

# **Energy Efficiency Action Plan - Formal Review**

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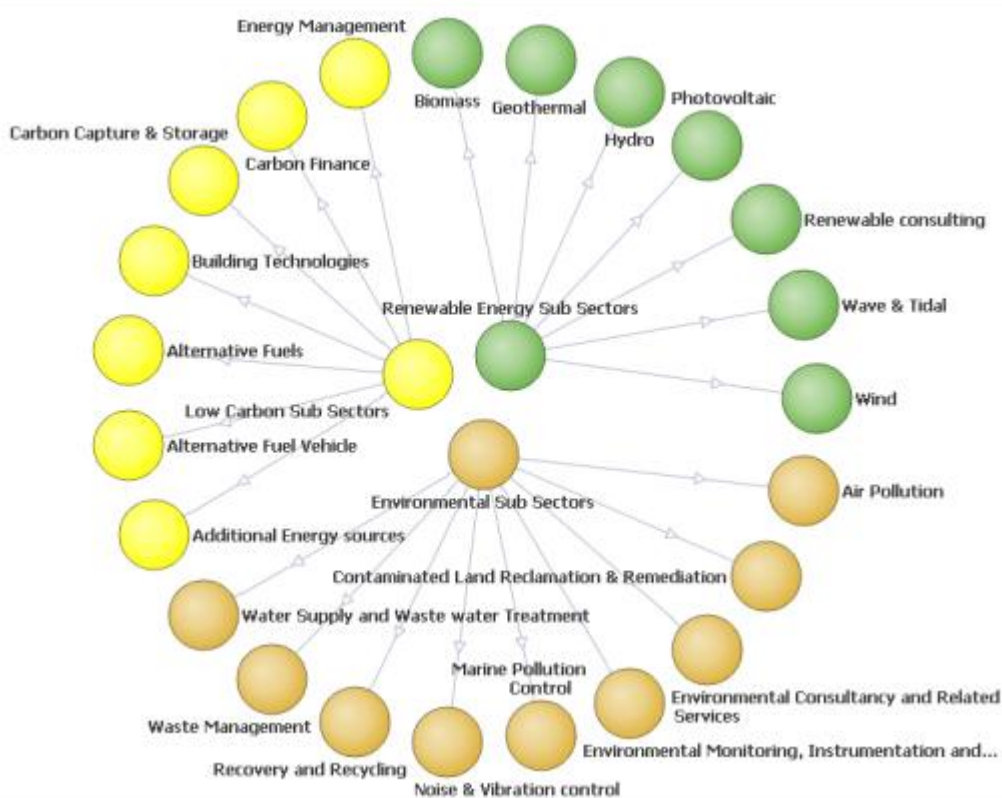
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# 1. Executive Summary

The Scottish Government published *Conserve and Save: the Energy Efficiency Action Plan for Scotland (EEAP)* in October 2010 setting a 12% final energy consumption target across all sectors in 2020 against a baseline averaged over the years 2005 - 2007. This established a minimum level of ambition for all sectors. This target sits alongside and supports our greenhouse gas emissions reduction target.

We are on track to meet the 12% energy efficiency target. The latest energy trends data for 2010 showed a slight increase in consumption compared to 2009 due in part to the economic recovery from the previous year and a particularly cold winter. Consumption in 2010 was 1.2% higher than in 2009 but still 6.2% lower than the 2005-2007 baseline against which the energy efficiency target is measured.

Energy efficiency as part of a wider resource efficiency agenda has environmental, social and economic benefits. It reduces greenhouse gas emissions, assists households in fuel poverty and importantly in the face of rising energy costs and tight economic circumstances supports individuals, public sector organisations and business to save money. The global economic downturn only strengthens the need for our businesses, particularly our small and mediums sized enterprises, to take advantage of the market opportunities presented by Scotland's investment in a low carbon economy, energy and wider resource efficiency being key sub-sectors within that.



**Chart 1: Key subsectors of the low carbon economy**

Energy efficiency is critical to satisfying our requirements for the services that energy provides (heat, light, mobility, function of appliances etc.), whilst ensuring that these

remain affordable and we protect the environment for future generations. This places energy efficiency at the top of our hierarchy of energy policies as the simplest and most cost-effective way to reduce emissions whilst seeking to maximise the productivity of our energy resources. Energy efficiency complements our other energy related strengths, and works across areas such as housing, business, and transport, all of which are major consumers of fuel, to help us create a more sustainable Scotland with opportunities for all to flourish.

The EEAP set out the direction for Scotland’s energy efficiency policy in the years taking us up to 2020. It identifies the need to take effective action to encourage innovation, secure finance (or funding) and develop skills to take advantage of the opportunities presented. Advice and support to consumers in homes and organisations is key to help drive demand.

Under Section 60 of the Climate Change (Scotland) Act 2009, the plan was required to set annual energy efficiency targets and describe how these targets are to be reported on. Using data published each December by the UK Department of Energy and Climate Change we have reported progress against the target. Previous progress reports on the plan were published in 2011 and 2012 and this report meets both the commitment to (a) publish an annual report and to (b) formally review the plan within 3 years of its publication.

**Table one – Summary of progress on actions**

Priority Area	Actions Total	Actions Complete	Partially complete	Superseded / no longer appropriate
Encouraging Behaviour Change	5	5	0	0
Domestic	8	6	2	0
Business	5	4	0	1
Public Sector	7	6	1	0
Building Standards	9	9	0	0
Built Environment	5	4.5	0	0.5
Changing our Transport systems	3	3	0	0
Developing Skills for Energy Efficiency	5	4	1	0
Financing Energy Efficiency	3	3	0	0
Taking Energy Efficiency Forward	3	3	0	0
<b>Total</b>	<b>53</b>	<b>47.5</b>	<b>4</b>	<b>1.5</b>

The EEAP covers 10 priority areas, and identifies a total of 53 discrete actions that support the achievement of the target. All actions have been completed or are on track to be completed. Progress against actions is detailed in Section 4 of this report. Highlights include:

- **Encouraging Behaviour Change**

We launched the Greener Scotland website<sup>1</sup> providing advice on the actions individuals can take to go greener, including the significance of energy efficiency in reducing our carbon footprint and consuming less energy. The site provides top tips for reducing energy and a tour of an energy efficient virtual house. To date, there have been over 130,000 unique visits to the site, with 18% repeat traffic - a quarter

<sup>1</sup> <http://www.greenerScotland.org/>

of whom went on to revisit at least once more. Facebook likes have grown from zero to over 13,000 and there has been a 135% increase in subscribers to Greener Scotland emails, which facilitate on-going behaviour change over time.

- **Domestic Energy Efficiency**

Over 544,000 Scottish households benefited from the Carbon Emissions Reduction Target (CERT). We are encouraging take-up of its replacement, the Energy Company Obligation (ECO), through effective partnership working. We established the Home Energy Efficiency Programmes for Scotland (HEEPs) for Scotland in 2013, investing £79 million in 2013-14. Our investment is expected to attract funding from energy companies creating a total fund of around £200 million a year.

- **Energy Efficiency for Business**

The £7m Resource Efficient Scotland programme, launched in 2013, offers comprehensive information, advice and support to businesses, third sector and public sector organisations to implement energy, material resource and water efficiency measures. This brought together services previously provided by three different organisations. There are three delivery routes: advice and support, sector programmes and strategic interventions. The Advice and Support service aims to provide some form of support to at least 12,500 organisations per year (including 12,000 SMEs). It is targeting savings of at least £21 m per year to organisations in Scotland, including:

- energy efficiency savings of 45 GWh – equivalent to taking around 10,000 cars off the road
- raw material savings of 25,800 tonnes
- diverting 67,000 tonnes of waste from landfill.

- **Energy Efficiency across the Public Sector**

Until March 2013, we funded the Carbon Trust to support our public bodies with technical and carbon management advice, including the Public Sector Carbon Management programme, (completed by over 150 organisations), providing them with a Carbon Management Plan and a baseline assessment of their energy use and carbon emissions, targets and a standardised methodology for identifying and developing energy and carbon reduction projects. This led to the implementation of measures across the public sector in 2011/12 which saved around 398 GWh of energy, generating annual cost savings of nearly £4.3 million.

- **Achieving energy efficiency through Building Standards**

New energy standards were introduced in 2010. The impact of this policy is assessed in terms of emissions, with annual abatement of approximately 14-16 ktCO<sub>2</sub> identified<sup>2</sup>. As abatement is cumulative from each year's build, this would give an annual abatement of 133 ktCO<sub>2</sub> in 2020 and 253 ktCO<sub>2</sub> in 2027.

- **Infrastructure for the Built Environment**

We have pro-actively developed district heating as a discrete policy area within energy efficiency. We established a £5m District Heating Loans scheme. In October

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<sup>2</sup> See *Low Carbon Scotland: Meeting our Emissions Reduction Targets 2013-2027* and accompanying technical annex for details <http://www.scotland.gov.uk/Topics/Environment/climatechange/scotlands-action/lowcarbon/meetingthetargets>

2012 twelve projects were approved for funding worth £2.1 million<sup>3</sup>. Six others have been offered an in principle loan by the Scottish Investment Bank (SIB). We convened an Expert Commission on District Heating which reported in November 2012, we have published our Heat Vision for Scotland, and will shortly published a District Heating Action Plan which will address the commission recommendations, and by the end of 2013 we will publish a draft Heat Generation Policy Statement for consultation.

- **Changing How we use our Transport Systems**

Through the Scottish Green Bus Fund, launched in 2010, we have provided grant totalling £7.7 million and assisted the purchase of approximately 94 low carbon buses. Each new bus is expected to produce 30% less emissions and require 60% less fuel than a diesel bus, delivering an average emissions reduction of around 21 tCO<sub>2</sub>e per year or 300 tCO<sub>2</sub>e over its life-cycle.

- **Developing the Skills for Energy Efficiency**

Our Low Carbon Skills Fund,<sup>4</sup> delivered through Skills Development Scotland, has supported Scottish Businesses to undertake over 2,100 episodes of training to increase individuals' energy and low carbon skills since 2010.

- **Financing Energy Efficiency**

Analysis by the Scottish Futures Trust indicates that an investment of £350 million in low carbon measures - across the Scottish public estate - could lead to potential cost reductions in the region of £900 million. Scottish Government is working closely with the Green Investment Bank, Scottish Futures Trust and Resource Efficient Scotland, CoSLA, Scottish Enterprise and others to bring forward a nationwide programme of energy efficiency projects across the public sector estate. Engaging with the Green Investment Bank to establish where there are opportunities for large scale private investment; supplementing public sector investment and accelerating the programme.

- **Taking Energy Efficiency Forward**

The Scottish Government's Economic Strategy (refreshed in 2011) identified the transition to a low carbon economy as a new strategic priority which will be central to maximising Scotland's sustainable economic growth rate - particularly in the long-term.

A focus on increasing resource efficiency - water, waste, energy and materials (including critical raw materials) - across all areas of the Scottish economy and adopting sustainable business practices will boost our long-term productivity and performance. The better we are able to adopt low carbon practices the greater our comparative and competitive advantage will be relative to our competitors. This focus on resource efficiency will also help the Scottish economy become more resilient to increasing global demand for scarce resources.

There is considerable scope to explore further the options of taking forward energy efficiency pro-actively and providing the finance that will enable us to do so.

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<sup>3</sup> <http://www.scotland.gov.uk/News/Releases/2012/10/districtheating1102012>

<sup>4</sup> <http://www.skillsdevelopmentscotland.co.uk/our-services/low-carbon-skills-fund/>

Since the Action Plan was published the significance of energy efficiency has grown internationally. We have seen the publication of the UK Energy Efficiency Strategy to which we contributed through representation on the UK Energy Efficiency Deployment Office and a new European Directive on Energy Efficiency which came into force in November 2012.

### **Energy Efficiency Priorities Moving forward to 2020 and 2030**

Scottish Government remains committed to achieving our 2020 energy efficiency targets, and maximising the significant contribution energy efficiency will make to achieving our emissions reduction targets to 2027 and beyond; and will continue to work closely with key stakeholders.

We are currently working to finalise the second climate change Report on Proposals and Policies (RPP2) after publishing the draft earlier this year and we will publish it soon. RPP2 details actions across the Scottish economy for meeting the greenhouse gas emission targets to 2027.

We recognise that some of the progress against the current energy efficiency target can be attributed to economic recession. However the energy efficiency target was defined to allow for fluctuations within the longer-term trend. The 6.2% fall by 2010 from the baseline is well within the annual maximum. We remain confident that we can meet the energy reduction targets as the economy recovers and grows, in particular with a focus on the transition to and investment in low carbon infrastructure projects and behaviour change programmes and incentives, a strategic priority within the Scottish Government's Economic Strategy.

Energy efficiency has a significant role to play, not only to reduce energy demand, and related carbon emission but also to mitigate rising energy bills for domestic and non-domestic consumers; support the eradication of fuel poverty, and contribute significantly to the Scottish economy. Energy efficiency is integrated within mainstream policies. Over the next period the Scottish Government has set out its strategic direction and planned actions for these, including:

A draft **Sustainable Housing Strategy** published as a consultation in 2012 ;and the final publication of which will be in summer 2013, set out a route map and vision to 2030 for high-quality, warm, low-carbon homes including the launch of our **£79 million Home Energy Efficiency Programmes for Scotland (HEEPS)** in April 2013 which is expected to attract additional funding from energy companies to create a total fund of around £200 million a year.

Having launched **Resource Efficient Scotland** in April 2013 for energy efficiency, waste, water and material resource efficiency we will support businesses and, public sector and third sector organisations to **target savings of at least £21 million per year** for these organisations in Scotland.

Working with the Scottish Futures Trust, Resource Efficient Scotland, CoSLA, and NHS Health Facilities Scotland we will bring forward a **nationwide programme of energy efficiency projects across the public sector estate** including; converting to greener street lighting and non-domestic building retrofit; attracting investment

from the private sector such as the Green Investment Bank. Projects like this are important as analysis by the Scottish Futures Trust indicates that an investment of £350 million in low carbon measures - across the Scottish public estate - could lead to potential cost reductions in the region of £900 million.

We published our Outline Heat Vision on 29 January 2013 and set out our ambition to have a largely decarbonised heat sector by 2050, with significant progress made by 2030 taking into consideration environmental, economic and social aims; and our intention to publish later this year a **Draft Heat Generation Policy Statement** for consultation. We held an Expert Commission on District Heating which reported in November 2012 and we will shortly publish the **District Heating Action Plan**, setting out its detailed response to the recommendations of the Expert Commission and the roadmap for these recommendations are being taken forward by Government, industry and other stakeholders.

The Scottish Government is committed to driving energy efficiency improvements through building standards, with a further improvement on the current 2010 standards proposed for 2014. The Sullivan Report, '**A Low Carbon Building Standards Strategy for Scotland**' published in 2007 made a wide range of recommendations. These included step changes to energy standards within building regulations in support of the ambition for Scotland to achieve net zero carbon buildings by 2016/17, if practical. In view of the economic downturn, the Sullivan Panel reconvened in May 2013 to review some of the recommendations made. It is expected that the Panel will report back in late summer/early autumn.

We are also **developing regulations under Section 63** of the Climate Change (Scotland) Act 2009 requiring the energy performance of **existing non-domestic buildings** to be assessed. Owners will either carry out physical improvement work to the building or make arrangements to measure, report and display operational ratings after such an assessment.

For existing housing, in Summer 2013, we are **introducing new energy efficiency standards for social housing**, setting initial targets to be met by 2020. We will have also committed to consulting by Spring 2015 on draft regulations for a minimum standard for private sector housing to be introduced in 2018 .

Transport Scotland have worked with a range of stakeholders to provide greater choice to our citizens about decisions on modes of transport. We are investing over **a billion pounds in 2013-14 in public transport and other sustainable travel options** to encourage people to leave the car at home.

Future updates on progress against the 2020 target, as required under section 62 of the Climate Change (Scotland) Act 2009, will be provided in **Energy in Scotland: A Compendium of Scottish Energy Statistics and Information**<sup>5</sup> published annually.

