Action Group, whose membership is drawn from Scottish public bodies, with the COSLA Spokesperson for Regeneration and Sustainable Development. A link with the private sector has been established with the Chair of the 2020 Climate Group joining as an observer.

The remit of the Group, which met for the first time in February 2010 is:

- To provide a political driver for actions to deliver the requirements of the Climate Change (Scotland) Act;
- To promote early climate change actions, identifying ways in which to remove obstacles to such action;
- To provide a focus for the 2020 Climate Group to handle public sector issues;
- To promote good practice across the public sector on climate change, and to secure opportunities to work, and share good practice, with the business sector.

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<sup>61</sup> <http://www.scottish-enterprise.com/your-sector/energy/energy-background/energy-reports/energy-renewable-energy-reports.aspx>

- To maintain an overview of climate change work already underway with an eye to ensuring both value for money and to avoid duplication of effort.

The Group will provide leadership and direction to ensure the public sector plays its part in delivering the challenging targets in the Climate Change (Scotland) Act 2009 and will also provide crucial co-ordination between the public and private sectors.

## 10.6 Local Authorities

The Scottish Government is a member of the Climate Change Officer Support Group, chaired by COSLA, which supports [COSLA's Elected Member Climate Change Task Group](#) in developing and reviewing the local government climate change response. The Scottish Government provides regular information to the Task Group and the Minister for Transport, Infrastructure and Climate Change attended the Group's January 2010 meeting.

Local authorities annual statements of progress under Scotland's Climate Change Declaration were made available on the Sustainable Scotland Network Website<sup>62</sup>.

In summer 2009, the Scottish Government and Community Planning Partnerships agreed 2<sup>nd</sup> Phase [Single Outcome Agreements](#) (SOAs). These SOAs set out key priorities identified by each of the 32 Community Planning Partnerships for a local area, expressed in the form of local outcomes which contribute to the Scottish Government's Purpose and National Outcomes and which local partners undertake to pursue. Local outcomes and/or associated measures on tackling climate change at the local level feature prominently in SOAs. In addition, a number of provisions that will impact on local government were introduced by the Climate Change (Scotland) Act 2009, including new powers to enable councils to give council tax and non-domestic rates rebates for energy efficiency and renewable energy improvements made to homes and other buildings.

The Scottish Government continues to support the Sustainable Scotland Network (SSN) to provide assistance to local authorities in achieving a sustainable Scotland. The Cabinet Secretary for Finance and Sustainable Growth attended the eighth annual Sustainable Scotland Network conference, *Sustainable Economic Growth and the Agenda for Scottish Local Authorities*, on 29 October 2009. The event attracted more than 250 delegates, bringing together leading politicians, academics and representatives from public, private and voluntary sectors to debate the concept of sustainable economic growth and the practicalities of a transition to a low carbon economy. The conference focused on the period of change to 2020 to make the transition to a lower-carbon, more sustainable economy.

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<sup>62</sup> <http://climatechange.sustainable-scotland.net/>

Many local authorities are using the footprint approach to understand their area-emissions profiles and to undertake policy scenario planning. This work is supported by the [Local Footprints Project](#) which assists local authorities using the Resources and Energy Analysis Programme (REAP) software to measure consumption-based emissions from their communities and to assess the effectiveness of various policy interventions.

Assistance is being provided through the Scottish Climate Change Impacts Partnership (see para 13.7) to help local authorities complete a [Local Climate Impact Profile](#) to better understand their exposure to weather and climate. It is based on evidence of a locality's vulnerability to severe weather events and in particular how these events have affected the local community as well as the authority's assets and capacity to deliver services.

### **10.7 Energy Efficiency in the Public Sector**

The Scottish Government published Conserve and Save: a Consultation on the Energy Efficiency Action Plan for Scotland on 8 October 2009. [Chapter 9](#) focuses on energy performance of the public sector.

### **10.8 Sustainable Procurement Action Plan**

The Scottish Sustainable Procurement Action Plan was launched on 28 October 2009. This provides the methodology and guidance for embedding sustainable procurement across the Scottish public sector. The Action Plan calls on public sector organisations to develop their own organisation-specific Delivery Plans. The Scottish Government's own Sustainable Procurement Delivery Plan is due for completion later in 2010.

