CONSERVE AND SAVE: THE ENERGY EFFICIENCY PLAN FOR SCOTLAND

Annual Report 2010-11

The Scottish Government

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Introduction

The Scottish Government published **"Conserve and Save: The Energy Efficiency Action Plan for Scotland"** in October 2010. This plan introduced, for the first time, a headline target to reduce final energy (end-use) consumption **by 12% by 2020** using a 2005-7 baseline as published by the Department of Energy and Climate Change (DECC). The plan also outlined across 10 priority areas the actions that the Scottish Government would take in support of the 12% reduction target.

The Energy Efficiency Action Plan is one of a suite of documents which outlines the Scottish Government's strategy to tackle climate change; cut greenhouse gas emissions; reduce energy consumption and to achieve sustainable economic growth.

The other documents contained in this package include:

- The Low Carbon Economic Strategy;
- The Report on Proposals and Policies (Low Carbon Scotland: Meeting the Emissions Reduction Targets 2010 -2022);
- The Government Economic Strategy (which was recently updated and now includes a new strategic priority "Transition to a Low Carbon Economy");
- The Scottish Renewables Action Plan;
- The 2020 Routemap for Renewable Energy in Scotland and the Renewable Heat Action Plan;
- The Public Engagement Strategy.

Section 62 of the Climate Change (Scotland) Act 2009 requires Ministers to lay before the Scottish Parliament a report on steps that have been taken in implementing the Energy Efficiency Action Plan within 12 months of the original plan being published.

This report sets out the progress made on each section on the Action Plan outlining some of our high level achievements since the plan was published. As well as demonstrating actions that directly contribute to the 12% target, it also details some of the supporting activity that contributes towards progress on the key actions within each sector.

Data

Our energy efficiency target is being monitored using the annually reported total final energy consumption data based on the Department of Energy and Climate Change (DECC) sub-national energy statistics. This data is reported annually each December and has a historic trend from 2005.

Figure 1 shows how the baseline for the target was calculated in Conserve and Save. Figure 2 shows by how much energy consumption would have to reduce and the maximum consumption allowable in 2020 with a 12% reduction target using this baseline.

Figure 1: Total Final Energy Consumption (GWh)

Period	Total Consumption
Actual data 2005	159,717
Actual data 2006	157,747
Actual data 2007	158,045
Average 2005-07 (baseline)	**158,503**

Figure 2: Original Target Ambition (GWh)

Baseline Consumption	2020 Targeted Reduction - 12%	2020 Maximum Consumption
158,503 GWh	19,000 GWh	139,500 GWh

However, DECC has since revised the energy consumption figures for 2005-7 so the initial baseline has increased to **159,770 GWh** which has an impact on the reduction in energy consumption required to achieve the 12% reduction target. Figure 3 details the revised baseline data and Figure 4 shows the impact of the revision on the target reduction in energy consumption and maximum consumption in 2020.

Figure 3: Total Final Energy Consumption (GWh) – Updated Baseline

Period	Total Consumption
Actual data 2005	162,704
Actual data 2006	158,274
Actual data 2007	158,331
Average 2005-07 (baseline)	**159,770**

Figure 4: Impact of revision to DECC baseline figures

Revised Baseline Consumption	2020 Targeted Reduction – 12%	2020 Maximum Consumption
159,770 GWh	19,200 GWh	140,600 GWh

The impact of this approach results in:

- Increased energy reduction in absolute terms;
- No change in the percentage reduction in energy consumption;
- An increased absolute final 2020 maximum consumption target.

This means that, by adhering to our commitment to reduce energy consumption by 12%, consumption needs to fall by an **additional 200 GWh** by 2020 compared to the pre-revision reduction of **19,000 GWh** target as set out in the Energy Efficiency Action Plan. The Scottish Government believes that this revised target is achievable on the basis of existing and planned policies and programmes that will be in place by 2020.