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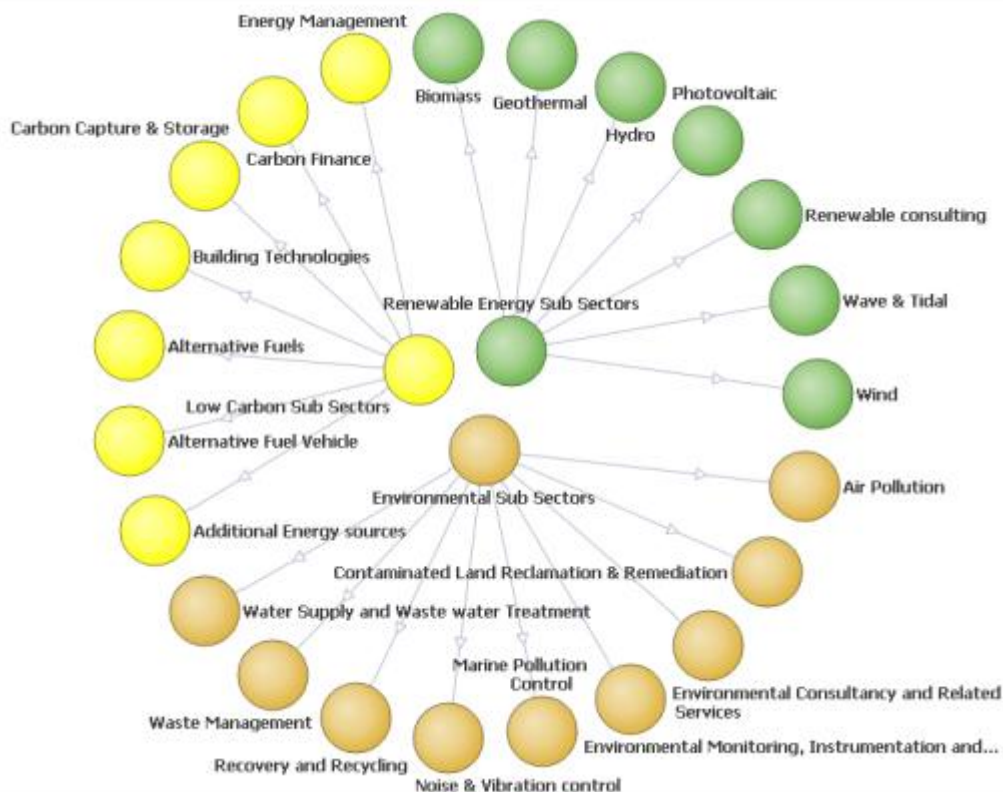
<sup>5</sup> <http://www.scotland.gov.uk/Publications/2012/03/2818>



## 2. Introduction

Energy efficiency, as part of a wider resource efficiency agenda has environmental, social and economic benefits. It reduces greenhouse gas emissions, assists households in fuel poverty and importantly in the face of rising energy costs and tight economic circumstances supports individuals, public sector organisations and business to save money. The global economic downturn only strengthens the need for our businesses, particularly our small and mediums sized enterprises, to take advantage of the market opportunities presented by Scotland’s investment in a low carbon economy, energy and wider resource efficiency being key sub-sectors within that.

Energy efficiency is critical to satisfying our requirements for the services that energy provides (heat, light, mobility, function of appliances etc.), whilst ensuring that these remain affordable and we protect the environment for future generations. This places energy efficiency at the top of our hierarchy of energy policies as the simplest and most cost-effective way to reduce emissions whilst seeking to maximise the productivity of our energy resources. Energy efficiency complements our other energy related strengths, and works across areas such as housing, business, and transport, all of which are major consumers of fuel, to help us create a more sustainable Scotland with opportunities for all to flourish. This chart gives an indication of the importance of energy management in a low carbon economy.



**Chart 1: Key subsectors of the low carbon economy**

In 2010, the Scottish Government published the Energy Efficiency Action Plan<sup>6</sup> and committed to conduct a formal review of the plan after 3 years. This report fulfils that commitment (and the statutory requirement under Section 60 of the Climate Change Scotland Act to carry out a review and to publish an annual progress update.). Further to the EEAP, we also published:

- Conserve and Save; the **EEAP for Scotland: annual report, 2011**<sup>7</sup>
- **Second Progress Report** on the Energy Efficiency Action Plan, 2012<sup>8</sup>
- **Supplementary** to the Second Progress Report, 2012<sup>9</sup> which provided detail on recent achievements and examples of cross-sectoral case studies.

Section 3 of this report sets out the reasons why we set an ambitious energy reduction target by 2020, and includes the detailed energy trends data which benchmarks progress that has been made towards achieving that target. The data covers the period to 2010, the latest year for which data is available.

Section 4 details all 53 actions set out in the EEAP and provides a narrative on what steps have been taken to fulfil these commitments since the EEAP was published. Where appropriate the detail of the energy, carbon and cost savings associated with individual actions or programmes is also provided.

Section 5 provides a summary of overall achievements and conclusions on how the plan has been delivered.

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<sup>6</sup> Conserve and Save, The Energy Efficiency Action Plan for Scotland, see <http://www.scotland.gov.uk/Publications/2010/10/07142301/0>

<sup>7</sup> <http://www.scotland.gov.uk/Publications/2011/10/04142510/0>

<sup>8</sup> <http://www.scotland.gov.uk/Publications/2012/05/1684>

<sup>9</sup> <http://www.scotland.gov.uk/Publications/2012/06/2277>

### **3. The Energy Efficiency Target**

- **Overall Progress to 2020 Target**

The Scottish Government set an energy efficiency target to reduce total final energy consumption by 12% by 2020, set against a three year average baseline over the period 2005 to 2007. This established a minimum level of collective ambition for all sectors.

The target was set to be consistent with, and support the Scottish Government's wider climate change ambition and range of actions being taken to meet our ambitious Climate Change Target of a 42% emissions reduction across Scotland by 2020 contributed to by all sectors. Other related energy targets are:

- **Electricity:** annual renewable electricity generation to be the equivalent of 100% of gross annual electricity consumption by 2020.
- **Transport:** 10% share of biofuels in transport petrol and diesel consumption by 2020.
- **Heat:** 11% of heat demand from renewable sources by 2020.

Section 60 of the Climate Change (Scotland) Act 2009 required that we set annual energy efficiency targets. Due to uncertainty around both future economic conditions and the rate of installation and uptake of key energy efficiency measures, the most appropriate approach to set energy efficiency targets that achieve a path towards the desired 2020 consumption levels was **to set annual maximum consumption levels**.

The data for 2010, published on 20 December 2012, showed a slight increase in consumption compared to 2009 due in part to the economic recovery from the previous year and a particularly cold winter. Consumption in 2010 was 1.2% higher than in 2009 but still 6.2% lower than the 2005-2007 baseline against which the 12% energy efficiency target is measured. Recognising the importance of economic cycles and weather patterns to energy consumption levels, the energy efficiency target was defined to allow for fluctuations within the longer term trend. **The 6.2% fall from the baseline remains well within the annual maximum associated with the target for 2010.**

It is not possible **to separately identify the impact of the recession from wider energy efficiency measures at this stage**. However, some increase in energy consumption was anticipated by way of correction following the economic downturn in 2009. These figures support that expectation and are consistent with trends observed in other economic/environmental indicators and we remain confident that we can meet the energy reduction targets as the economy recovers and grows, in particular with a focus on the transition to and investment in low carbon economy, a strategic priority within the Scottish Government's Economic Strategy.

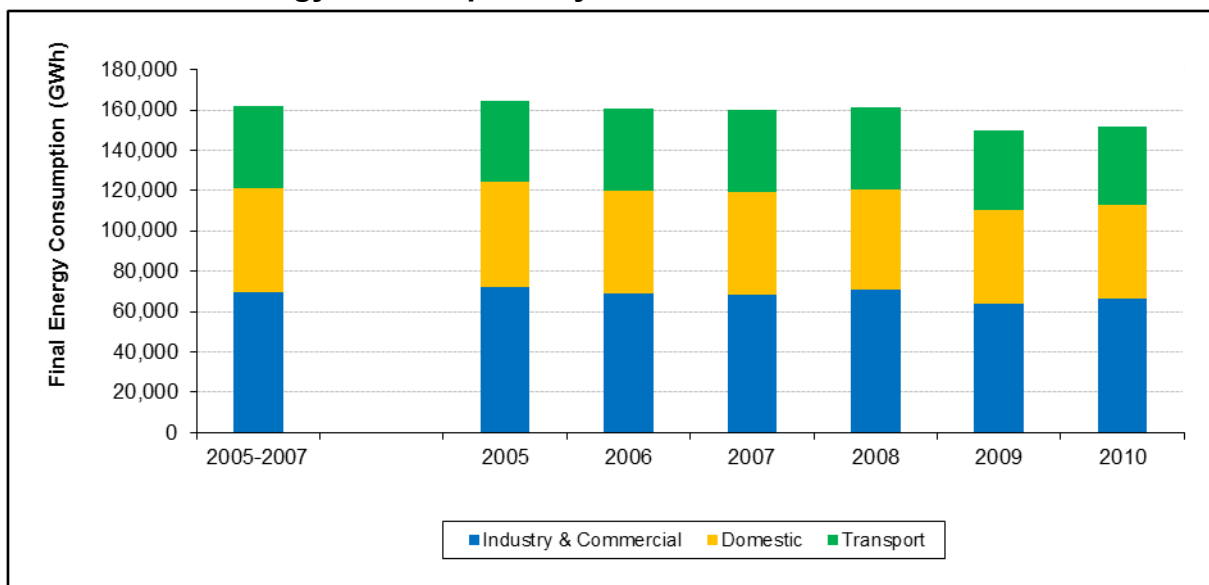
- **Energy Trends**

Chart 2 shows final energy consumption by year indicating the **make up by sector**. Chart 3 shows the year on year changes in final energy consumption across the Industrial & Commercial, Domestic and Transport sectors. The data for 2010 shows

that **since 2009** energy consumption in the Industrial & Commercial sector has increased by 4.1%, largely driven by an increase in gas consumption. Energy use has remained relatively constant in the domestic sector and fallen by over 2% in transport, reflecting a reduction in energy used for road transport.

**However, since 2005-2007**, the base line year for the EEAP, there has been an overall reduction in energy consumption. Energy consumption in the domestic sector has fallen at a faster rate than the other consuming sectors, 9.1% from the baseline, largely as a result of lower gas use. Energy use in the Industrial & Commercial sector has fallen 5.2%, again in the most part due to lower gas use, and transport has reduced by 4.2%.

**Chart 2: Final Energy Consumption by Sector:**



**Chart 3: Year on year changes in final energy consumption across the Industrial & Commercial, Domestic and Transport sectors.**

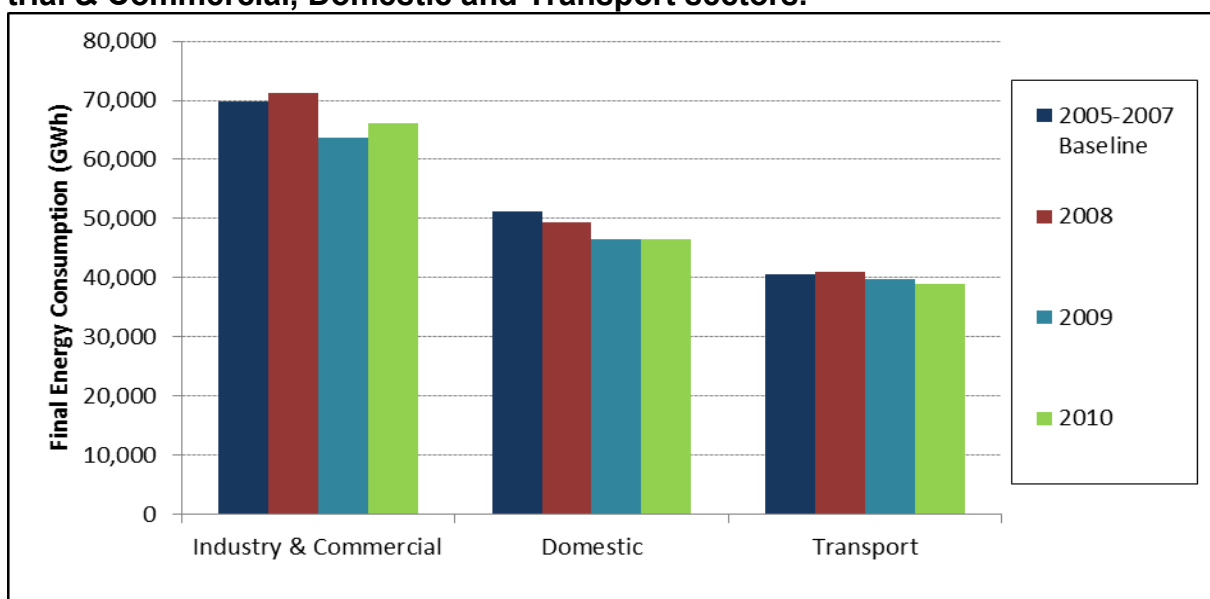
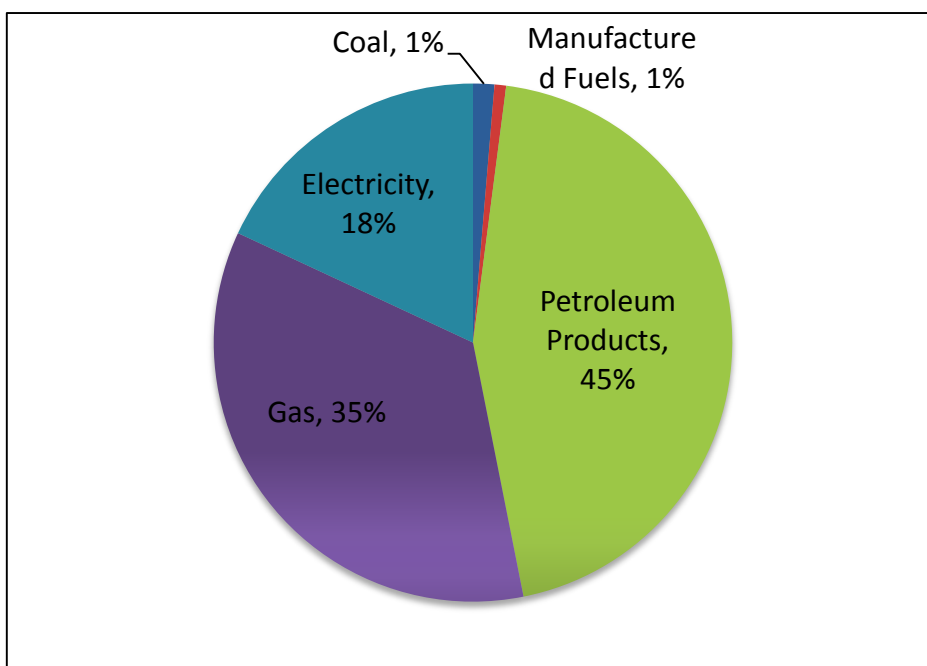


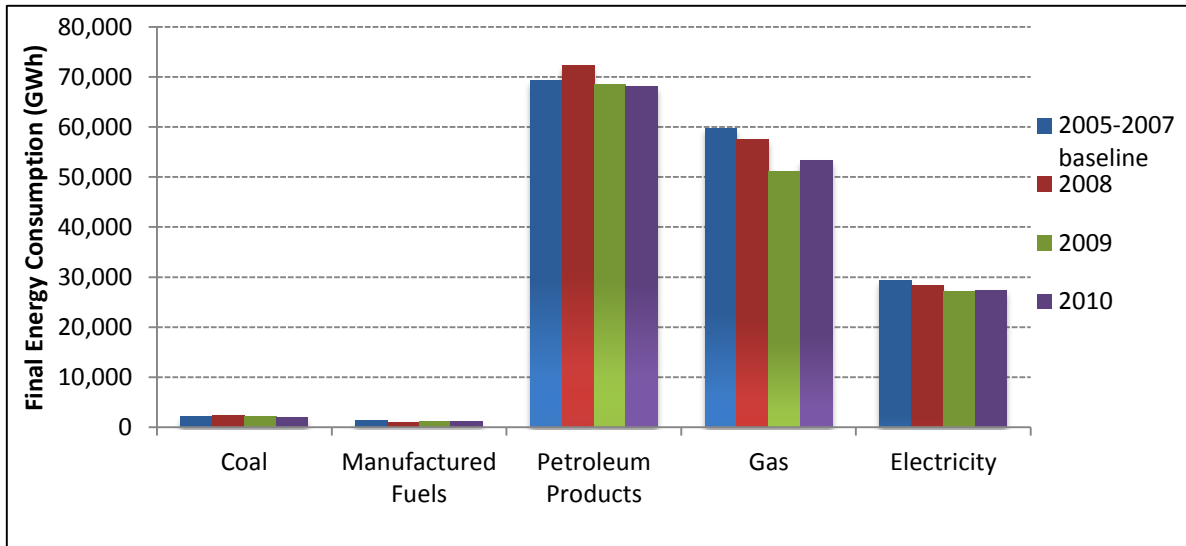
Chart 4 shows the proportion of **final energy consumption by fuel type**, aggregated for the domestic, industrial & commercial and transport sectors. Petroleum products and gas account for over 80% of the final energy used in Scotland. Coal and Manufactured Fuels combined account for 2% of final energy use.