### **10.9 CRC Energy Efficiency Scheme – See Chapter 8 for details**

### **10.10 Scottish Government Estate**

In 2008 the Scottish Government signed up to the Carbon Trust's Carbon Management Programme and committed to achieving a reduction of at least 20% in its emissions by 2014. The Scottish Government's Carbon Management Plan<sup>63</sup>, published in May 2009, sets out 14 projects, focusing primarily on the built environment and low carbon technologies, to potentially save up to 4,000 tonnes of energy-related emissions. The Carbon Management Plan is a working document and needs to remain dynamic in light of the fluidity of the Government estate. The projects identified within the Plan are subject to change as the estate changes.

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<sup>63</sup> <http://www.scotland.gov.uk/Resource/Doc/273527/0081712.pdf>

The 2008-09 report on Scottish Government's own environmental performance was published on 21 May 2010<sup>64</sup>.

#### **10.11 Key achievements 2009-10:**

- Public Bodies Duties included in Climate Change (Scotland) Act – June 2009
- Establishment of Public Sector Climate Action Group – Feb 2010
- Scottish Sustainable Procurement Action Plan<sup>65</sup> - published October 2009
- Engaging with public sector representatives, and others, to inform development of draft guidance to assist public bodies comply with climate change duties under the Climate Change (Scotland) Act.
- Scottish Government Carbon Management Plan published May 2009.

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<sup>64</sup> <http://www.scotland.gov.uk/Publications/2010/05/14145517/0>

<sup>65</sup> <http://www.scotland.gov.uk/Publications/2009/10/sspap>

## 11. Agriculture, Forestry and Land Use

### Agriculture

#### 11.1 Emissions from Agriculture

Agriculture is a significant source of greenhouse gas emissions. These emissions can occur both from natural and anthropogenic processes. For example, carbon dioxide from the conversion of land to cropping, nitrous oxide from the application of fertiliser to soils and methane from fermentation in ruminant digestion. Agriculture also represents a sink of greenhouse gases through the uptake of carbon dioxide by crops, grassland and farm woodland.

In 2007, agriculture represented 13.5% of Scottish net emissions. Taking into account total emissions from agricultural activity and also related land use, the current emissions from the sector are estimated at around 20% of Scotland's total.

#### 11.2 Farming for a Better Climate

The Scottish Government is working in collaboration with the agricultural sector to reduce greenhouse gas emissions through the voluntary *Farming for a Better Climate* initiative. This initiative has identified five key action areas to help Scottish farmers reduce avoidable emissions, adapt to climate change and improve their businesses.

These action areas are;

- Improving efficiency in the use of energy and fuels,
- Developing renewable energy,
- Locking carbon into the soil and vegetation,
- Optimising fertiliser and manure application,
- Optimising livestock management and storage of waste.

The *Farming for a Better Climate* website<sup>66</sup> was launched in June 2009 and features case studies and downloadable practical guides. A series of *Farming for a Better Climate* workshops for advisors, consultants, farmers and land managers were held throughout Scotland in 2009.

#### 11.3 Climate Change Focus Farms

In partnership with Scottish Agricultural College (SAC), a 3 year Climate Change Focus Farm programme will be launched in June 2010. The Climate Change Focus Farms will be used to host open days, events and meetings to

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<sup>66</sup> <http://www.sac.ac.uk/climatechange/farmingforabetterclimate/>

communicate the *Farming for a Better Climate* initiative to the Scottish farming community, land managers and the public.

These Focus Farms will be representative of typical farm types across Scotland (dairy, upland livestock, arable and a farm diversification business) and will specifically support knowledge transfer and practical application of the *Farming for a Better Climate* initiative in their sector.

The Focus Farms will have their greenhouse gas emissions monitored throughout the programme to provide valuable data on the costs and benefits of specific climate change measures.

#### **11.4 Agriculture and Climate Change Stakeholder Group**

An Agriculture and Climate Change Stakeholder Group has been established by the Scottish Government. The group has a wide membership, including representatives from National Farmers Union Scotland, Quality Meat Scotland and Forestry Commission.

The remit of the group is to consider practical measures that can be taken within the agricultural industry to contribute to the Scottish Government's climate change objectives, and to make recommendations on the ways of facilitating the adoption of these measures.