The update on the national data sub-sets from Department of Energy and Climate Change (DECC) is not due to be published until 22 December 2011 as there is a historical time lag in collating data for previous years. This means that this report is unable to accurately record at present our 2009 progress towards the target of a 12% reduction by 2020 until 2012.

To avoid this situation recurring each year, we will bring forward the publication of the next annual report to Spring 2012 and each subsequent report will be published 12 months after that and beyond to adhere to the new reporting cycle.

Implementing the plan

Section C of the Action Plan identifies **Scottish Government actions and programmes; priority areas and support.**

Here we set out the focus of our activity, key achievements, and provide an indication of the work that is in progress to facilitate the achievement of the 12% final energy consumption target by 2020.

1. **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."

Achievements and Work In Progress

- We published a paper in Autumn 2011 on determinants of energy efficiency behaviours;
- We have commissioned research on encouraging more sustainable workplace behaviours – a report will be published in February 2012.

2. Domestic Energy Efficiency

"Improve the energy efficiency of the domestic sector, 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."

Energy Efficiency is a top priority for Scottish Government – assisting people to use less energy will help them to save money and will be vital in tackling fuel poverty. Towards that end, we will invest almost £200m through our domestic energy efficiency and fuel poverty programmes over the next 3 years.

Almost 300,000 Scottish citizens received advice and support from the Energy Saving Scotland advice centre (ESSac) network in 2010-11.

The £50m Warm Homes Fund will be delivered over the course of the current Parliament to support energy efficiency, renewable energy and other measures for the fuel poor.

The Universal Home Insulation Scheme will continue in 2011-12. All thirty-one local authorities which bid will receive a share of the £12.5m available to deliver UHIS in 2011-12. Awards range from £130,000 to East Renfrewshire to £810,000 for Glasgow. This will allow 200,000 homes across Scotland to be offered support.

The boiler scrappage scheme offers householders a £400 voucher to homeowners to replace a boiler with the poorest energy efficiency rating with a new energy efficient model. A £2.5m scheme that will offer 6,000 households vouchers was launched in June 2011. This is in addition to over 6,800 vouchers paid in support of householders and private landlords in 2010-11, supported by over £3 million. Replacing 5,000 boilers saves around 5,000 tonnes of carbon dioxide per year – equivalent to taking around 2,000 cars off the road.

We worked with the CERT Strategy Steering Group to redesign our domestic energy efficiency and fuel poverty programmes to maximise uptake of CERT. Scotland's share of professionally installed cavity wall and loft insulation measures installed across Great Britain increased from 6.6% in 2008-9 to 9% in 2009-10[1]. The indicative figure for 2010-11 also shows an increase to 10.5%. This data is based on voluntary submissions by suppliers and there is some data missing, particularly for the last quarter of the third year, thus it can only be used as an indication of delivery.

[1] It should be noted that Ofgem figures show that the total number of installations across GB went down in 2010-11.

Additional Achievements

- The Energy Assistance Package has grant funded more than 22,000 heating installations since April 2009;
- 132,977 low income, potentially fuel poor clients received advice and support via the Energy Saving Scotland advice centre (ESSac) network in 2010-11;
- 699 domestic home loans for boiler replacements and insulation measures worth £3.46m were paid in 2010-11 and the Scottish Government has made a commitment to extend this scheme for future years;
- Over 20,000 people received sustainable transport advice, including how to drive in a fuel efficient manner, public transport options and vehicle purchase from the ESSacs in 2010-11;
- 350 home renewables grants worth £4.26m were approved in 2010-11;
- 14,275 householders were given water efficiency advice across Scotland, following a successful pilot in Edinburgh;
- Between November 2009 and the end of March 2011, half a million households were offered energy advice and free or discounted insulation through Scottish Government schemes, and 57,000 measures have been installed;
- Historic Scotland have carried out a successful pilot encompassing 11 discrete projects on hard to treat properties, including listed buildings and tenements - which has demonstrated that economically feasible interventions are possible in traditional buildings without loss of material or character and provides an excellent base for future interventions;
- The Scottish Government and COSLA issued joint guidance on Local Housing Strategies (LHS) to strengthen current local authority coverage on climate change and an introductory seminar programme for LHS officers has been delivered.