Chart 5 shows the change in final energy consumption by fuel type between the baseline years (2005-2007) and 2010. There has been a reduction in energy use by all fuel types from the baseline, with the largest percentage reduction in the use of manufactured fuels, reducing by 15.9%. Gas use has reduced by 11.0% over the same period, electricity use has fallen by 6.5%, coal reduced by 4.1% and Petroleum Products reduced by 1.8%.

**Chart 4: Proportion of final energy consumption by fuel type, aggregated for the domestic, industrial & commercial and transport sectors.**



**Chart 5: Change in final energy consumption by fuel type between the baseline years (2005-2007) and 2010.**



The overall **6.2%** reduction, notwithstanding the increase in consumption in 2010, indicates that **Scotland is on track to achieve the 12% reduction target in 2020**. No analysis provides clarification as to which of the 3 factors (increased energy measures, higher energy prices or the economic downturn) have been most influential in achieving this change. However, it is clear that the economic downturn has influenced the reduction to a large extent and we remain committed to ensuring that energy efficiency remains a priority as the economy recovers. And further, that **changing behaviours to encourage sustainable lifestyles, together with technological advances, will be critical to achieving our targets**.

- **EU and UK Energy Efficiency Targets**

1. The EU energy efficiency target is to reduce primary energy consumption by 20% against a projected 2020 business as usual baseline.
2. The UK's indicative target is to reduce final energy consumption by 18% (equivalent to reducing primary energy consumption by 20%) against a projected 2020 business as usual baseline.<sup>10</sup>
3. Scotland established an energy efficiency target in the Energy Efficiency Action Plan to reduce final energy consumption by 12% against a 2005-2007 baseline.

It is worth setting out why Scotland has a different target. The two targets are calculated using different methodologies. The indicative European Union target to reduce

<sup>10</sup> One of the key requirements of the Energy Efficiency Directive was that Member States submitted to the Commission, by 30 April 2013, a legally non-binding energy efficiency target for 2020 (Article 3). The UK did this in accordance with the Commission's deadline. The UK indicative national energy efficiency target for 2020 is based on the DECC energy and emission projections from October 2012 and gives an indicative target of final energy demand in 2020 of 129.2 MTOE (in net calorific value excluding non-energy uses), a reduction of 18 per cent relative to a baseline projection from 2007. In primary energy consumption terms the target is 177.6 MTOE, equivalent to a 20% (MTOE) reduction on the UK's 2007 business as usual projection. The UK's target reflects the ambitious policy package on energy efficiency, which builds on the early action that was already in place by 2007.

energy consumption by 20% by 2020, is calculated using **primary** energy consumption against a **projected 2020 business as usual** baseline. This business as usual **baseline assumes that primary energy consumption will increase** out to 2020.

The Scottish target is calculated on **final** energy consumption reducing in absolute terms on a flat trajectory out to 2020. Applying the EU methodology to Scottish figures suggests that **by meeting the Scottish target we will meet the indicative EU target of 20%**.

### **Energy Efficiency Priorities Moving forward to 2020 and 2030**

Scottish Government remains committed to achieving our 2020 energy efficiency targets, and maximising the significant contribution energy efficiency will make to achieving our emissions reduction targets to 2027 and beyond; and will continue to work closely with key stakeholders.

We are currently working to finalise the Second Report on Proposals and Policies after publishing the draft earlier this year and we will publish it soon. This details the actions for meeting the greenhouse gas emission targets to 2027.

The European Commission have issued a Green Paper on the 2030 Framework for Energy and Climate Policies. The Green Paper acknowledges that a balanced package of targets and policies will be required, and suggests a 40% emissions reduction target, and a 30% share of renewables by 2030, alongside energy efficiency improvements and modernisation of the energy system.

The Scottish Government agrees that energy efficiency measures must be seen in the context of 2030 emissions targets and is actively engaging with our EU counterparts to make the case for an ambitious climate and energy policy, in line with our domestic and international objectives to reduce carbon emissions and develop renewable energy technologies for the future.

Any increase in EU ambition beyond the current 20% by 2020 energy efficiency target is unlikely to exceed Scotland's ambitions but could help incentivise the sort of measures that would make Scotland's targets more readily achievable.

## **4. Sectoral Updates – Achievements, Impacts and Outcomes**

This section sets out the actions in the EEAP and the progress against them, impact of the actions, and (where appropriate) the energy savings achieved. There were **53** discrete actions set out in the EEAP, across 10 priority areas. Over 90% of the actions have been completed and good progress has been made in the others, still on-going. Progress against each action is set out in the sub sections below.

### **A. Encouraging Behaviour Change**

***“We will focus attention on understanding and shifting behaviour through our co-ordinated approach to climate change research, sustainability in education, and influencing practical behaviour through social marketing, information and advice.***

*... government action and investments need to be matched by people’s own actions and changes in lifestyles. As energy efficiency depends on behaviour change, we need to improve our understanding of people’s energy-related attitudes and behaviours and how to influence these.... .. By influencing people to use resources wisely and to reduce their consumption, we hope to reduce their energy costs, to reduce emissions, and to stimulate markets to deliver more and better low carbon solutions.”*  
EEAP, page 25

<b>Priority Area</b>	<b>Number of Actions</b>	<b>Actions Completed</b>	<b>Partially Completed</b>
Encouraging Behaviour Change	5	5	0

We recognise that behaviour change is one of the significant drivers in promoting energy efficiency and reducing carbon emission reductions. For example, 150 public sector organisations have Carbon Management Plans and are working with their staff to deliver them, implementing measures in 2011/12 which saved them around 398 GWh of energy, generating annual cost savings of nearly £4.3 million. Behaviour Change has been identified as one of the most significant contributors in achieving this. A recent Carbon Trust report on potential abatement in the public sector estimated that behaviour change could account for 8.4% reduction in energy savings.

There are **5 actions** in this section, which have all been completed. The achievements included the launch of the Greener Scotland website providing advice on how individuals can go greener, including the significance of energy efficiency in reducing our carbon footprint.

The Climate Change Behaviours Research Programme published a range of research papers exploring the complexities of behaviours and how these can be influenced in order to help achieve more sustainable lifestyles. In March 2013, we published our Low Carbon Scotland Behaviours Framework, outlining our commitment to work with partners to ensure the transition to a low carbon society. The Scottish Government will shortly publish a User Guide to our Individual, Social and Material (ISM) tool to influencing behaviours. Taking account of all of the contexts which influence people’s behaviours, and the different factors within them, is more likely to



lead to a significant change in behaviours. We will deliver ISM workshops to government officials to seek to strengthen existing policies, whilst also offering introductory workshops to delivery organisations and stakeholders to build capacity in using the ISM tool.

More details on these actions is set out below.

**Action 1.1 In order to understand how best to influence energy efficiency behaviour, we will address energy efficiency within the Scottish Government's Climate Change Behaviours Research Programme and apply the lessons from this and other research to ongoing energy efficiency policy making.**

In 2011, we published a paper providing an update on the ongoing work within the Climate Change Behaviours Research Programme, and a separate report which looked specifically at the different influences on household domestic energy behaviours.<sup>11</sup>

**Action 1.2 We will educate our citizens about the principles of energy efficiency, most notably working with schools, colleges and universities, and the wider community in Scotland to deliver the actions set out in Learning for Change.**

Learning for Change is Scotland's Action Plan for the Second Half of the UN Decade of Education for Sustainable Development and contains a number of actions for each sector, many of which have been achieved, or are on-going. The Schools section of Learning for Change includes an on-going Scottish Government action to support Eco-Schools Scotland as an international leader in the Eco-Schools programme, which is an initiative designed to encourage whole-school pupil-led action for the environment across a range of issues, including water and energy use, waste minimisation, biodiversity and sustainability.

The aim of the Decade is to promote education as a basis for a more sustainable society and to integrate sustainable development into education at all levels and all areas of life including communities, the workplace and society in general.

The legacy of the Decade in Scotland has recently been boosted by the success of the University of Edinburgh-led bid for a UN Regional Centre of Expertise (RCE) in Education for Sustainable Development, which is currently in the process of being established. RCEs are a mechanism to encourage development and strengthening of SDE practice by setting up a network of formal, non-formal and informal education organisations, mobilised to deliver SDE to local and regional communities

**Action 1.3 In order to influence the wider public, we will use Scottish Government social marketing research, in tandem with the output of the Climate Change Behaviours Research Programme and other social research, to inform and build future marketing campaigns related to energy efficiency. Energy efficiency will come under the new overarching Greener Scotland Climate**

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<sup>11</sup> Climate Change Behaviours Research Programme Working Paper – Changing Household Energy Behaviours: Key Findings from a Review of Applied Research  
<http://www.scotland.gov.uk/Resource/Doc/175776/0114812.pdf>

**Change narrative, and we will employ the single Natural Scotland brand identity across all Scottish Government communication.**

In January 2012, we launched a new website<sup>12</sup>, a one-stop shop on how individuals can Go Greener. The website sets out the actions, including energy efficiency, we can all take and provides support in how to carry out these actions so we can all make a difference.

Scottish Government sponsored „Too Good to Waste“<sup>13</sup>, a four-part television series aired in April 2012. The series challenged Scottish Celebrities to reduce their wasteful ways. An independent study investigated the impact of the programme. All those taking part in the study made some behavioural changes.

The overarching Greener Together campaign unites the ten key behaviours identified in the low carbon public engagement strategy and reinforces topic-specific behaviour change campaigns, motivating individuals to make greener choices, more often, with focus on the power of collective action.

The campaign drives people towards the Greener Scotland website, a tool for behaviour change, which recognises that change is a staged journey. The site provides advice across the ten key behaviours, four of these behaviours help users to consume less energy at home. Users are encouraged to move from passive browsing to a state of engagement with interactive tools. To date there have been over 180,000 unique visits to the site, with 18% repeat traffic - a quarter of whom went on to revisit at least once more. Facebook likes have grown from zero to over 13,000 and there has been a 135% increase in subscribers to Greener Scotland emails, which facilitate on-going behaviour change over time.

**Action 1.4 We will communicate helpful information and advice to the groups who need to take forward energy efficiency in a way that is coherent, consistent, and easy to understand. Within this, we will:**

- **continue to support organisations such as the Energy Saving Trust and Carbon Trust to provide advice to domestic and small business users and to larger SMEs and energy intensive businesses respectively; and**
- **streamline delivery of our support for the EST's energy efficiency, fuel poverty and transport programmes**

In March 2012, we published a guidance document for employers on how to engage with staff to reduce carbon emissions at work. Energy efficiency was a core focus of this work. A research report and detailed case studies have also been published.<sup>14</sup>

In April 2012, we published an evidence library which gathers together in one place the most important freely-available evidence on influencing energy behaviours.<sup>15</sup>

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<sup>12</sup> [www.greenerScotland.org](http://www.greenerScotland.org)

<sup>13</sup> These programmes can still be viewed at [www.greenerScotland.org/why-live-greener/too-good-to-waste](http://www.greenerScotland.org/why-live-greener/too-good-to-waste)

<sup>14</sup> <http://www.scotland.gov.uk/Topics/Research/by-topic/environment/social-research/Behaviour-Change-Research>

<sup>15</sup> <http://www.scotland.gov.uk/Topics/Research/by-topic/environment/social-research/Behaviour-Change-Research/library>

Scottish Government continues to support more streamlined advice provision to householders through Energy Saving Trust, regional Energy Advice Centres and to business, public sector and third sector organisations through Resource Efficient Scotland. The impact of this support is set out in sections B and C below.

**1.5 We will engage with individuals and organisations across Scotland in a consistent and co-ordinated way, developing our energy efficiency stakeholder engagement plan within the context of broader climate change and low carbon engagement.**

We published *Low Carbon Scotland Behaviours Framework*<sup>16</sup> in March 2013 which sets out the Scottish Government commitment to working closely with its partners – the public sector, NGOs, intermediaries, community organisations, businesses and other networks – to support the transition to low carbon living.

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<sup>16</sup> <http://www.scotland.gov.uk/Publications/2013/03/8172/10>

## B. Domestic Energy Efficiency

**“Improving the energy efficiency of the domestic sector is vital, as around 29% of all energy consumed in Scotland is used in our homes for space and water heating, cooking, lighting, and running electric appliances.**

*Improving efficiency will help to achieve our key objectives of reducing greenhouse gas emissions (25% of Scottish emissions derive from homes); reducing fuel poverty and household fuel bills; and sustaining and creating a significant number of jobs.*

*As well as ensuring that new homes are more energy efficient, we need everyone to realise how existing homes, including their own, need to change.” EEAP, page 31*

Priority Area	Number of Actions	Actions Completed	Partially Completed
Domestic Energy Efficiency	8	6	2

Given that almost 30% of Scotland’s energy use is in the domestic sector, we recognise the importance of designing programmes that will help educate and inform our citizens in reducing energy consumption. We fund the Energy Saving Trust (EST) to provide advice and support, and to encourage consumers to change behaviours to lead more sustainable lifestyles. The regional Home Energy Scotland Advice Centres’ local network reaches around 250,000 people each year in Scotland.

We have designed our new Home Energy Efficiency Programmes for Scotland to maximise opportunities to effectively insulate our homes, to help leverage additional funding through the energy supplier obligations, and to take on the challenge of tackling hard to treat homes which require, for example, solid wall insulation.

With our support over 544,000 Scottish households benefited from professional insulation through the GB-wide Carbon Emissions Reduction Target (CERT). We want to encourage take-up of its replacement, the Energy Company Obligation (ECO), through partnership working with energy suppliers, local authorities, housing associations and installers to deliver at least a pro-rata share of the ECO for Scotland.

To incentivise householders to take full advantage of the Green Deal, we established our £20 million Green Homes Cashback Scheme, in November 2012 offering individuals up to £1200 to install energy efficiency measures. Vouchers worth over £3m in total have already been issued.

We are committed to delivering ambitious programmes that will improve our homes and support our citizens to be more energy efficiency, reducing the impact of rising domestic energy bills.

There are eight actions in this section, of which six have been completed and good progress has been made with the other two.

**Action 2.1 Within available resources, we will continue to provide ongoing support and financial assistance for energy efficiency in existing housing, lev-**

**ering investment from energy companies and private householders wherever appropriate.**

The Scottish Government is investing £79 million in the Home Energy Efficiency Programmes for Scotland (HEEPS). This investment is expected to attract additional funding from energy companies to create a total fund of around £200 million a year. In total we are spending around a **quarter of a billion pounds** over the spending review period on fuel poverty and energy efficiency.

Over the lifetime of the measures installed under the Energy Assistance Package, Boiler Scrappage Scheme, Universal Home Insulation Scheme and Home Insulation Scheme in the three years from 1 April 2009, it is estimated that there will be a net gain in household income of about £700m and a saving of 3 million tCO<sub>2</sub>.