#### **11.5 Agriculture and Climate Change Research**

The Scottish Government Rural and Environment Research and Analysis Directorate manages around £70 million of funding each year towards a scientific research programme to support policy needs. Research is carried out into a wide range of environmental, biological and agricultural subjects.

The current programme, which runs until 2010, has provided funding for research regarding the impacts and responses to climate change. This includes work to develop effective and efficient methods for calculating and verifying the retention and sequestration of greenhouse gases in soils and vegetation.

The results of this research will be integrated into future policy developments.

#### **11.6 Planning Land Application of Nutrients for Efficiency and Environment**

The Scottish Government has funded the PLANET (Planning Land Application of Nutrients for Efficiency and the Environment) Scotland project. This project has developed user friendly software that will allow farmers to use field level information to generate fertiliser recommendations and to set up a nutrient management plan.

The Scottish version of the software will be widely available from June 2010 and will help farmers to make the most efficient use of fertilisers and decide upon the most cost effective methods to maintain and improve soil productivity. Targeting fertiliser input will help reduce greenhouse gas emissions as well as improving water and air quality.

### **11.7 A Scottish Farm Based Greenhouse Gas Accounting Tool Project**

A project was funded by the Scottish Government to review existing greenhouse gas accounting tools and to recommend improvements in emissions accounting and reporting. The findings of this project will be published in summer 2010.

The Scottish Government hopes to encourage farmers to undertake farm based greenhouse gas audits as a means of helping them to identify which of the relevant measures in *Farming for a Better Climate* are likely to have the greatest impact on reducing their emissions.

### **11.8 Scotland Rural Development Programme**

Scotland Rural Development Programme (SRDP) is a £1.6 billion programme of economic, environmental and social measures designed to develop rural Scotland. It commenced in 2007 and will operate until 2013.

Under SRDP, grants are available for activities focusing on reducing emissions of greenhouse gases, improving efficiency of practices and better management of current climate change actions.

Eligible activities include development of renewable energy provision, managing flood plains, small scale woodland creation and the preparation of nutrient management plans.

Funding is also available under the Skills Development Scheme for industry-led initiatives to transfer knowledge and improve farmers' land and business management skills. For example, £151,645 has been provided towards the Soil Association's £202,201 climate change adaptation project.

## **Forestry**

### **11.9 Role for Forestry**

In November 2009, the UK Forestry Commission published the report 'Combating Climate Change - a role for UK forests'<sup>67</sup>. This independent assessment was commissioned by the Forestry Commission to examine the

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<sup>67</sup> <http://www.forestry.gov.uk/forestry/infd-7y4gn9>

potential of the UK's trees and woodlands to mitigate and adapt to our changing climate and it highlights the important potential contribution of Scotland's forests.

The Forestry Commission Scotland is developing subsequent action, which is detailed in the Scottish Forestry Strategy Implementation Plan (2010-13)<sup>68</sup>.

## Land Use

### 11.10 Land Use Strategy

Section 57 of the Climate Change (Scotland) Act 2009 requires a land use strategy to be laid by Scottish Ministers before the Scottish Parliament by 31 March 2011.

The Strategy must set out the Government's objectives in relation to sustainable land use, as well as proposals, policies and their associated timescales for meeting those. The objectives, proposals and policies must contribute to obligations under the Act on emissions reduction targets, to climate change adaptation objectives and to sustainable development.

The Scottish Government is undertaking wide-ranging engagement with the public and other stakeholders to inform the development of the Land Use Strategy. The development of the Strategy has been informed by more than 500 stakeholders in a series of eleven discussion workshops held around Scotland in the spring. Formal consultation on a draft Land Use Strategy will begin in the autumn. A discussion forum is running on the Scottish Government website<sup>69</sup> and 11 workshops were held around Scotland in March and April 2010.

### 11.11 Key achievements 2009-10:

- Climate Change (Scotland) Act 2009 – Section 57, Land Use Strategy requirement.
- Scotland's commitment to plant 100 million trees by 2015 as part of the Climate Group's 1 billion tree initiative. This new woodland would, over the next 100 years, absorb around a year of Scotland's current emissions.
- September 2009 – launched 'Farming for a Better Climate'<sup>70</sup>
- Scottish Soil Framework published in May 2009<sup>71</sup>
- The Scottish Government is funding three Climate Change Focus Farms, which will focus on demonstrating the implementation of mitigation measures promoted by 'Farming for a Better Climate'.