Work In Progress

- The Scottish Government has been working closely with DECC on the development of Green Deal and the future Energy Company Obligation (ECO) to ensure that they can be implement in Scotland in a manner that meets Scotland's specific circumstances to make it easier for Scottish householders to benefit from these schemes;
- We are working with social landlords and others to develop a climate change standard for social housing that goes beyond the Scottish Housing Quality Standard. The working group is expected to draft a standard for public consultation by mid-2012, with the new standard finalised by the end of the year;
- The Cabinet Secretary for Infrastructure and Capital Investment has set up a new high level strategic group to involve stakeholders in the delivery of our commitments on sustainable housing and the development of a Strategy for Sustainable Housing in Scotland. The group will consider a range of issues affecting both new and existing housing including how to retrofit Scotland's existing housing stock to make it more energy efficient.

Domestic Energy Efficiency Case Studies

The Scottish Government funds the Energy Saving Trust (EST) and local authorities to deliver energy efficiency and fuel poverty programmes in the domestic sector, including the management of the Energy Assistance Package. and (through local authorities) the Universal Home Insulation Scheme (UHIS). The domestic case studies below give an indication of the types of support provided which have helped householders reduce their energy consumption and save on their fuel bills.

Domestic Energy Efficiency Case Study No. 1 – Glasgow

Georgina, who lives in the north west of Glasgow, is one of the many people who have taken advantage of the Energy Assistance Package, and has been enjoying a warmer home and lower energy bills as a result.

The initiative is funded by the Scottish Government and managed by the Energy Saving Trust. Open to people across the country, it aims to cut bills, boost incomes and make homes warmer and more energy efficient.

Some people even qualify for free home improvements like a new boiler, central heating system, and insulation through the programme.

Georgina and her teenage son Euan, live in a mid-terrace home built in the 1960s. With a broken heating system giving no hot water, their home also had one of the lowest energy efficiency ratings possible – making it extremely hard to heat. This was a big problem for Georgina, who also runs her household on a low income. But she then discovered they would qualify for a replacement central heating system and loft insulation top-up.

She called up about the Energy Assistance Package in June last year. The savings that Georgina has made through Energy Assistance Package are significant.

The improvements and the new boiler have halved the CO_2 output from her home, dropping from 7.7 tonnes a year of to just 3.8. The CO_2 saved is the equivalent produced when driving 11,600 miles in the average car.

As a result, Georgina's annual energy bills are set to fall from an average of £2,047 per year before her new system was installed (and her heating system broke down) to an expected £740 per year now, a reduction in cost of 64% and an estimated saving of over £1,300 on her annual fuel bills.

The service also provided Georgina with some other tips for saving money and saving energy in her home. Her advisor, Andy suggested small alterations – like turning the thermostat down. Setting temperature controls just 1 ºC lower is a change that few people would notice but can save up to 10% off bills, or around £55 per year.

Find out more by calling the Energy Saving Scotland advice line on 0800 512 012.

Domestic Energy Efficiency Case Study No 2 - Dumbarton

Lorraine and Kenny from Dumbarton are a couple with a disabled child. Their home used to be extremely hard to heat. Now they are one of many families across Scotland enjoying a warmer home, lower energy bills – and a safer home thanks to the Energy Assistance Package.

Lorraine's family also benefited from carbon monoxide monitors in their home to make sure that their central heating system is safe as well as warm.

Lorraine said: "Kenny and I are more than happy with the Energy Assistance Package. Because of our circumstances, Kenny is a stay-at-home dad, and as much as we knew we wanted – and needed – a new boiler, we couldn't afford it. Our house was built at least 20 years ago. With Kenny being at home we knew just how cold the house could be. He was relying on the gas fire to keep the living room warm, so as you can imagine it wasn't cheap to run."