**Action 2.2 We will regularly review energy efficiency programmes to make them more effective in achieving the outcomes of reduced fuel bills for Scottish households, reduced emissions, reduced fuel poverty, and a strong energy efficiency industry in Scotland. This includes increasing the uptake of GB-wide programmes.**

The Scottish Government has worked with energy suppliers in developing its programmes to maximise the CERT investment by energy suppliers – **over 629,000** professional cavity wall and loft insulation measures were installed in Scotland, 10.4% of these installations under CERT GB wide between 2008 and 2012, as well as an unknown share of other measures such as low energy light bulbs, DIY loft insulation and some solid wall insulation.

The Home Energy Efficiency Programmes for Scotland (HEEPs) were launched in April 2013. Scottish Government has worked with large energy suppliers to maximise Energy Company Obligation (ECO) spend in Scotland. HEEPS Area Based Schemes will be supported by £79 million of SG investment this year to help local councils transform the housing stock in fuel poor areas. This will support energy efficiency measures such as solid wall insulation and double glazing.

The Green Deal and ECO have superseded CERT and CESP. Under the Green Deal all customers can, potentially, access energy efficiency measures, at no upfront capital cost, with repayments linked to the occupier's electricity meter.

**Action 2.3 We will work closely with DECC in the development of future GB-wide programmes to improve deliverability in Scotland in order to make it easier for Scottish householders to benefit from these schemes.**

Scottish Government has worked closely with DECC to maximise Green Deal and ECO take up in Scotland. The Scottish Government's £20 million Green Homes Cashback Scheme launched in November 2012 and is managed on our behalf by the Energy Saving Trust. From April 2013 Scottish Government is offering owner occupiers, private and social tenants and private sector landlords up to £1,200 towards energy efficiency measures that are recommended in the Green Deal Assessment.<sup>17</sup>

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<sup>17</sup> [Green Deal assessment](#).

Over 5,900 cashback vouchers have been issued since November, with a maximum combined total value of over £3.2 million for the vouchers.

**Action 2.4 With relevant partners, we will investigate options for financing mechanisms for major energy efficiency measures in private sector housing.**

During the development of Green Deal we explored innovative finance models to encourage uptake in Scotland, working closely with partners such as local authorities, the Energy Saving Trust and private companies. In 2013, local authorities will have a major role in delivering energy efficiency measures in local communities leveraging investment by energy companies and other sources through the Home Energy Efficiency Programmes for Scotland. The Scottish Cities Alliance sustainability action group commissioned a feasibility study to explore the opportunities for Local Authorities collaboration through Green Deal. Edinburgh City Council are considering a pilot to take this work to the next stage.

**Action 2.5 Historic Scotland will take the lead in researching and promoting energy efficiency in traditional buildings. As part of this, it will:**

- i. carry out research and case study projects, and disseminate findings to and through relevant partners, publications and digital media, in order to improve provision of advice, skills and qualifications for the public and professionals on energy efficiency improvement in traditional housing; and**
- ii. include energy efficiency in domestic properties in its existing and future regeneration and grants programmes, such as the Conservation Area Regeneration Scheme.**

Having successfully completed pilot projects on eleven hard to treat properties, listed buildings and tenements, Historic Scotland (HS) carried out a further three projects in 2012 to validate the earlier trials. HS is working with the Building Research Establishment (BRE) and academic partners to carry out site trials on housing built between 1930 and 1950. HS published guidance in a range of media in autumn 2012, and delivered 45 seminars to the public and building professionals in 2012/13 to disseminate the message of appropriate site interventions for older structures.

As a result two housing associations and many private owners are carrying out retrofit work and the techniques are being adopted by contractors. Information on HS work, including technical reports and refurbishment case studies and an energy efficiency guide for homeowners is available online<sup>18</sup>. Further information will be published shortly on ECO and Green Deal and how they relate to traditional buildings. HS now requires applicants for its area grants schemes to include energy efficiency as a condition of eligibility for funding.

**Action 2.6 We will further develop our powers to enforce energy efficiency standards in the private sector, including by publishing a Ministerial report on our position on regulation by the end of March 2011.**

Section 64 of the Climate Change (Scotland) Act introduces broad powers allowing Scottish Ministers to regulate energy efficiency in private housing. The report *Regu-*

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<sup>18</sup> [www.historic-scotland.gov.uk/conservation-research](http://www.historic-scotland.gov.uk/conservation-research)



*lation of Energy Efficiency in Housing*<sup>19</sup> published in March 2011, made it clear that Ministers do not intend to use these powers before 2015. A draft Sustainable Housing Strategy<sup>20</sup> published as a consultation in 2012 set out a route map and vision to 2030 for high-quality, warm, low-carbon homes. Responses to the consultation supported a lead in time between consulting on draft regulations and the application of any standards to allow time for householders and landlords to prepare for the changes. Our proposal at this stage assumes a minimum standard for all private sector housing to be introduced in 2018 (the same timescale being considered for the private rented sector in England and Wales).

Feedback from the consultation will inform a stakeholder working group that will consider the issues and develop draft regulations for consultation by spring 2015. Part of the group's work will include considering the impact of proposed standards, for example on financial implications and energy consumption.

**Action 2.7 We will work with social landlords and other stakeholders to consider how best to meet carbon reductions from social housing, including development of an appropriate energy efficiency standard beyond SHQS.**

Social landlords are already required to meet the Scottish Housing Quality Standard (SHQS) by 2015, and this includes an energy efficiency element. Social landlords, individual tenants, tenant groups and other stakeholders were invited to engage in the consultation on Developing an Energy Efficiency Standard for Social Housing which closed in September 2012. We propose to introduce a new energy efficiency standard for social housing in 2013, setting initial targets to be met by 2020.

This will further improve the energy efficiency of social housing. The draft Business and Regulatory Impact Assessment (BRIA) estimated that upgrading the stock from SHQS to the draft new standard would produce cumulative energy savings of £360 million (in discounted terms) over the period to 2020, with further savings thereafter. The final standard will be published in Summer 2013. The BRIA is now being finalised, taking account of consultation findings, peer review research as well as through further engagement with stakeholders.<sup>21</sup>

**Action 2.8 We will strengthen guidance for Local Housing Strategies by issuing supplementary guidance jointly with COSLA on local authority coverage of climate change. This will be a key step in progressing further local councils' activity on energy efficiency and climate change towards a more strategic approach that is integrated with fuel poverty and mainstream housing policies.**

Following publication of the supplementary guidance in 2011, we are working closely with local authorities to support integration of climate change with their other housing policies through the Local Housing Strategy (LHS) process. Consideration of climate change requirements forms part of the LHS peer review process. Since the supplementary guidance was issued, 25 LHS have been peer reviewed with 6 more under-way. All demonstrate a more strategic approach to climate change activities.

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<sup>19</sup> <http://www.scotland.gov.uk/Publications/2011/03/22093051/0>

<sup>20</sup> <http://www.scotland.gov.uk/Topics/Built-Environment/Housing/sustainable/background>

<sup>21</sup> <http://www.scotland.gov.uk/Topics/Built-Environment/Housing/sustainable/standard>

## C. Energy Efficiency for Business

**“We will support businesses to maximise their competitiveness through the improved energy efficiency of non-domestic buildings and business processes and by taking advantage of the opportunities that energy efficiency will offer in the transition to a low carbon economy.**

*The focus for business in energy efficiency is two-fold. Firstly, as evidenced by our activity in the domestic sector, the growing requirement for energy efficiency across all sectors will create significant business opportunities. Secondly, early action and transformational change are essential to make non-domestic buildings and business processes more energy efficient in order to meet Scotland's climate change targets. Improved efficiency can save money and reduce carbon emissions through lower energy consumption, and can create a better quality environment in which to work and deliver services. Carbon Trust analysis suggests that it is possible to deliver carbon savings from overall business use of non-domestic buildings in excess of the 2020 42% reduction target and to deliver net costs savings of at least £4 billion across the UK.” EEAP, page 43.*

Priority Area	Number of Actions	Actions Completed	Partially Completed	Superseded or not proceeding
Business Energy Efficiency	5	4	0	1

There are 5 actions in this section, of which 4 have been completed and one action will be delivered through an alternative workstream than originally intended.

The Scottish Government is committed to improving resource efficiency across business and public sector and to continuing sustainable economic growth for Scotland. To do this, it sponsors a number of programmes to provide support to organisations to enable them to reduce their energy use and be more resource efficient and ultimately cut costs. To underline our commitment, the importance of the opportunities for the Scottish economy is recognised within the refresh of *The Government Economic Strategy*<sup>22</sup>, which identified the transition to a low carbon economy as a strategic priority.

A focus on increasing resource efficiency - water, waste, energy and materials across all areas of the Scottish economy and adopting sustainable business practices will boost our long-term productivity and competitiveness. This focus will also help the Scottish economy become more resilient to increasing global demand for scarce resources.

It is clear that offering businesses tailored advice on sustainable and efficient use of energy, materials, and other resources results in tangible cost savings, and underpins competitiveness. There are obvious cost saving benefits for business and public sector, that make the case for spending to save one that cannot be ignored and should be part of any sustainable business growth strategy. There is a potential **£2.9 billion** annual savings to businesses and organisations in Scotland through resource

<sup>22</sup> Available at: <http://www.scotland.gov.uk/Publications/2011/09/13091128/0>



efficiency measures. Launched in April 2013, our integrated Resource Efficient Scotland support programme (see 3.2) for business, public sector and third sector organisations will support the realisation of these savings.

**Action 3.1 We will address energy efficiency as a key area of opportunity underpinning the transition to a low carbon economy in the low carbon economic strategy, currently being developed in partnership with our enterprise agencies, SEPA and others.**

*A Low Carbon Economic Strategy for Scotland: Scotland - A Low Carbon Society (LCES)*<sup>23</sup>, was published in November 2010. In 2011 the Scottish Government's Economic Strategy identified the transition to a low carbon economy as a new strategic priority central to maximising Scotland's sustainable economic growth rate - particularly in the long-term.

A focus on increasing resource efficiency - water, waste, energy and materials (including critical raw materials) - across all areas of the Scottish economy and adopting sustainable business practices will boost our long-term productivity. The better we are able to adopt low carbon practices the greater our comparative and competitive advantage will be relative to our competitors. This focus on resource efficiency will also help the Scottish economy become more resilient to increasing global demand for scarce resources.

**Action 3.2 We will actively promote the provision of energy efficiency advice to businesses in Scotland, including through the establishment of a single Energy and Resource Efficiency Service.**

The Scottish Energy Resource Efficiency Service (SERES) was set up as a virtual partnership bringing together existing public sector and business support and resource and energy efficiency advice programmes delivered by SEPA, Scottish Enterprise, Highlands and Islands Enterprise, Business Gateway, Zero Waste Scotland, Carbon Trust and Energy Saving Trust<sup>24</sup>.

Building on the SERES framework we launched a **new integrated Resource Efficient Scotland**<sup>25</sup> programme in April 2013. This £7m programme offers comprehensive information, advice and support to businesses, third sector and public sector organisations to implement energy, material resource and water efficiency measures. This brought together business and public sector services delivered previously through Carbon Trust, Energy Saving Trust and Zero Waste Scotland into one integrated programme.

Resource Efficient Scotland will provide support through three main delivery routes: the Advice and Support Service; Sector programmes; and Strategic interventions.

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<sup>23</sup> <http://www.scotland.gov.uk/Publications/2010/11/15085756/0>

<sup>24</sup> For more information see: <http://www.bgateway.com/manage-your-business/environment-policy-and-procedures/scottish-energy-and-resource-efficiency-service/>

<sup>25</sup> For more information: <http://www.resourceefficientscotland.com/> | contact 0808 808 2268 | @ResourceScot

The Advice and Support service aims to provide some form of support to at least 12,500 organisations per year (including 12,000 SMEs). It is targeting savings of at least £21 m per year to organisations in Scotland, including:

- energy efficiency savings of 45 GWh – equivalent to taking around 10,000 cars off the road
- raw material savings of 25,800 tonnes
- diverting 67,000 tonnes of waste from landfill.

**Action 3.3 We will engage with industry more deeply on a sector specific basis, including by supporting the roll out in Scotland of the Carbon Trust's Industrial Energy Efficiency Accelerator ( IEEA).**

Ongoing engagement with industry and sectoral activity will be delivered through the Resource Efficient Scotland programme (see 3.2). For example, the Resource Efficiency Scotland sector programme will support signatories to existing voluntary agreements in the food & drink, retail grocery and hospitality sectors and will establish Scottish working groups to look at incorporating energy and water along with the focus on materials.

**Action 3.4 We will encourage businesses to develop and use innovative energy efficiency solutions by focussing the VIBES judges' special award in December 2010 on energy efficiency. For future years, we will investigate the possibility of developing an award specifically for energy efficiency within the VIBES scheme.**

The Scottish Government continues to support the integration of an energy efficiency award within the annual VIBES scheme<sup>26</sup>, won by Branston Ltd in 2012. As well as rewarding those that are taking action, awards of this kind raise the profile of energy efficiency activity. This provides examples to others and “normalises” such activity, helping to change the expected behaviour both of and within businesses.

**Action 3.5 We will drive forward the CRC Energy Efficiency Scheme in Scotland, ensuring that it delivers on energy efficiency for large non-energy-intensive Scottish public and private sector organisations.**

The Scottish Government has worked closely with DECC on proposals to simplify the CRC scheme. The UK Government published its response to the consultation on the proposals in December 2012. Based on the estimated energy savings set out in the DECC impact assessment, and consistent with the method used to attribute emissions reductions to Scotland, it is estimated that by the end of 2012 energy savings totalled 120 GWh (16 GWh Electricity and 104 GWh Gas). To put that in context, total Scottish final energy consumption in 2010 in the Industrial and Commercial Sector was 66,217 GWh. By 2020, energy savings in Scotland are estimated to be 779 GWh (135 GWh Electricity and 644 GWh Gas.)

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<sup>26</sup> <http://www.vibes.org.uk/guest-posts/the-vibes-2012-winners-are-revealed>

## D. Energy Efficiency across the Public Sector

**“We will provide clear energy efficiency guidance and leadership to the public sector to enable the delivery of energy saving improvements and promote exemplary behaviour.**

*The public sector needs to play a key role if Scotland is successfully to reduce its energy consumption by the magnitude required to meet our climate change targets. As well as the direct environmental and financial benefits of improving energy efficiency, the public sector has the scope to act as a standard for other sectors.*

*The Scottish Government has a coordination role to ensure that relevant central and local government organisations, and other public bodies, speak with one voice on energy efficiency and have the necessary tools to contribute to an overall reduction in energy consumption. As part of this, we will ensure our various strategies and regulations, such as the Public Bodies Climate Change Duties, the Leading by Example programme, and the School Estate Strategy, complement each other.”*  
EEAP, page 49.

Priority Area	Number of Actions	Actions Completed	Partially Completed
Public Sector	7	6	1

The Scottish Government is leading by example across our own estate, having embarked on a refurbishment programme that will reduce energy consumption in our 5 main buildings and by publishing weekly energy consumption of our headquarter buildings.

During 2011/2 and 2012/3 we invested £1m in energy efficiency measures with expected annual savings of around 1.8 GWh of energy and £140,800. Our Central Energy Efficiency Fund has delivered £123 million and 3,248 GWh energy savings to local authorities and Scottish Water over its 10 year existence. To date, the NHS CEEF fund has resulted in implementation of over 95 projects and has generated for the NHS in Scotland a cumulative, direct, revenue saving of over £5.3m and has produced a cumulative reduction of around 44,348 tCO<sub>2</sub>. In addition to the revenue saving arising out of improved energy performance, there is a further projected saving due as a result of Health Boards being able to reduce the emission allowances that they will require to purchase. At present, this equates to a projected value of around £167k over and above the annual energy savings of £1.71m.

We support the Salix Finance loans fund for Higher and Further Education (HE/FE) to improve the energy efficiency of their estates delivering to date projects which have achieved financial savings of £11.9m resulting in 16 MWh savings annually, and 243 MWh over the projects’ lifetime. As part of the Green Investment Package, the Scottish Government has invested a further £10.3m between 2012-2014 to accelerate energy efficiency projects across the public sector, specifically the NHS, HE/FE estates and emergency services, and from 2013/14 we intend to open up Salix funding to the wider public sector.