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<sup>68</sup> <http://www.forestry.gov.uk/website/forestry.nsf/byunique/infid-6aggzw>

<sup>69</sup> <http://www.scotland.gov.uk/Topics/Environment/Countryside/Landusestrategy>

<sup>70</sup> <http://www.scotland.gov.uk/topics/farmingrural/agriculture/environment/climatechange/advice/>

<sup>71</sup> <http://www.scotland.gov.uk/publications/2009/05/20145602/0/>

- Scotland's Climate Change Adaptation Framework was published in December 2009, and includes a chapter on Agriculture. The framework sets out the strategic direction for Scottish Government actions for building Scotland's resilience to the changing climate, and outlines the key issues and the actions required by individual organisations and businesses within sectors.

## **12. Waste**

### **12.1 Emissions from Waste**

Waste management contributed 4.6% of net Scottish emissions in 2007. This represents a reduction of 54.2% from the baseline year.

The amount of waste thrown out by households in Scotland is falling steadily, and the quantities of waste recycled have risen significantly in recent years. In 2009-10 local authorities recycled an average of around 35% of the waste collected, with the best-performing councils recycling as much as 45%.

### **12.2 Zero Waste Plan**

The Scottish Government Zero Waste Plan for Scotland was launched on 9 June 2010; it represents a shift in focus from municipal waste to all waste as well as a move to viewing waste as a resource.

The Zero Waste Plan for Scotland will set the direction for waste management for the years ahead. The Plan will be built around our central goal of achieving a zero waste Scotland. It outlines how we can all play our part in reducing the amount of waste we produce, reuse valuable resources and increase recycling levels to help Scotland become a Zero Waste society. A Scotland where “waste” is reduced to a minimum, and all resources are used as effectively and efficiently as possible.

The Plan outlines Scottish Government intentions to introduce Landfill bans of specific materials, restrictions on materials that can be incinerated and requirements to separately collect waste streams. These measures, when in place, will lead to higher levels of recycling of all waste and greatly reduce the amount of organic material going to landfill. This will greatly reduce the climate change impact of current waste management practices, as well as indirect climate impact associated with Scotland’s demand for virgin primary resources as Scotland moves to becoming a high recycling society.

The Plan also outlines the intention to develop a carbon metric as a better driver for recycling within the waste stream.

The Zero Waste municipal recycling/composting targets are 40%, 50%, 60% and 70% for 2010, 2013, 2020 and 2025 respectively.

A new long term target has been set for 70% recycling of all waste and only 5% going to landfill by 2025.

### **12.3 EC Landfill Directive targets**

The EC Landfill Directive requires local authorities in Scotland to reduce the amount of biodegradable municipal waste going to landfill to 1.32 Mt by 2010,

880,000 t by 2013 and 620,000 t by 2020. Currently, local authorities landfill circa 1.2 Mt of biodegradable municipal waste, so the 2010 target has already been met.

#### **12.4 Climate Change (Scotland) Act 2009 – Waste Provisions**

Part 5 Chapter 5 of the Act contains a series of enabling powers to allow the Scottish Ministers to make regulations in respect of the following waste issues:

- Waste prevention and management plans
- Information on waste
- Facilities for deposit of recyclable waste
- Procurement of recycle
  - Procurement and construction contains a certain proportion of recycle.
- targets for reduction of packaging
- deposit and return schemes
- charges for the supply of carrier bags

#### **12.5 Zero Waste Scotland (ZWS)**

Zero Waste Scotland (ZWS) is a new “one-stop-shop”, funded by Scottish Government, to support Zero Waste Plan implementation. This will be done through a range of activities including: providing advice and expertise; education; research; brokering strategic agreements; and running capital grant schemes for infrastructure to treat food waste and reprocessing plastics. ZWS will rationalise / amalgamate the existing delivery programmes funded by the Zero Waste Fund.