Their home, built pre-1980 still had the original back boiler – but this was condemned. A surveyor performed an energy audit at their home and recommended that they receive a new heating system with combination-boiler.

The surveyor also looked at other aspects of their home, and made sure they got cavity wall insulation too - which can reduce heat loss through walls by 60%. They also received carbon monoxide monitors to make their home safer. Lorraine's home is now so much more energy efficient that she may be able to save up to £1,205 each year. Also her house will emit 4 tonnes less CO_2 each year – the same volume would more than fill up a whole hot air balloon. Lorraine's estimated fuel bills have reduced by 65% since the new system was installed.

Domestic Energy Efficiency Case Study No 3 - Kirkcaldy

Dad-of-three Martin believes the Energy Assistance Package has helped turn a cold house into a family home.

Martin, who lives in a semi-detached home in Kirkcaldy, Fife, enquired about the programme after his father recommended it to him last year.

His dad had received a new central heating system through the programme. And after seeing how happy his father was with the scheme, decided to call the Energy Saving Scotland advice line – 0800 512 012 – to see if he could benefit too.

Martin said: "I have three children, one aged 19 months, the others are 17 and 18 years old. One of our children is disabled, which is one of the reasons that we qualified for support through the Energy Assistance Package.

"My dad recently had a new central heating system installed under the same scheme and the difference in his home was night and day. Our home wasn't freezing, but some rooms were colder than others. Especially when you have children running around leaving doors open everywhere – there can be a draught!

"Considering how happy my dad was, I thought I would apply. They arranged for a surveyor to come round who told me I could get cavity wall and loft insulation, a new central heating system with combi-boiler and new radiators.

There's been a big difference since the installation happened. The house is warmer which makes it a much nicer place to be. It feels like a cosy, warm home; even when the weather is at its worst. It is great for all the family."

Martin's house is now 60% cheaper to run because it's much more energy efficient. His home CO_2 emissions have been cut by 2.7 tonnes a year -the equivalent amount would fill 15 double-decker buses. Martin can now save up to £847 on his annual fuel bills, as his annual running costs have reduced by an estimated 61%.

"The whole experience has been great. The cost of my energy bills should drop, and the checks that the Energy Saving Trust arranged left me confident that I'm getting access to every benefit that my family should be entitled to.

"I would recommend anyone who thinks they could benefit through the Energy Assistance Package to get in contact. I've told everyone I know to do so.

"Even if you don't qualify for improvements to your home, the Energy Saving Trust can give you advice that will help you in some way."

3. Energy Efficiency for Business

"We will support businesses to maximise 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 Scottish Government has invested around £5m annually since 2007-08 to fund the Carbon Trust to help business and the public sector to reduce carbon emissions and improve business efficiency, resulting in approximately 250 kt CO_2 implemented carbon savings annually and £30m savings on energy bills annually.

Achievements

- The **Low Carbon Economic Strategy**, published November 2010, sets out our plans to move towards a low carbon economy in Scotland, as part of the Government's overarching Economic Strategy;
- We have established a single Scottish Energy and Resource Efficiency Service (SERES), bringing together key delivery bodies (including Carbon Trust, Energy Saving Trust, Zero Waste Scotland, SEPA, the enterprise agencies and Business Gateway) to provide greater cross-referral and more consistent and comprehensive advice, encouraging businesses to consider a holistic approach to their low carbon transition. As a first stage, the virtual SERES service was launched in summer 2011 through a new portal on the Business Gateway website;
- Our funding of the Carbon Trust led to Scottish businesses implementing measures in 2010/11 which saved them around 250 GWh of energy, generating annual cost savings of around £11 million.
- Scottish SMEs, private landlords and not-for-profit organisations received a total of 84 loans worth £2.4m from the Energy Saving Scotland small business loans scheme in 2010-11;
- The annual VIBES (Vision in Business for the Environment of Scotland) awards ceremony held each November has a new energy award category, launched in November 2010.