Over 150 public sector organisations have been supported by the Carbon Trust to put Carbon Management Plans in place, with an average target to reduce energy consumption by 23%.

There are 7 actions in this section, of which 6 have been fully completed and the remaining action is being progressed.

**Action 4.1 We will use the commencement of the Public Bodies Climate Change Duties as an opportunity to focus attention across the public sector on improving energy efficiency and, more specifically, to advise on ways in which public bodies can contribute to delivery of the actions within this plan.**

Guidance<sup>27</sup> advising public bodies on their obligations under the Public Bodies Climate Change Duties was published by the Scottish Government in 2011. The Guidance makes clear that a public body must, in exercising its functions, act:

- in the way best calculated to contribute to delivery of the Act's emissions reduction targets;
- in the way best calculated to deliver any statutory adaptation programme; and
- in a way that it considers most sustainable

While there is no direct duty under the climate change act in relation to energy efficiency, we routinely and systematically use the guidance as part of our communication strategy with the public sector to underline the importance of action in a range of areas, including energy efficiency, to help meet their statutory obligations in respect of climate change.

**Action 4.2 We will support public bodies to reduce the energy consumption of their estate and to embed good energy efficiency practice within their organisation by funding organisations such as the Carbon Trust to provide expert technical, behavioural and change management advice, tailored to the size of the organisation.**

Until March 2013, we funded the Carbon Trust to support our public bodies with technical and carbon management advice, including the Public Sector Carbon Management programme, (completed by over 150 organisations), providing them with a Carbon Management Plan. Our funding of the Carbon Trust led to Scottish public sector, higher and further education bodies implementing measures in 2011/12 which saved them around **398 GWh** of energy, generating annual cost savings of nearly £4.3 million. Finance made available by Scottish Government (see 4.6) will have made it possible to take forward some of these projects.

From April 2013, the new Resource Efficient Scotland programme (see Section C above) will continue to provide support to public sector bodies.

**Action 4.3 Working in partnership with the Carbon Trust and public sector representative bodies, we will develop a methodology for setting appropriate energy saving targets for the public sector in Scotland. We will then:**

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<sup>27</sup> *Public Bodies Climate Change Duties: Putting Them Into Practice - Guidance Required by Part 4 of the Climate Change (Scotland) Act 2009*. Available at: <http://www.scotland.gov.uk/Publications/2011/02/04093254/0>

- i. set an overarching energy saving target for the sector as a whole; and**
- ii. ensure, in collaboration with the sector, that all public bodies set individual annual energy efficiency targets.**

i) An overarching 12% target covers all sectors and individual targets for the public sector have not been set. The 12% target established a minimum level of ambition for all sectors, including the public sector.

ii) In January 2012, the Scottish Government published advisory guidance for Scottish public bodies aimed at assisting the production of Sustainability Reports<sup>28</sup> alongside Annual Reports and Accounts from the 2011-12 reporting year (see 4.7(ii) for more details). The inclusion of financial information in these reports is intended to raise the profile of these issues with Directors of Finance, or equivalent. Publication alongside annual accounts is expected to encourage consideration and sign-off at senior executive and board level.

**Action 4.4 We will work with the Carbon Trust to develop an asset mapping approach through to 2050, initially for the largest public sector building assets.**

Carbon Trust Scotland has undertaken a number of activities to assist in developing a best practice approach to public sector asset mapping including:

1. In 2010, carrying out an asset rationalisation mapping exercise for Glasgow City Councils „Tomorrow's office“ programme. The cost and carbon savings associated with the programme were estimated to be around £1.25 m, with 6.38 ktCO<sub>2</sub> saved.
2. In 2011/12, carrying out a condition audit of all fossil fuel fired boiler plant in the Scottish NHS estate to inform a replacement strategy that will support the NHS to meet their challenging 2030 targets for performance (HEAT targets).
3. In 2011/12, piloting strategic asset mapping and planning and Business as Usual (BAU) forecasting as a way for larger public bodies to understand their carbon reduction opportunities; developing a BAU tool. The tool took into account changes to estate, service provision and staff numbers. In 2012/13 this BAU tool was used to better understand how changes to the physical assets of the Scottish Police Force and the Scottish Government would impact on the ability to meet emissions reduction targets.
4. In 2011/12, helping West Lothian Council to map all buildings and land on their estate that could be appropriate for renewable technologies.
5. In 2012/13, supporting three colleges undergoing a merger to integrate their carbon management plans, quantifying the new organisation's baseline and its key building assets; supporting the new single college to take an informed approach to future decisions on asset retention and space utilisation.

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<sup>28</sup> <http://www.scotland.gov.uk/Publications/2012/01/05153413/1>

**Action 4.5 We will work with the Carbon Trust to produce guidance by end of March 2011 on the procurement of energy efficient, low carbon buildings in the public sector.**

The Carbon Trust has published on its website a set of detailed guidelines, entitled *Delivering the Future, Today*<sup>29</sup>. The four guides in this collection set the scene for different audiences, including building owners, specifiers and designers. The guides take a practical approach to building specification that emphasises operational-in-use targets. They identify step-by-step what is required to successfully specify and manage the delivery of exemplar performance for highly energy efficient, cost effective low carbon new build or refurbishment projects.

**Action 4.6 We will maximise the potential of available financial support for energy efficiency projects on the public sector estate.**

We support the Salix Finance loans funds for Higher and Further Education to improve the energy efficiency of their estates. The total savings to date for Scotland since the inception of the Salix funds from 384 projects worth £11.9 m amount to 16 MWh annually and 243 MWh over the projects' lifetime. From 2013/14, it is intended to open up this funding stream to the wider public sector.

During 2011/2 and 2012/3 we invested £1m in energy efficiency measures across our own estate, with expected annual savings of around 1.8 GWh of energy and £140,800.

Scottish Government is funding Scottish Futures Trust to establish a low carbon workstream to identify and develop a number of commercial and financial delivery models which will support the establishment of national programmes of energy efficiency across the public sector estate. Initial focus is on three areas and establishing pilots to quantify the costs and efficiency benefits of those to aggregate the potential for the wider public sector estate:

- Assets within a Central Government organisation (Health Services Scotland office building) and a local authority (Glasgow City Council's primary school estate) have been identified to test the feasibility of energy performance contracting;
- Discussions have begun with Fife Council on options for a delivery model for the procurement of District Heating schemes ;
- Identification of further pilots to trial other commercial delivery models such as strategic or joint venture partnerships with the private sector as well as fully public or multi public body structures;
- Working with local authorities and Scottish Procurement to establish a procurement framework to deliver a national LED street lighting replacement programme.

**Action 4.7 We will promote the reporting of public sector energy consumption, including by:**

**i. publishing details of the Scottish Government's weekly energy consumption in our headquarter buildings by Spring 2011. This will be supported by rolling**

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<sup>29</sup> <http://www.carbontrust.com/resources/reports/advice/delivering-the-future-today>.



**out the installation of Automated Meter Reading equipment for electricity and gas across those buildings that we are required to report on under the CRC Energy Efficiency Scheme.**

**ii. working with the public sector to ensure that all public bodies report on their energy consumption, and their progress in attempting to reduce this, at regular internal board meetings.**

(i) Details of daily and weekly energy consumption in head-quarter buildings is published via the Government On Line Sustainable Performance Information Exchange (GOLSPIE)<sup>30</sup>. The installation of Automated Meter Reading equipment has been rolled out to a minimum of 95% of the SG estate that is covered by the CRC Energy Efficiency Scheme.

ii) In January 2012 the Scottish Government published advisory guidance for Scottish public bodies aimed at assisting the production of Sustainability Reports alongside Annual Reports and Accounts from the 2011-12 reporting year. The guidance is intended to help public bodies identify operational inefficiencies, increase transparency, and to encourage debate and discussion leading to improved sustainability and environmental reporting. Reports are expected to comprise a table of financial and non-financial information covering the organisation's emissions, waste, water and any other finite-resource consumption for the financial year to which it relates, reported in absolute terms and including an analysis of consumption by fuel type. The inclusion of financial information is intended to raise the profile of these issues with Directors of Finance, or equivalent. Publication alongside annual accounts is expected to encourage consideration and sign-off at senior executive and board level.

While the production of sustainability reports is not currently mandatory, early indications are that a large number of public bodies are publishing reports. The issue of mandatory reporting will be included in a review of public sector emissions reduction to report in October 2014. In the interim an Advisory Group will consider and advise the Scottish government on potential changes to the Guidance on technical and governance issues related to the production of reports.

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<sup>30</sup> <http://www.scotland.gov.uk/Topics/Government/sustainabilityperformance> .

## E. Achieving Energy Efficiency through Building Standards

*“For nearly fifty years, Scotland has had its own set of building regulations and building standards system.... For many years the energy standards in the regulations were set at a modest level, broadly following those that existed in the remainder of the UK.*

*Moving into the 21st century, the climate change agenda gathered momentum. The energy standards which were revised for 2002 incorporated the best levels of thermal insulation in the UK, reflecting the fact that Scotland has a colder climate. 2007 saw a move to a 'whole building' approach to setting energy standards and a focus on reducing CO<sub>2</sub> emissions by between 23% and 25%. At the same time, minimum levels of fabric insulation were raised, showing the way for the rest of the UK. The standards introduced at the start of October 2010 will reduce the CO<sub>2</sub> emissions from new buildings by a further 30%. These standards are comparable with the best in Europe.” EEAP, page 57.*

Priority Area	Number of Actions	Actions Completed	Partially Completed
Building Standards	9	9	0

The Scottish Government is committed to driving energy efficiency improvements through building standards. The Sullivan report, ‘**A Low Carbon Building Standards Strategy for Scotland**’ published in 2007 made a wide range of recommendations. These included step changes to energy standards within building regulations in support of the ambition for Scotland to achieve net zero carbon buildings by 2016/17, if practical.

The report helped to define most of the actions relating to building standards that we committed to deliver via the action plan. All of these actions have been delivered.

Recommendations from the original report which have been introduced in the last five years, include:

- the revision of energy standards so that all new homes emit 30 per cent less carbon dioxide than the 2007 standards
- primary legislation requiring all non-domestic building owners to conduct a carbon and energy assessment.

In view of the economic downturn, the Sullivan Panel reconvened in May 2013 to review some of the recommendations made. It is expected that the Panel will report back in late summer/early autumn.

Scottish Ministers are committed to lowering greenhouse gas emissions and building standards have a vital role to play in this, and will look to the panel to establish what further contribution the building standards system can make to the energy performance of new buildings.

**Action 5.1 We are introducing new energy standards in October 2010, which will deliver a 30% reduction in carbon dioxide emissions from new buildings when compared to 2007 standards, and will further review energy standards**



**for 2013 and 2016 to help meet our emissions reduction targets. Costing research will be carried out in 2010-11 to support the review for 2013.**

We introduced new energy standards in October 2010 to deliver a 30% reduction in emissions from new buildings. The impact of this policy has been assessed in terms of emissions abatement within the *Low Carbon Scotland: Meeting our Emissions Reduction Targets 2013-2027* and its accompanying technical annex<sup>31</sup>. The expected abatement is approximately 14-16 ktCO<sub>2</sub> annually. As abatement is cumulative from each year's build, this would give an annual abatement of 133 ktCO<sub>2</sub> in 2020 and 253 ktCO<sub>2</sub> in 2027.

We are also progressing the next review of these standards, with further emissions reductions, of 21% for new homes and 43% for new non-domestic buildings, proposed for 2014. Consultation on these proposals<sup>32</sup> took place between January and April 2013.

**Action 5.2 We will consider the impact of introducing water efficiency measures into the building regulations in 2013.**

We set up a working group which made recommendations to introduce water efficiency measures for dwellings into building regulations. The standards and guidance were consulted upon at the end of 2012 and regulations<sup>33</sup> were laid in the Scottish Parliament in May, to come into force in October 2013.

The introduction of a new standard – 3.27 „water efficiency“ will reduce water consumption in homes and energy savings associated with the treatment and transportation of clean water and effluent. The Scottish Water Carbon Footprint Report for 2010 – 2011 provided CO<sub>2</sub> factors for customer water use as being 0.18 grams per litre of potable water and a higher figure of 0.93 grams per litre for wastewater collection and treatment

**Action 5.3 We have established a working group drawn from across the design and construction industry to explore the development of a sustainability labelling system for domestic buildings. This work would be extended to non-domestic buildings in due course.**

Sustainability labelling was introduced into the Building Standards Technical Handbooks in May 2011<sup>34</sup>. Applicable to new buildings, the labelling system has been designed to reward the achievement of meeting 2010 standards and opting to meet higher levels that include energy and carbon emissions targets, and broader issues such as water efficiency and flexibility in design. It awards buildings that meet the 2010 new building standards with a Bronze level label. Higher optional levels are defined by Silver, Gold and Platinum labels.

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<sup>31</sup> <http://www.scotland.gov.uk/Topics/Environment/climatechange/scotlands-action/lowcarbon/meetingthetargets>

<sup>32</sup> See <http://www.scotland.gov.uk/Publications/2013/01/4018>

<sup>33</sup> See <http://www.legislation.gov.uk/ssi/2013/143/contents/made>

<sup>34</sup> More information is available at: <http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards/techbooks/Sustainability>

The label can be utilised by developers or planners wishing to demonstrate their environmental commitment. The system could also be used to link with the local development plans to give planning authorities a consistent route to achieve their obligations under Section 72, 'Development plans: inclusion of greenhouse gas emissions policies', of The Climate Change (Scotland) Act 2009.

The Sustainability labelling system was fully developed for domestic buildings. However, due to the more varied and complex nature labelling for non-domestic buildings was only partially developed. A working group reviewed expanding the scope of sustainability labelling to cover new schools as a pathfinder for non-domestic buildings. A public consultation has been carried out and regulations<sup>35</sup> were laid in the Scottish Parliament in May, to come into force in October 2013. As higher levels of the standard are voluntary, this action is not associated with quantified emission or energy reductions.

**Action 5.4 We will continue to publish online guidance on low carbon equipment that includes issues relating to building regulations.**

We published online five low carbon equipment guides, covering air source heat pumps, ground / water source heat pumps, solar thermal/hot water systems, biomass and photovoltaics between March 2010 and September 2012.<sup>36</sup>

This action is not associated with quantifiable emission or energy reductions but is a supporting measure to other activity.

**Action 5.5 We will undertake research on providing information to building occupants to optimise the performance of low carbon homes.**

In May 2011, the Scottish Government introduced Section 7, Sustainability labelling to the Building Standards Technical Handbooks. As part of the criteria of obtaining a Silver or Gold level dwelling it included a „Quick Start Guide“ designed to provide information for building occupants on how to optimise the performance of a low carbon home. We have undertaken research on the cost of meeting sustainability labelling, which includes estimated costs in meeting these levels and CO<sub>2</sub> saving<sup>37</sup>

**Action 5.6 We are introducing improved energy efficiency measures in October 2010 for extensions, conversions and alterations, including where building elements such as boilers, cooling systems, windows, and doors are being replaced.**

We introduced new energy standards in October 2010, resulting in the use of higher specification of components when carrying out such building work. As much of this work does not require formal permissions, data is not readily available at present.

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<sup>35</sup> See <http://www.legislation.gov.uk/ssi/2013/143/contents/made>

<sup>36</sup> *Safe and sustainable installation of low carbon equipment*, available at: <http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards/techbooks/techhandbooks>

<sup>37</sup> For example: *Cost Impact of Sustainability Labelling for Domestic Buildings* and *Cost Impact of non-domestic sustainability for schools* <http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards/publications/pubresearch/researchsustainability>

Whilst savings are not quantified at present, it is intended to develop a methodology for assessing overall impact by 2015.

**Action 5.7 We are introducing new measures for the improvement of existing buildings triggered either by the extension of a dwelling or work to an existing non-domestic building with building services component. These apply from October 2010.**

We introduced new energy standards in October 2010 requiring improvement of existing buildings triggered by either the extension of a dwelling or by work to an existing non-domestic building with a building services component.

The impact of this new provision is not currently quantified. As with the previous item, it is intended to develop a methodology for assessing impact by 2015.