#### **12.6 Key achievements 2009-10:**

- Average municipal recycling rates in excess of 35%
- 2010 Landfill Directive target to limit biodegradable waste to landfill already exceeded.
- Scottish Government launched consultation on a Zero Waste Plan<sup>72</sup> in August 2009.
- New Zero Waste Scotland body to oversee delivery of Zero Waste Plan established 1 April 2010.
- Waste provisions included in Climate Change (Scotland) Act 2009.
- Publication of Zero Waste Think Tank reports – 15 February 2010<sup>73</sup>

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<sup>72</sup> [www.scotland.gov.uk/topics/environment/waste-and-pollution/waste-1/wastestrategy](http://www.scotland.gov.uk/topics/environment/waste-and-pollution/waste-1/wastestrategy)

<sup>73</sup> <http://www.scotland.gov.uk/Topics/Environment/waste-and-pollution/Waste-1/wastestrategy/zero-waste-think-tank/ZWTTReports>

## **13. Climate Change Adaptation**

### **13.1 Overview**

Scotland's climate is changing. The world needs to cut emissions to limit the extent of the climate change, but even if all greenhouse gases were stopped throughout the world, the climate would continue to change for at least 30 to 40 years. Therefore, alongside cutting emissions, Scotland needs to find ways to adapt to a new and challenging climate. By planning and preparing for change now, Scotland will be better placed to take advantage of the opportunities and build resilience to the potential negative consequences that change brings.

Adaptation is an issue that no government can address alone. Success will depend on organisations, businesses, communities and individuals across Scotland accepting responsibility and preparing for a changing climate now. There are some functions, however, that are most effectively provided by central Government and this section highlights some of the actions the Scottish Government has taken over the last year.

### **13.2 UK Climate Projections**

The Scottish Government co-funded the development of the UK Climate Projections (UKCP09), which were launched in June 2009<sup>74</sup>. These projections show the changes that can be expected, due to climate change, during the rest of this century. Broadly, it is very likely that Scotland will have warmer, wetter winters and hotter, drier summers.

### **13.3 UK Climate Change Risk Assessment**

The UK Climate Change Act requires a report to be laid before the UK Parliament containing an assessment of the risks to the UK of the current and predicted impacts of climate change. This report is referred to as the UK Climate Change Risk Assessment (UKCCRA). The first UKCCRA is due by January 2012 and subsequent reports are required every five years.

The Scottish Government is co-funding the UKCCRA and has been working closely with other UK Administrations in taking the project forward.

### **13.4 Adaptation requirements in Climate Change (Scotland) Act**

The Climate Change (Scotland) Act has established the legislative framework to pursue the Scottish Government's ambitions to promote climate change adaptation in a number of ways:

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<sup>74</sup> <http://ukclimateprojections.defra.gov.uk/>

- Scottish Ministers must lay a programme before the Scottish Parliament, setting out proposals and policies to meet their climate change adaptation objectives. This must address risks identified for Scotland in progressive UK Climate Change Risk Assessments.
- Scottish Ministers are required to report annually on progress towards their programme to adapt to climate change. They must also seek independent scrutiny of their progress from the UK Committee on Climate Change's Adaptation Sub-Committee.
- Public bodies [as defined in the Freedom of Information (Scotland) Act 2002] are required to exercise their functions in a way which will help deliver the Scottish Government's programme for adaptation to climate change.
- A land use strategy is required, setting out objectives, proposals and policies relating to sustainable land use. Sustainable land use will be important to the success of any climate change adaptation programme.

### **13.5 Climate Change Adaptation Framework**

Scotland's Climate Change Adaptation Framework was launched by the First Minister on 8 December 2009. It sets the coordinated, strategic lead for Government and challenges all sectors to take action and play their part in adapting and building resilience to the future impacts of the changing climate.

The Adaptation Framework is a non-statutory forerunner to the adaptation programme required under the Climate Change (Scotland) Act. There is no statutory requirement to report on its progress, but there is a commitment from Scottish Ministers to report progress annually.

The overarching aim of the Adaptation Framework is to "increase the resilience of Scotland's communities, and the natural and economic systems on which they depend, to the impacts of climate change". It has established three pillars of action to achieve this:

1. Improve understanding about the consequences of a changing climate and both the challenges and opportunities it presents;
2. Equip stakeholders with the skills and tools needed to adapt to the changing climate; and
3. Integrate adaptation into wider public policy and regulation so that it is a help, not a hindrance, to addressing climate change issues.

### **13.6 Sector Action Plans**

The Adaptation Framework has established 12 key sectors where adaptation action will be focused over the next few years. Summaries for each of the key sectors were published in December alongside the Framework. The summaries outline the climate change issues and big challenges for each sector and provide an indication of the range of work already planned.

Sector Action Plans, with more comprehensive and prioritised actions will be developed in 2010 by appointed Sector Leads and key stakeholders.

### **13.7 Scottish Climate Change Impacts Partnership**

To help and encourage businesses and organisations, including local authorities, in the development of their own adaptation response, the Scottish Government has increased the funding available to deliver the services provided by the Scottish Climate Change Impacts Partnership (SCCIP)<sup>75</sup>. The Partnership's website offers access to quality data on climate trends and their impacts in Scotland as well as access to tools and advice on adapting to the impacts.

### **13.8 Adaptation to Transport Network**

Adaptation of the strategic transport network to cope with effects of climate change is vital to ensure the continued health of the Scottish economy. Transport Scotland is currently updating the Scottish Road Network - Climate Change adaptation report following publication of the UK Climate Projections 2009. Trials of innovated long life durable pavements have been installed on the M8. This work has also seen the increased use of recycled material and work to eliminate waste. One of the most significant effects of increased rainfall is the increase risk of landslides. During 2009/10 work has been undertaken on the A83 in Argyll to install a debris flow catch net as well as innovative wig-wag signs warning drivers of the risk of landslides.

### **13.9 Key achievements 2009-10:**

- UK Climate Projections launched in June 2009.
- Scottish Government increased funding provided to Scottish Climate Change Impacts Partnership (SCCIP) to more than £200K per year in June 2009.
- Scotland's Climate Change Adaptation Framework<sup>76</sup> was published on 8 December 2009 and launched by the First Minister.
- Officials appointed to lead development of 12 adaptation Sector Action Plans in early 2010.

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<sup>75</sup> <http://www.sccip.org.uk/>

<sup>76</sup> <http://www.scotland.gov.uk/AdaptationFramework>

## **14. Climate Change Communications**

### **14.1 Public Engagement Strategy**

Section 91 of the Climate Change (Scotland) Act requires that the Scottish Ministers prepare and publish a strategy setting out the steps they intend to take to inform persons in Scotland about the targets specified by virtue of the Act, and encourage them to contribute to the achievement of those targets.

The strategy required under the terms of the Act must, in particular, identify actions people in Scotland can take to personally contribute to achieving Scotland's climate change targets.

Work on the public engagement strategy is ongoing. The public engagement strategy must be published no later than 31 December 2010.

### **14.2 Go Greener Campaign**

The Scottish Government's GoGreener campaign supports and encourages people to take action to adopt more sustainable behaviours. The campaign website<sup>77</sup> gives many examples of actions which people can take to reduce their emissions and help tackle climate change, as well as often saving money. For example, there are sections on how to travel more sustainably, how to reduce energy fuel bills and how to reduce food waste.

### **14.3 Climate Challenge Fund**

The Climate Challenge Fund gives direct support to communities to implement actions to reduce their carbon emissions.

The Climate Challenge Fund has a total available resource of £27.4 million over the three years 2008-11.

Funding allocation decisions are now complete with over 250 communities having received support<sup>78</sup>. Communities own estimates are that the carbon savings from the projects will equate to around 700,000 tonnes of carbon.

### **14.4 Climate Change Behaviours Research Programme**

The *Climate Change Delivery Plan* and *Conserve and Save* both made clear that further work was required to understand behavioural change by individuals and households to reduce carbon emissions. As a result of this, Scottish Government analysts have developed an ambitious and evolving

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<sup>77</sup> <http://www.infoscotland.com/gogreener/1.html>

<sup>78</sup> <http://www.scotland.gov.uk/topics/environment/climatechange/ClimateChallengeFund>

programme of analytical work which seeks to answer key questions and support policy development. The main focus of the work is on individuals and households but there are also workplace and community elements, as well as one project on social exclusion and climate change. The research is a mix of commissioned and in-house work, and seeks to draw from the existing evidence base wherever practicable. Outputs from the research will be made available over the next year, as appropriate.