**Action 5.8 We will consult publicly on proposals for implementation of the EPBD recast in the first half of 2011. We will explore the possibilities of holding a national register on information from non-domestic EPCs, with a view to building on current mapping work.**

The transposition and implementation of the Recast EPBD (Energy Performance of Buildings Directive) was completed in January 2013 to meet the timetable prescribed by the EU Commission.

The new non-domestic EPC register is now in place and operational as part of a wider combined register<sup>38</sup>.

These actions are not associated with quantifiable energy or emission reductions but are supporting measures to other activity. Wider availability of a broader range of building energy data will also support future analysis in such areas.

**Action 5.9 We will explore in 2010 and 2011 the options for improving the energy efficiency of existing non-domestic building stock through a working group, with the intention of developing regulations for 2012.**

Under Section 63 of the Climate Change (Scotland) Act 2009 (CCSA), Scottish Ministers must by regulations provide for the assessment of the energy performance of non-domestic buildings and the emissions of greenhouse gases produced and require owners to improve the energy performance and reduce emissions.

A public consultation on *Climate Change (Scotland) Act 2009: Section 63 Regulations and Guidance for Non Domestic Buildings* was issued in October 2011. The Scottish Government response was published in September 2012<sup>39</sup>. This set out that eligible existing large non-domestic buildings will be subject to „Action on Carbon and Energy Performance“ (ACEP) consisting of Energy Performance Certificate (EPC), Recommendations Report and an Action Plan. Thereafter owners would carry out physical improvement work to buildings. If they are not in a position to

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<sup>38</sup> For more information see: <https://www.scottishepcregister.org.uk/>

<sup>39</sup> These documents can be accessed at: <http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards/BSD/CurrentConsultation>

carry out such work they can make arrangements to measure, report and display operational ratings for carbon and energy use.

Assessment and action will be triggered by the sale of a building or the lease to a new tenant of a building. Buildings which have installed „Green Deal“ measures will also be exempt. The policy utilises the existing structures/frameworks for assessors of EPCs. We publicly consulted on draft regulations in March 2013<sup>40</sup>.

The impact of this policy is assessed in terms of emissions abatement. The abatement is cumulative which gives 42 ktCO<sub>2</sub> in 2020 rising to 142 ktCO<sub>2</sub> in 2027.

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<sup>40</sup> *Consultation on the regulations for section 63, Climate Change (Scotland) Act 2009*  
<http://www.scotland.gov.uk/Publications/2013/03/5662>

## F. Infrastructure for the Built Environment

**“We will proactively support developments across the built environment which strengthen the impact of energy efficiency.**

*A number of infrastructural issues relating to energy efficiency apply across the built environment, taking in the domestic, non-domestic and public sectors. this section outlines actions on strategic planning, district heating, industrial waste heat, combined heat and power (CHP), planning, microgeneration and water.” EEAP, page 63*

Priority Area	Number of Actions	Actions Completed	Superseded or not proceeding
Built Environment	5	4.5	0.5

Decarbonisation of heat is a critical component of meeting our climate change targets, and establishing a strategic approach across Scotland is a priority for this Government. We published our Outline Heat Vision on 29 January 2013 and set out our ambition to have a largely decarbonised heat sector by 2050, with significant progress made by 2030 taking into consideration environmental, economic and social aims; and our intention to publish later this year a Draft Heat Generation Policy Statement for consultation<sup>41</sup>.

The expansion of district heating is at the heart of our intentions to strengthen the impact of energy efficiency across our built environment. We held an Expert Commission on District Heating which reported in November 2012. The Scottish Government will shortly publish its **District Heating Action Plan**, setting out its detailed response to the recommendations of the Expert Commission and the roadmap for these recommendations are being taken forward by Government, industry and other stakeholders.

We have fulfilled our commitment to introduce to domestic and non-domestic permitted development rights for microgeneration technologies, have launched updated online planning advice for microgeneration, and have endeavoured to maximise take-up of the Feed in Tariff (FiT) in Scotland by increasing the budget for renewable home loans. Over 26,000 installations were registered for FiTs by March 2013.

There are 5 actions in this section, of which have all been completed apart from one sub-action.

**Action 6.1 We will actively promote design solutions that support energy-efficient development forms by:**

**i. supporting initiatives that encourage low-carbon communities and sustainable developments, such as the 11 Scottish Sustainable Communities Initiative exemplar projects; and**

<sup>41</sup> <http://www.scotland.gov.uk/Resource/0041/00413386.pdf>

**ii. implementing the Designing Streets policy, which aims to prioritise pedestrians and cyclists over vehicle movement in new or retrofitted streets.**

We continue to support the eleven exemplar SSCI projects and similar initiatives which promote the design of low-carbon communities and emphasise active travel within their approach to design. The SSCI Charrette Mainstreaming programme promotes the consideration of these design criteria in the creation of visions for the future development of existing communities.<sup>42</sup>

The Polnoon project, which is an exemplar project currently under construction, demonstrates many of the qualities of sustainable place set out in Designing Streets.<sup>43</sup>

We continue to promote the adoption of Designing Streets Policy and will publish research shortly on its uptake and implementation. This examines both processes and practices across Scotland in projects receiving planning approval.

**Action 6.2 We will proactively develop district heating as a discrete policy area within energy efficiency, including by:**

- i. appointing a dedicated officer to take forward district heating policy and coordinate activity across Scottish Government;**
- ii. supporting a number of local heat mapping and feasibility projects over 2010/11;**
- iii. investigating options for training or workshops for planning authority officers;**
- iv. pursuing options to finance district heating projects; and**
- v. SEPA's advice to planning authorities re water, heat and power.**

In March 2012, we convened the Expert Commission on District Heating, made up of stakeholders from industry, public sector and NGOs. The Commission reported its recommendations to Government in November 2012, the Scottish Government set out its initial response at a meeting to the Commission in December 2012, and we will shortly publish a **District Heating Action Plan** setting out how we are taking forward these actions.

The recommendations cover dedicated support for district heating, training and capacity building for local authorities, planning and financing for district heating.

Pilot heat maps have been completed in Highland, Fife and Perth & Kinross Councils. In December 2012, we appointed a Heat Mapping Programme Manager to work with local authority planning authority officers to roll out the Heat Mapping Programme for Scotland across the rest of the country.

In October 2012, we announced District Heating Loan Fund awards with a value of £2.1 million for 12 projects and in November 2012, we announced £2.67 million of capital grants for 3 demonstration district heating projects. In November 2012 the Scottish Investment Bank (SIB) considered six community renewables applications,

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<sup>42</sup> <http://www.scotland.gov.uk/Topics/Built-Environment/AandP/Projects/SSCI/Mainstreaming>

<sup>43</sup> <http://www.scotland.gov.uk/Topics/Built-environment/AandP/Projects/Polnoon>

all of which have been offered an in principle loan. The total value of the loans is £2 million. During 2012, we offered pre-planning community loans worth £2 million.

In January 2013, we published our outline for a draft heat vision for Scotland, setting out our plans to develop a draft **Heat Generation Policy Statement (HGPS)** by the end of the year. The HGPS will present our understanding of how heat is delivered now, both domestically and industrially, and set out scenarios for meeting our heat vision to 2050<sup>44</sup>.

**Action 6.3 We will ensure that planning policy takes into account the potential contribution of microgeneration by:**

- i. carrying out consultations on permitted development rights for microgeneration in domestic and non-domestic properties and bringing relevant legislation into force by April 2011; and**
- ii. working with planning authorities to meet the terms of Section 72 in a way which is consistent with Scottish Planning Policy.**

We introduced domestic and non-domestic permitted development rights for micro-generation technologies in 2012.<sup>45</sup>

We continue to engage with planning authorities by providing comments on development plans during their development. We have reported annually to the Scottish Parliament on the operation of Section 72 since 2011, as required by legislation.

The Scottish Government has made £725,000 available to planning authorities that made bids for additional resources for dealing with applications for wind turbines at all scales. The Scottish Government will return to those authorities later this year to understand the impact the funding has made.

In 2012, we launched updated online planning advice for microgeneration to supplement the Directorate's existing suite of online renewables planning advice<sup>46</sup>, including sections on technical information, typical planning considerations and useful references.

**Action 6.4 We will actively promote microgeneration, most notably by:**

- i. seeking to maximise Feed in Tariff and proposed Renewable Heat Incentive investment in Scotland;**
- ii. supporting the development of a Scottish Microgeneration Certification Scheme (MCS) certification body and exploring other barriers that hinder widespread participation in MCS;**
- iii. publishing a series of online guides on low carbon equipment (see Action 5.4); and**
- iv. our work on skills (see Section C8) and to reduce consumption in the transport network (Action 7.3).**

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<sup>44</sup> <http://www.scotland.gov.uk/Resource/0041/00413386.pdf>

<sup>45</sup> <http://www.scotland.gov.uk/Publications/2012/02/9140/0>

<sup>46</sup> <http://www.scotland.gov.uk/Resource/0039/00392306.pdf>



In June 2012, we published the Microgeneration Strategy for Scotland, along with a £5 million increase in the budget for the Energy Saving Scotland Home Renewables Loans. The maximum loan was increased to £10,000 to target heat technologies, resulting in a 6-fold increase in applications by March 2013. By the end of March 2013, over 26,000 installations in Scotland were registered for the FIT, totalling 114 MW of installed capacity.

The non-domestic Renewable Heat Incentive (RHI) was launched in November, with a number of small commercial biomass and Ground Source Heat Pumps (GSHP) now receiving RHI payments. In March 2013, the UK Government announced that the domestic RHI would be delayed until Spring 2014.

Scottish Government published a number of technical guides on the safe and sustainable installation of low carbon equipment in 2011 and further guides biomass and solar PV was published in 2012.<sup>47</sup>

**Action 6.5 Scottish Water will prepare a plan by 2011-12 as to how it intends to promote water conservation and water-use efficiency.**

Scottish Water has published its Water Efficiency plan for 2011-2015. Scottish Water are working with the Energy Saving Trust in Scotland on a collaborative initiative to emphasise the benefits in terms of energy savings which are implicit in improving the efficiency of hot water use. Advice to consumers is now provided through the Energy Saving Scotland advice centres throughout Scotland.

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<sup>47</sup> <http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards/techbooks/techhandbooks>



## G. Changing how we use our Transport Systems

**“We will create an energy and fuel efficient transport system as part of our drive towards a low carbon future for Scotland.**

*As outlined in the consultation paper, transport is a major contributor to Scottish energy demand and greenhouse gas emissions. ....In 2007, 15 MTCO<sub>2</sub>e of carbon from transport entered the atmosphere. If we are to meet the statutory targets set out in Climate Change (Scotland) Act 2009, and make significant progress towards the decarbonisation of road transport by 2030, we must start to reduce our transport energy demand now. While the major policy levers to reduce transport emissions and energy consumption rest with the EU and the UK Government, commissioned [research](#) has identified a series of devolved policy options available to Scottish Ministers. These are grouped under three key headings:*

- i. Reducing the need to travel ...*
- ii. Widening travel choices ...*
- iii. Encouraging energy efficient driving for remaining road journeys and reducing energy consumption in our management of the transport network...” EEAP, page 71.*

Priority Area	Number of Actions	Actions Completed	Partially Completed
Changing our Transport systems	3	3	0

Transport Scotland have worked with a range of stakeholders to provide greater choice to our citizens about decisions on modes of transport. We are investing over a billion pounds in 2013-14 in public transport and other sustainable travel options to encourage people to leave the car at home. We have an ambitious vision to see 10% of all journeys in Scotland in 2020 by bike.

Initiatives such as the work of the Energy Saving Trust through fuel efficient advice, Grey Fleet Reviews and the Low Carbon Transport Loan Fund have all contributed to more sustainable travel. The expansion of car clubs, with an additional 15 new clubs being created since 2010 has also made a valuable contribution.

We are adopting a pro-active approach to buses and rail services. We have invested heavily in the Scottish Green Bus Fund and supported the expansion of rail network through new routes, new stations and new trains

There are 3 actions in this section, within which there are an additional 12 sub-actions and good progress has been made in all categories.

**Action 7.1 We will seek to reduce the need to travel, in particular through further analysis of the community-hub concept in order to test issues of planning, likely demand, community and business engagement, and value for money.**

We are developing work around promoting alternatives to travel, and Information and Communications Technology will have increasingly significant roles to play in daily life, particularly in the wake of roll-out of our Digital Strategy. Promoting alternatives to travel will be an on-going area of work as the opportunities provided through technological and cultural change. We are not currently pursuing the community-hub concept for delivery analysis and testing, given the potential for considerable impact of smarter working approaches and so the stronger merits of investigation of these first. Thus, we are working with networks such as the public sector climate action group and the 2020 Climate Group to promote reduced travel through the use of teleconferencing and video-conferencing, for example. This involves work to evaluate and build on the experience of smarter working initiatives that have been implemented to date.

In addition we grant-fund the Energy Saving Trust to work with businesses and organisations, including running the Low Carbon Transport Loan fund, which has provided free loans for equipment such as video-conferencing facilities to much reduce transatlantic flights.

**Action 7.2 We will extend travel choices to include more sustainable transport options through:**

**i. supporting more active travel - implementing the Cycling Action Plan to achieve our vision of 10% of all journeys being by bike in 2020 and supporting this with additional funds this financial year;**

Over the course of this spending review, this Scottish Government will invest almost £58 million on infrastructure, training and road safety projects through Sustrans, Cycling Scotland and local authorities. In 2013/14, £5.6 m has been allocated under the Local Government settlement for the ring-fenced Cycling, Walking and Safer Streets grants to local authorities, who can add to this amount if cycling is a priority in their areas.

The Cycling Action Plan is currently undergoing a refresh in consultation with key stakeholders. We continue to invest in cycling infrastructure to achieve our shared vision of 10% of all journeys being by bike by 2020;

The annual Hands Up Scotland Survey (HUSS) for 2011 shows that 3% of pupils normally travel to school by bike. Figures for 2011 show that 2% of journeys to work in Scotland are made by bike and 13% by walking. The first ever Rail Cycle Hub was opened on 3 May at Stirling railway station by the Transport Minister. It will provide advice to locals and tourists on how to travel around the area by bike. In 2011, 44 million trips were made on the National Cycle Network in Scotland.

**ii. widespread travel planning, including a range of measures to encourage its use and improve its impact in organisations and schools. For households we will review the Scottish-based Smarter Choices, Smarter Places demonstration programme, following the current tranche of work, and use the lessons learned to work with COSLA, Regional Transport Partnerships and Local Authorities to consider how best to deliver Personal Travel Planning post-2011;**

Personalised travel planning has been provided to households through the £15 million Smarter Choices Smarter Places demonstration programme, funded jointly with COSLA and delivered in seven communities. This has now been subject to a full evaluation, and next steps will be developed with stakeholders in the wake of dissemination of the learning.

Evaluation indicates car driver trips reduced significantly in four of the seven areas. EST is also funded to support public and private sector organisations in the transition to low carbon transport through smarter travel measures, including travel-planning. Organisations are engaged through the provision of Grey Fleet Reviews and the operation of a Low Carbon Transport Loan Fund, while the Choose Another Way website, continues to provide free travel planning advice.

Since 2011, The Low Carbon Transport Loan Fund has provided £700,000 of interest free loans to 32 organisations enabling them to invest in equipment such as cycling storage facilities and video-conferencing equipment that has enabled employees to reduce business travel and increase active travel. The scheme will be continued in 2013-14 offering a further £210,000 to businesses who wish to undertake low carbon transport activities. The Scottish Government funds Sustrans to support local authority school travel co-ordinators.

### **iii. management of car parking and road space - working with COSLA, Local Authorities, and business organisations to consider potential policies relating to parking management, and examining any legislative requirements;**

Our low carbon aspirations are currently focussed on technology change and voluntary behaviour change. The former is illustrated by our promotion of low carbon vehicles and intelligent transport systems; the latter by our investment in public transport and active travel. We envisage that innovative improvements to public transport and travel information, as well as continued investment in cycling and walking will encourage more drivers to leave their cars at home. This is a long-term delivery agenda as changes steadily take effect within society over time and it is important that evaluation is undertaken to ensure that appropriate progress is being made before moving to possible alternative approaches, taking a measured approach.

We are working in partnership with the public and private sector sectors through, for example, the Public Sector Climate Action Group and the 2020 Climate Group (transport sub-group) to encourage their approaches to low carbon transport over a wide variety of areas. The 2020 Climate Group are seeking to lead other businesses and organisations by example and have recently issued a "Transport Challenge" encouraging businesses to take actions across four areas to reduce their transport carbon footprint.

### **iv. working with Local Authorities to increase the number of car clubs in Scotland and explore innovative funding packages that may support new car clubs;**

The Scottish Government has provided funding to establish 15 new car clubs across Scotland since 2010. Per annum, car clubs save approximately 36 MWh. Over 6000 drivers are members of a club across Scotland. Through its development of innova-

tive and cost-effective car clubs, the DCCS programme has contributed to Transport Scotland's aims to achieve energy efficiency and carbon reduction in transport.

**v. supporting the bus industry in adopting low carbon buses;**

Through the Scottish Green Bus Fund we have provided grant totalling £7.7 million and assisted the purchase of approximately 94 low carbon buses since 2010. Each new bus is expected to produce 30% less emissions and require 60% less fuel than a diesel bus, to deliver an average emissions reduction of around 21 tCO<sub>2</sub>e per year or 300 tCO<sub>2</sub>e over its life-cycle.

**vi. continuing to promote modal shift to rail and more efficient rail services;**

Since 2007, Scottish Government investment has supported a significant expansion of the rail network with new routes, new stations and new trains. £430 million investment saw 38 new electric trains added to the fleet last year, adding 7,500 passenger seats a day to our rail network. Since 2007, 6 new stations have opened. £230 million investment in Paisley Corridor improvements and infrastructure works on Ayrshire and Inverclyde routes were completed in February of this year. As a result of investment, patronage figures have increased year on year and in 2012-2013, 83.3 million passengers travelled by rail. On 21 June 2012, the Minister for Transport and Veterans announced a £5 billion package of funding and investment in Scotland's railways between 2014 and 2019 including a commitment to further electrification of the rail network.

- It electrifies the core Edinburgh Glasgow via Falkirk line, delivers the redevelopment of Queen Street and Haymarket Stations, and the new Edinburgh Gateway station. Electric services will be introduced on the Cumbernauld line in time for the Commonwealth Games 2014.
- Commitment to 100 km per annum of electrification after Phase 1 of the Edinburgh-Glasgow Improvement Project. (EGIP)

We operate four freight grant schemes to encourage the transfer of freight from road to rail or water, where the road option is cheaper. Since April 2007 (to March 2012) freight mode shift grant funded projects have removed over 52 million lorry miles from Scotland's roads by transferring freight from road to rail and water. The Scottish Ministers' 2012 High Level Output Specification includes a Scottish Strategic Rail Freight Investment Fund of £30 million which will enable infrastructure enhancements in Control Period 5 (2014-2019) to support our rail freight policy which aims to encourage increased modal shift to rail for freight, from less sustainable modes.

**vii. continuing to promote the benefits of high speed rail as a long-term infrastructure investment.**

The Scottish Government will work with the Department of Transport to develop proposals for high speed rail to Scotland. High speed rail could reduce Scotland-to-London journey times and attract passenger numbers from aviation.

**Action 7.3 We will encourage more efficient driving and reduce energy consumption in the transport network by:**

**i. working with industry and motoring and freight organisations to establish how the driver training market can best deliver eco-driving training to improve vehicle efficiencies and reduce fuel consumption;**

We continue to work with the Scottish Freight and Logistics Advisory Group and other freight stakeholders to share best practice, identify opportunities for freight efficiencies and to reduce carbon emissions from the sector. Fuel efficient driving training courses for HGV drivers are now commercially available after earlier subsidised provision to demonstrate the benefits of the training and to establish the training provider network. In addition, Freight Best Practice advice with supporting case studies is provided on the Transport Scotland website<sup>48</sup>.

The Energy Saving Trust is funded to offer subsidised fuel efficiency training to car and van fleet drivers and targeted individuals. In both 2011-12 and 2012-13, around 6,000 drivers benefited from this investment, with a further 3,000 set to benefit in 2013-14.

**ii. reducing carbon from the Scottish vehicle fleet by raising awareness of available UK funding support for Low Carbon Vehicles ( LCVs) and building on this with specific Scottish interventions, e.g. encouraging the public sector to show leadership through the visible procurement of LCVs and the required infrastructure;**

Over the last two years, local authorities and their community planning partners have received over £8 million from the Low Carbon Vehicle Procurement Support Scheme, resulting in around 270 low carbon vehicles being added to public sector fleets. We have installed 315 charging points for electric vehicles and by the end of 2012-13 plan a network of around 485 charging points in accessible locations across Scotland. In March 2012 we launched the E-cosse partnership<sup>49</sup> bringing together Transport Scotland with car manufacturers, power companies, local authorities and WWF Scotland to advance wholesale adoption of electric vehicles. Integral to this collaboration is communication and education, promoting understanding and acceptance of electric vehicles, linking to funding in the UK and Europe.

**iii. seeking to improve the operational efficiency of our trunk road network through the deployment of Intelligent Transport Systems;**

Work is underway to determine how to make optimal use of the motorway network and a report is being produced to consider the optimal deployment of managed motorway technologies, including variable speed limits and message signs, ramp metering, average speed enforcement, and targeted use of the hard shoulder as an additional 'managed lane' for priority vehicles, as appropriate. The report's recommendations will be considered for detailed design.

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<sup>48</sup> [www.transportscotland.gov.uk/road/policy/freight/best-practice](http://www.transportscotland.gov.uk/road/policy/freight/best-practice)

<sup>49</sup> [www.e-cosse.net](http://www.e-cosse.net)

However, various components of Intelligent Transport Systems have already been included as part of the M74 completion and M80 Stepps to Haggs major infrastructure projects. The M77 hard shoulder running scheme is now moving into detailed design stage. Following the completion of this work, and funds being available, the scheme will be taken forward for construction.

**iv. continuing to operate the trunk road and motorway network in the most efficient manner and seeking to reduce energy consumption by roadside electrical equipment; and**

The micro-hydro-generation trial (proof of concept) at a location on the A83 is now complete, and the report is being finalised. The findings will be presented shortly and it is intended after that to publish a brief summary of the trial.

Transport Scotland continues to incorporate requirements for intelligent operation of road lighting assets in all new contracts, where possible. Specifically, detailed discussions are taking place in the context of the M8 M73 M74 Motorway Improvements. Also we are in discussion with various parties with a view to trialling wind-based micro-generation techniques mounted on our lighting columns. It is important to note however that these discussions are at an early stage.

In addition, Photo Voltaic (PV) panels have been installed at four Scottish railway stations - Larbert, Leuchars, Kirkcaldy and Dunfermline. An on-going programme of works, which will see wind turbines, low energy waiting room heaters and fuel management systems installed and with all savings used to re-invest in similar projects, will continue until 2014.

E-cosse is a partnership between government, WWF Scotland and key industry stakeholders such as Scottish Power, SSE, Siemens, Axion, Allied Vehicles, Nissan and Toyota, to advance adoption of electric vehicles (EVs) in Scotland. It aims to establish Scotland as an EV pioneer, maximizing the economic, environmental and social benefits of EVs as an integral part of a sustainable transport system and a smart energy grid.

**v. continuing to support the rail industry in developing emission reduction techniques.**

In June 2012 we announce a £5 billion package of funding and investment in Scotland's railways between 2014 and 2019 including a commitment to further electrification of the rail network.

## H. Developing the Skills for Energy Efficiency

**“In making the most of the new opportunities presented by energy efficiency, we will ensure that our training and education systems are ready and capable to develop the required skills and knowledge so that as many people as possible take up the openings in employment.**

*The Scottish Government's Skills Strategy refresh, published October 2010, sets out [our] overall approach to supporting the Government Economic Strategy Key Sectors, including energy. The ambition is to deliver a skills system that is fully aligned with the future growth objectives of key sectors, addressing the demographic profiles within the current workforce and anticipating the future skill challenges which new technologies and business growth opportunities will present.” EEAP, page 81*

Priority Area	Actions	Completed	Partially Completed
Skills	5	4	1

Since the publication of the EEAP the Scottish Government has continued to work with key stakeholders in this sector to maximise opportunities to create Green jobs, to up-skill our workforce and to support the insulation industry through our programmes, including the £79m Home Energy Efficiency Programmes for Scotland, which will require our workforce to be trained and ready for challenges such as large scale solid wall insulation installations.

The improvements outlined in energy efficiency and renewable heat in Scotland over the next decade mean that new jobs requiring a skilled workforce will be created in sectors where there is an opportunity to develop and gain competitive advantage. Tens-of-thousands of new direct and indirect jobs could be created nationally in high-value adding sectors, with the potential to deliver significant, environmentally beneficial impacts, including in energy efficiency and microgeneration.

There are five actions in this section, of which four have been completed and one is ongoing.

**Action 8.1 We will assess the energy efficiency skills demand and current activity by:**

- i. undertaking a programme of work to draw on existing labour market information from Sector Skills Council and Scottish Government surveys;**
- ii. assessing the skills implications of this predicted demand in terms of: i) numbers of employees affected; and ii) the level of engagement required to support energy efficiency in Scotland; and**
- iii. working with Sector Skills Councils and other industry bodies to undertake an assessment of current and planned training provision with an energy efficiency emphasis.**



Working with Sector Skills Councils, we published a research report in 2011 forecasting future opportunities in energy efficiency and microgeneration in the built environment and the possible skills implications<sup>50</sup>;

We have established a Low Carbon research group with representatives from Scottish Government, Scottish Enterprise, Highlands and Islands Enterprise and Skills Development Scotland to consider future economic opportunities and the skills implications in the low carbon economy. The focus of this group will be to assess these issues across a number of sectors to explore the low carbon opportunities that exist with a view to publishing a report that will be of benefit to industry practitioners;

The Scottish Funding Council has provided financial support to establish the colleges Scotland's Energy Skills Partnership. This provides a collaborative approach to delivering energy skills across Scottish colleges, including local delivery and sector focused clusters to meet existing industry and inward investor needs.

An Energy Skills Action Group<sup>51</sup> has been established under the Energy Advisory Board to oversee and co-ordinate delivery of the Skills Investment Plan for the Energy Sector published by SDS in March 2011.

Our Low Carbon Skills Fund, delivered by Skills Development Scotland (SDS), has supported over 2,100 episodes of training in energy and low carbon skills since 2010. Through SDS, we have made it easier for SMEs to hire staff and take on apprentices.

**Action 8.2 We will strengthen our links with the skills work carried out by the UK Department for Energy and Climate Change ( DECC) and its Green Deal skills project, tying in with the Energy Efficiency Partnership for Homes skills work group.**

The Scottish Government worked closely with DECC, Asset Skills, Construction Skills and other partners to ensure that there is the skilled workforce – both assessors and installers - in Scotland to support the recent launch of the Green Deal.

We are keen to ensure that the UK Government's Green Deal and Energy Company Obligation (ECO) initiatives can be delivered in Scotland. A key element of this is helping Scottish businesses do what is required to prepare. We know that this might require firms to up-skill or diversify so we have just launched a new service which will support Scottish businesses and local suppliers to acquire new skills, access training, and achieve certification for the energy efficiency and renewables markets with a particular focus on Green Deal and ECO. It will help maximise spend by the Green Deal and ECO on Scottish and local suppliers. As well as workshops, events and one-to-one advice, this service will assist Scottish companies in making contacts with key buyers in these markets such as the fuel suppliers, local authorities, housing associations and major contractors and access any funding that may be available.

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<sup>50</sup> <http://www.scotland.gov.uk/Publications/2011/10/04142122/0>

<sup>51</sup> <http://www.scotland.gov.uk/Topics/Business-Industry/Energy/resources/working-groups/energy-advisory-board/SkillsThemed>

**Action 8.3 We will establish a delivery-focused skills group, made up of key partners, to agree a framework for taking forward energy efficiency and micro generation skills activity.**

We have established the Low Carbon Economic Opportunities and Skills Implications Group to understand future low carbon opportunities across a number of Scottish business sectors and to consider what additional skills activities might be required as a result.<sup>52</sup>

**Action 8.4 We will raise business awareness of the skills implications of forthcoming regulations and requirements, demonstrating clear demand and the need to invest in skills.**

We continue to support SME businesses to up-skill their existing workforce in energy efficiency and other low carbon training through the Low Carbon Skills Fund, which will be funded for a further year in 2013/14.

**Action 8.5 We will actively promote the development of skills and innovation in energy efficiency for the design and construction sector by:**

- i. developing low-carbon and sustainable industries and disseminating good practice through projects such as Scotland's Housing Expo 2010;**
- ii. supporting industry in achieving energy efficient solutions through initiatives such as the Scottish Sustainable Communities Initiative Design Competition.**

We support the eleven exemplar SSCI projects and similar initiatives which promote the design of low-carbon communities and emphasise active travel within their approach to design. The SSCI Charrette Mainstreaming programme (which has developed from the SSCI) promotes the consideration of these design criteria in the creation of visions for the future development of existing communities.<sup>53</sup>

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<sup>52</sup> <http://www.etp-scotland.ac.uk/>

<sup>53</sup> <http://www.scotland.gov.uk/Topics/Built-Environment/AandP/Projects/SSCI/Mainstreaming>

## I. Financing Energy Efficiency

**“We will pursue our work on financing energy efficiency on three fronts:**

- i. making the case for spending on energy efficiency in future budgeting decisions as part of our broader climate change and economic agendas;**
- ii. seeking to maximise the contribution that other public funding, e.g. from Europe, can make; and**
- iii. exploring new finance mechanisms.**

*Energy efficiency is recognised as having the potential to be the simplest and most cost-effective way of meeting climate change requirements. Government funding for energy efficiency, at both UK and Scottish levels, is already substantial. However, there are further projects for which finance still has to be identified, and the necessary work to promote energy efficiency across all sectors clearly cannot be funded by Government on its own, especially during a time of overall budget restrictions.”*  
*EEAP, page 87.*

Priority Area	Actions	Completed	Partially Completed
Financing Energy Efficiency	3	3	0

The Scottish Government’s Economic Strategy (refreshed in 2011) identified the transition to a low carbon economy as a new strategic priority which will be central to maximising Scotland’s sustainable economic growth rate - particularly in the long-term.

A focus on increasing resource efficiency - water, waste, energy and materials (including critical raw materials) - across all areas of the Scottish economy and adopting sustainable business practices will boost our long-term productivity performance. The better we are able to adopt low carbon practices the greater our comparative and competitive advantage will be relative to our competitors. This focus on resource efficiency will also help the Scottish economy become more resilient to increasing global demand for scarce resources.

Edinburgh was selected as the headquarters for the world’s first green investment bank, the UK GIB. Capitalised with £3 billion over the period 2012-2015 the bank will focus on commercial investments in offshore wind, the Green Deal, non-domestic energy efficiency, waste and energy from waste. The Scottish Government has established an advisory group to work with stakeholders across Scotland to identify and facilitate projects seeking investment from the UK GIB .

In 2007-2008, Scotland’s low carbon market was worth around £8.5 billion (8.5% of the Scottish economy) and is forecast to rise to around £12 billion by 2015-16; jobs in the low carbon sector could grow by 4% a year to 2020, rising from 70,000 to 130,000, over 5% of the Scottish workforce.

There are 3 actions in this section, all of which have been completed.