#### **14.5 Key achievements 2009-10:**

- £27.4 million allocated to over 250 communities through the Scottish Government Climate Challenge Fund.
- Public Engagement Strategy included in Climate Change (Scotland) Act
- Working with representatives from a number of organisations including Stop Climate Chaos, WWF, the Church of Scotland and SCVO to develop the Public Engagement Strategy. We expect to broaden this engagement further through a series of events currently being developed.
- Working with the private sector and others through the 2020 Climate Group and engaging with colleagues across the public sector through, for example, the Public Sector Climate Action Group to develop the Public Engagement Strategy.

## **15. Climate Change Delivery Plan**

### **15.1 Climate Change Delivery Plan / Transformational Outcomes**

On 17 June 2009, the Scottish Government published its Climate Change Delivery Plan<sup>79</sup>. The Delivery Plan highlighted the work to be done over the next decade to prepare for the more radical changes needed by 2030 if the emissions reduction target for 2050 is to be achieved. The Delivery Plan is built around four transformational outcomes that must be delivered to reduce emissions by 80% by 2050:-

- A largely decarbonised electricity generation sector by 2030, using renewables complemented by fossil fuels with Carbon Capture and Storage;
- Largely decarbonised heating for buildings by 2050, through reduced demand, energy efficiency, and renewable and low carbon heating;
- Almost complete decarbonisation of road transport by 2050, with significant progress by 2030, through wholesale adoption of electric cars and vans; and
- A comprehensive approach to carbon in rural land use, incorporating: protection for Scotland's carbon rich soils; minimised emissions from agriculture; use of natural resources to generate renewable energy; and increased sequestration of carbon, for example, through woodland planting.

### **15.2 Statutory Report on Proposals and Policies**

The statutory Report on Proposals and Policies (RPP) that Ministers are required to lay before Parliament will build on the Delivery Plan by detailing the specific measures that are required to meet the emissions reduction targets set under the Climate Change (Scotland) Act. The Scottish Government intends to lay a draft RPP before Parliament after summer recess.

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<sup>79</sup> [www.scotland.gov.uk/publications/2009/06/18103720/0](http://www.scotland.gov.uk/publications/2009/06/18103720/0)

## 16. Carbon Assessment

### 16.1 Carbon Assessment of Scottish Budget

Section 94 of the Climate Change (Scotland) Act requires an annual carbon assessment of the Budget, with the Scottish Government producing a report describing the direct and indirect impact on greenhouse gas emissions of its expenditure plans. Scotland is the only country in the world to commit to producing a carbon assessment of this type.

### 16.2 Key achievements 2009-10:

- Published first ever carbon assessment of the greenhouse gas emissions associated with the Scottish Government Draft Budget<sup>80</sup> in September 2009. This assessment becomes a statutory part of reporting for the Climate Change (Scotland) Act from 2010. The Carbon Assessment shows total carbon impact of the Budget to be 11.5 Mt CO<sub>2</sub>e compared to a total carbon footprint for Scotland of 85 Mt CO<sub>2</sub>e in 2006.<sup>81</sup>
- To meet the challenging targets in the Climate Change (Scotland) Act 2009 there is a need to think about the carbon costs of Government activity and spend as a matter of routine. DECC has produced guidance for carbon appraisal of policy. This guidance has been assessed to establish its applicability in Scotland<sup>82</sup>, and routes for improving it for use in appraisal across the Scottish Government. As a result, Scottish Carbon Impact Assessment guidance has been developed and is currently in draft form.

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<sup>80</sup> <http://www.scotland.gov.uk/Publications/2009/09/17102339/10>

<sup>81</sup> This is the latest date for which a carbon footprint is currently available. See:

<http://www.scotland.gov.uk/Publications/2009/10/28101012/0>

<sup>82</sup> <http://www.scotland.gov.uk/Publications/2009/09/17100851/0>





The Scottish  
Government

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ISBN: 978-0-7559-9401-4 (web only)

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APS Group Scotland  
DPPAS10192 (06/10)

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