**Action 9.1 We will ensure appropriate Scottish Government funding for energy efficiency activity, based on the contribution that this can make to our climate change targets and economic development .**

To support the Transition to a Low Carbon Economy key actions include:

- A £70 million National Renewables Infrastructure Fund to help leverage private sector investment to develop the infrastructure across the country to support offshore renewables and ensure that Scotland becomes Europe's green energy powerhouse
- Positioning Scotland as a world leader in low carbon activities - a sector which, with the right incentives, could support 130,000 jobs by 2020
- Investing in further improving the quality of Scotland's housing stock, including initiatives to improve energy efficiency and tackle fuel poverty. We are investing £79 million in the Home Energy Efficiency Programmes for Scotland (HEEPS). This investment is expected to attract additional funding from energy companies to create a total fund of around £200 million a year.
- From 2007 to 2013, we invested £23 million in supporting business and public sector organisations through the Carbon Trust; resulting in total annual savings of up to 1.37 MtCO<sub>2</sub> and up to £153 million. Around £3 million has been invested since 2007 into Energy Saving Trust (EST) for non-domestic advice. Between 2007 and 2011, EST worked with over 2,500 organisations and have achieved annual cost savings of £4.4 million and 63 GWh energy savings.
- Going forward we support the £7 million Resource Efficient Scotland programme to support resource efficiency in businesses, public sector and third sector organisations – with the Advice and Support service targeting savings of at least £21 m per year to organisations in Scotland including energy efficiency savings of 45 GWh.

The £20 million Central Energy Efficiency Fund (CEEF) funding was split between the 32 Scottish Local Authorities (LAs) (£15)), NHS Scotland (£4 million) and Scottish Water (£1 million). The funding was provided to implement energy efficiency measures and renewable measures.. across the organisations" estate and which have a simple payback of no more than 7 years for energy efficiency or 10 years for renewable measures. The interest free loan is paid back through energy savings and reinvested in further carbon reducing measures or for frontline services.

To date, the CEEF fund has delivered over 800 capital projects which have produced cumulative estimated lifetime CO<sub>2</sub> Savings of over 940 ktCO<sub>2</sub>, with NHS Scotland providing around 167 ktCO<sub>2</sub> and Local Authorities and Scottish Water around 770 ktCO<sub>2</sub> of that figure.

We have invested £5 million to support the Salix Finance loans funds for Higher and Further Education to improve the energy efficiency of their estates. The total savings to date for Scotland since 1<sup>st</sup> October 2010 from 138 projects worth £5.7 million amount to 6.2 MWh annually and 109.4 MWh over the projects' lifetime.

As part of the Green Investment package, the Scottish Government has invested a further **£10.3 million** between 2012-2014 to accelerate energy efficiency projects

across the public sector, specifically the NHS, HE/FE estates and emergency services.

The Scottish Government has invested around **£11 million** into the SME loan scheme since 2008/09. In 2012/13, Scottish SMEs, private landlords, not-for-profit organisations and charities received a total of 167 loans out worth over £4.65 million (£3.84 million on renewables technologies and £810k on energy efficiency). These loans were funded by £2.98 million Scottish Government investment in 2012-13 and repayments of previous loans. This should produce lifetime energy savings of 40,630 MWh and lifetime carbon savings of 16.7 kt CO<sub>2</sub>.

The Scottish Government invested almost £300 million in domestic energy efficiency and fuel poverty programmes between 2007-08 and 2011-12. We will spend a further £250 million over the next three years. This includes the Home Energy Efficiency Programmes for Scotland (HEEPS) (we are investing £79 million in 2013-14) which aims to leverage an additional £120 million per annum from Energy Company Obligation (ECO).

**Action 9.2 We will actively engage with UK and EU funding policy for energy efficiency, with a view to maximising the value of UK, EU and other international funding in Scotland.**

The Scottish Government has developed the Scottish Partnership for Regeneration in Urban Centres (SPRUCE), the £50m JESSICA investment fund, in conjunction with European Commission and European Investment Bank (EIB). Regeneration of our deprived and disadvantaged communities is a key priority, with **£15 million** set aside for a retrofit programme in social housing stock. The Regeneration Strategy, **Achieving a Sustainable Future** launched on 12 December 2011, of which the JESSICA model is a key strand.

We are investing £79 million in the Home Energy Efficiency Programmes for Scotland (HEEPS). This investment is expected to attract additional funding from energy companies to create a total fund of around £200 million a year. To incentivise householders to take full advantage of the Green Deal, we established our £20 million Green Homes Cashback Scheme, in November 2012 offering individuals up to £1200 to install energy efficiency measures. Vouchers worth over £3.2 million in total have already been issued.

**Action 9.3 We will investigate new and further funding options for implementing energy efficiency programmes, working closely with the Scottish Low Carbon Investment Project, the 2020 Group, and other appropriate groups to investigate alternative funding models.**

The Technology Innovation Needs Assessment (TINA) on Non Domestic Buildings - estimates that innovation in the non-domestic buildings sector could result in savings of 86 MtCO<sub>2</sub> and c.£13 billion by 2050 across the UK and export opportunities of around £1.7 billion to the UK GDP to 2050.

Indicative analysis by the Scottish Futures Trust indicates that an **investment of £350 million** in low carbon measures - across the Scottish public estate - could lead to potential **cost reductions in the region of £900 million**.

Scottish Government is working closely with the Green Investment Bank, Scottish Futures Trust and Resource Efficient Scotland to bring forward a nationwide programme of energy efficiency projects across the public sector estate. Engaging with the Green Investment Bank to establish where there are opportunities for large scale private investment; supplementing public sector investment and accelerating the programme.

### **Scottish Futures Trust (SFT) Low Carbon workstream**

SFT has initiated a Low Carbon Workstream to develop commercial delivery structures to aggregate projects and establish national programmes of energy efficiency projects. The aim is to realise investment potential, attract in private finance, as well as reduce costs for all authorities and the wider public sector. This will be achieved through:

- developing public sector approaches to energy performance contracting, especially those which may be capable of being funded from Government's revenue budgets. This work will initially focus on pilots involving a NHS Health Services Scotland building and Glasgow City Council's primary school estate.
- supporting the business case for energy efficiency investment within Scotland's street lighting estate – an initiative which could save Scotland's local authorities up to 15 % of their electricity bills (~£130 million). SFT will provide support to two pilot projects at East Dunbartonshire Council and West Dunbartonshire Council as they move towards pre-procurement for street lighting; and working with all Local Authorities to consider feasibility for similar programmes across their estates.

## J. Taking Energy Efficiency Forward

**We will seek to drive forward energy efficiency through our partnerships within Scotland and our national and international engagement, using these to promote and learn from best practice.**

*„As is clear from throughout this plan, we need to achieve a step change in our levels of energy efficiency and to take advantage of the environmental and economic opportunities in reducing consumption and developing environmental clean technologies. Achieving our ambitious climate change targets will require action from across society, including central and local government, business and industry, communities and individuals. Given the global implications of climate change and the scale of effort required worldwide, we also need to work with our partners at a UK and European level and beyond.” EEAP, page 92*

Priority Area	Number of Actions	Actions Completed	Partially Completed
Taking Energy Efficiency Forward	3	3	0

The Scottish Government is committed to strengthen Scotland's voice in Europe, aiming to ensure that Scottish interests are fully represented at the European level, while making clear to the rest of Europe the wealth of experience and resources Scotland has to offer as a nation.

Our **Action Plan for European Engagement** sets out that engagement is focussed on four key areas, including energy, where Scotland can achieve real benefits in the long run and also where we can demonstrate to the European Union that Scotland is a constructive partner that can play a leading role and contribute for the wider benefit of EU citizens.

There are 3 actions in this section, all of which have been completed.

**Action 10.1 Within Scotland, we will provide leadership and develop strong partnerships to help share best practice and ensure that everybody plays their part in driving forward energy efficiency.**

The Scottish Government works with a range of partners across all sectors. In the domestic sector, we established the Sustainable Housing Strategy Group bringing together housing, environmental, fuel poverty and consumer protection groups to develop a strategy for our vision of warm, high quality, affordable, low carbon homes and a housing sector that helps to establish a low carbon economy across Scotland. Following last year's consultation, we will deliver a final strategy in 2013. We have created the Home Energy Efficiency Programmes for Scotland and will work with local authorities, housing associations and the energy suppliers to maximise the delivery of the Energy Company Obligation in Scotland.

Our new Resource Efficient Scotland Programme (see action 4.1) has created a strong partnership through Zero Waste Scotland, the Energy Saving Trust and the Carbon Trust to provide a holistic approach to business advice and support.



The Scottish Government's Economic Strategy (refreshed in 2011) identified the transition to a low carbon economy as a new strategic priority. A focus on increasing resource efficiency: water, waste, energy and materials (including critical raw materials), across all areas of the Scottish economy and adopting sustainable business practices will boost our long-term productivity and performance.

The Agenda for Cities established this transition as one of the four themes where city collaboration can deliver individual city ambitions. The Scottish Cities Alliance, (in collaboration with the Scottish Government) brings together our 7 cities, to attract investment, stimulate economic activity and create jobs. It is supported by a **£7 m** Cities Investment Fund, £2m of which is focused on supporting low carbon activity, designed to develop programmes that lever in other funds that support collaborative programmes between cities which will develop large scale projects.

**Action 10.2 We will work with partners from across the UK to promote joint working and learning, and will be asking the UK Government to guarantee that its new policies will support the aims of this Energy Efficiency Action Plan.**

We have a close working relationship with officials at UK Government which has enabled us to evaluate and contribute to the UK Energy Efficiency Action Plan, the UK Energy Efficiency Strategy and to have official representation on the UK Energy Efficiency Deployment Office and its Ministerial oversight group. We have worked closely with UK in the development of the Green Deal and the ECO making sure that Scotland's particular circumstances are being taken into account.

**Action 10.3 We will further the aims of this plan through our international engagement and by seeking to influence European policy in line with our common interests in energy efficiency.**

We have established strong links with our counterparts in UK Government, providing input to the UK Energy Efficiency Strategy (published in November 2012) and have official representation on the UK Energy Efficiency Deployment Office (EEDO). We also worked with the UK Government on a joint negotiating position on the European Energy Efficiency Directive which was agreed and ratified in November 2012. The aims of the Directive in ensuring energy efficiency is a key priority should stand us in good stead in the period leading up to 2020. The Directive encourages refurbishment of public buildings, the installation of smart meters, and greater promotion of the benefits of energy efficiency. In addition, larger enterprises will be required to undertake energy audits and SMEs encouraged to undertake them. These steps should all contribute to educating, informing and enabling a change in behaviours to a more sustainable way of living.

## **5. Summary and conclusions**

Since the publication of the EEAP in 2010, the Scottish Government has been committed to working closely with a range of partners and stakeholders in all sectors to deliver the actions that will contribute to the achievement of the challenging 12% reduction in final energy consumption in 2020. Whilst some of the progress against the target can be attributed to the impact of the recession latest energy figures indicate that we are on track to meeting the target. The latest energy trends data for 2010 showed a slight increase in consumption compared to 2009 due in part to the economic recovery from the previous year and a particularly cold winter. Consumption in 2010 was still 6.2% lower than the 2005-2007 baseline against which the 12% energy efficiency target is measured.

The Scottish Government's focus on energy efficiency, integrating energy and resource efficiency across its portfolio, sets a leading example and contributes to wider UK and EU energy efficiency targets and sets an example.

We have established strong links with our counterparts in UK Government, providing input to the UK Energy Efficiency Strategy (published in 2012) and have official representation on the UK Energy Efficiency Deployment Office (EEDO). We also worked with the UK Government on a joint negotiating position on the European Energy Efficiency Directive which was agreed and ratified in November 2012. The aims of the directive in ensuring energy efficiency is a key priority should stand us in good stead in the period leading up to 2020. The Directive encourages refurbishment of public buildings, the installation of smart meters, and greater promotion of the benefits of energy efficiency. In addition, larger enterprises will be required to undertake energy audits and SMEs encouraged to undertake them. These steps should all contribute to educating, informing and enabling a change in behaviours to a more sustainable way of living.

By adopting a sectoral approach we have been able to focus on the actions, programmes and policies that will help us to make a difference, encouraging the involvement across government of key policy leads and also enabling effective engagement with a range of stakeholders.

This pro-active approach has helped to ensure that over 90% of the actions we set out in the plan have been delivered. Of the remaining actions, good progress is being made.

Energy efficiency has a significant role to play, not only to reduce energy demand, and related carbon emission but also to mitigate rising energy bills for domestic and non-domestic consumers; support the eradication of fuel poverty, and contribute significantly to the Scottish economy. The UK energy efficiency strategy highlights the opportunity. For example, the sector in the UK already accounts for 136,000 jobs and had sales of £17.6 billion in 2010/11 and a substantial proportion of this activity is in Scotland. The strategy also estimates that socially effective investment in energy efficiency could save 196TWh in 2020, equivalent to 22 power stations

Energy efficiency is integrated within mainstream policies. Over the next period the Scottish Government has set out its strategic direction and planned actions for these, including:

A draft **Sustainable Housing Strategy** published as a consultation in 2012 ;and the final publication of which will be in summer 2013, set out a route map and vision to 2030 for high-quality, warm, low-carbon including the launch of our **£79 million Home Energy Efficiency Programmes for Scotland (HEEPS)** in April 2013 which is expected to attract additional funding from energy companies to create a total fund of around £200 million a year.

Having launched **Resource Efficient Scotland** in April 2013 for energy efficiency, waste, water and material resource efficiency we will support to businesses and, public sector and third sector organisations to **target savings of at least £21 million per year** for these organisations in Scotland.

Working with the Scottish Futures Trust, Resource Efficient Scotland, COSLA, NHS Health Facilities Scotland we will bring forward a **nationwide programme of energy efficiency projects across the public sector estate** including; converting to greener street lighting and non-domestic building retrofit; attracting investment from the private sector such as the Green Investment Bank. Projects like this are important as indicative analysis by the Scottish Futures Trust indicates that an investment of £350 million in low carbon measures - across the Scottish public estate - could lead to potential cost reductions in the region of £900 million. We support the development of a national green investment pipeline of private and public sector projects across Scotland ,engaging with the Green Investment Bank, European Investment Bank and private sector investors to establish where there are opportunities for large scale private investment; supplementing public sector investment and accelerating the programme

We published our Outline Heat Vision on 29 January 2013 and set out our ambition to have a largely decarbonised heat sector by 2050, with significant progress made by 2030 taking into consideration environmental, economic and social aims; and our intention to publish later this year a **Draft Heat Generation Policy Statement** for consultation. We held an Expert Commission on District Heating which reported in November 2012 and we will shortly publish the **District Heating Action Plan**, setting out its detailed response to the recommendations of the Expert Commission and the roadmap for these recommendations are being taken forward by Government, industry and other stakeholders.

The Scottish Government is committed to driving energy efficiency improvements through building standards. The Sullivan report, „A Low Carbon Building Standards Strategy for Scotland“ published in 2007 made a wide range of recommendations. These included step changes to energy standards within building regulations in support of the ambition for Scotland to achieve net zero carbon buildings by 2016/17, if practical. In view of the economic downturn, the Sullivan Panel reconvened in May 2013 to review some of the recommendations made. It is expected that the Panel will report back in late summer/early autumn.

We are also **developing regulations under Section 63** of the Climate Change (Scotland) Act 2009 requiring the energy performance of **existing non-domestic buildings** to be assessed. Owners will either carry out physical improvement work to the building or make arrangements to measure, report and display operational ratings after such an assessment.

For existing housing, in Summer 2013, we are **introducing new energy efficiency standards for social housing**, setting initial targets to be met by 2020. We will have also committed to consulting by Spring 2015 on draft regulations for a minimum standard for private sector housing to be introduced in 2018.

Transport Scotland have worked with a range of stakeholders to provide greater choice to our citizens about decisions on modes of transport. We are investing over **a billion pounds in 2013-14 in public transport and other sustainable travel options** to encourage people to leave the car at home.

Future updates on progress against the 2020 target, as required under section 62 of the Climate Change (Scotland) Act 2009, will be provided in **Energy in Scotland: A Compendium of Scottish Energy Statistics and Information**<sup>54</sup> published annually.

We believe that the pro-active programmes and policies put in place by the Scottish Government will maximise the opportunities to conserve energy whilst simultaneously achieving economic growth. Our continuing investment in fuel poverty and insulation programmes in the domestic sector, the holistic approach we have taken to resource efficiency support for business, our ongoing review and continuous improvement in building standards, and our successful efforts to leverage additional funding from a variety of sources all contribute to the Scotland's attainment of our objectives and our ambitious 2020 target.

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<sup>54</sup> <http://www.scotland.gov.uk/Publications/2012/03/2818>



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