Work In Progress

- We have set up the Environmental and Clean Technologies Partnership (including Scottish Enterprise, Highlands and Islands Enterprise, SEPA and the Scottish Funding Council) focusing on economic opportunities in priority sub-sectors where Scotland has comparative advantage: its research strengths and its innovative business base.
- The Scottish Government is leading on the Scottish Low Carbon Investment project, a public-private partnership which identifies investment propositions, explores different models of investment in innovation and connects with the international investment community;
- We have commenced wide stakeholder engagement on simplification of the Carbon Reduction Commitment (CRC) scheme and will launch a formal consultation on this topic in early 2012.

Business Energy Efficiency Case Studies

The Scottish Government funds the Carbon Trust to support businesses to save energy, cut carbon emissions and reduce costs, whilst improving their productivity and profitability. This case study gives an indication of the savings that can be achieved by businesses through the Carbon Trust's Carbon Management Programme.

Business Energy Efficiency Case Study No 1 – Diageo

The **Diageo** bottling and packaging facility at Shieldhall, Glasgow is the world's largest whisky bottling plant, producing over 26 million cases of spirits annually.

Decentralisation of heating at the plant enabled the company to achieve significant energy and therefore operating cost savings and a quick payback period (2.7 years) for the project's capital expenditure (£598,000). The boilers were approaching the end of their operational life and the heating system was inefficient. Diageo - with advice from the Carbon Trust - replaced the old centralised heating system with a number of smaller gas-fired point-of-use systems, which are more efficient. They also took the opportunity to install a Building Management System, enabling flexible, localised control of the heating.

Diageo has eliminated a number of sources of inefficiency and standing losses which wasted energy regardless of the demand for heating. The modern de-centralised point-of-use system achieves efficiency levels which are typically over 85%. The total annual energy reduction achieved has been recorded as **10,553 MWh**. Annually, the total energy cost savings are £219,000 with an estimated reduction of 3,337 tonnes of CO_2 emissions.

Energy Saving Scotland Small Business Loans Scheme

The Scottish Government funds the Energy Saving Trust to provide support to Scotland's SMEs via the Energy Saving Scotland small business loans scheme. Since it began in December 2008, the scheme has helped SMEs across Scotland increase their profitability and reduce their environmental impact. It loaned over £2.4 million last year to assist 84 businesses, producing very significant financial, energy and carbon savings. The scheme supports smaller SMEs, that is those with an annual energy spend of under £30,000.

More information on the Energy Saving Scotland small business loans scheme is available at:
www.energysavingtrust.org.uk/scotland/Scotland-Welcome-page/Business-and-Public-Sector-in-Scotland/Grants-loans-awards/Small-business-loans

Business Energy Efficiency Case Study No 2 - The Commodore, Holm, Orkney

The Commodore is a multi-purpose entertainment venue, encompassing a bar and restaurant which is based in Holm, Orkney. The proprietor, Diane Grieve sought energy efficiency advice and support via the Energy Saving Scotland advice centre (ESSac) network in July 2007. The ESSac network is funded by the Scottish Government and managed on their behalf by the Energy Saving Trust. Following on from this an Energy Saving Trust approved consultant visited the Commodore and prepared a detailed report that recommended implementing a number of energy efficiency and renewable measures.

At the time of the visit, the proprietor indicated that her primary concern was the increasing cost of her electricity bills (in the region of £15,000 per annum). The consultant indicated that a 6kW wind turbine would have the potential to save in excess of £2,500 per year, through the generation of approximately 16,900 kWh. This equates to an annual CO_2 saving of 7.3 tonnes.

In order to proceed with the recommendation to install a wind turbine, Diane sought financial support via the Scottish Government's Energy Saving Scotland small business loan scheme and the Scottish Rural Development Programme since the cost of the turbine would be over £27,000. Her application for both forms of support were successful and she received a grant for 30% of the turbine costs via SRDP and she chose to access the small business interest free loan to assist with a further 50% of the cost of the turbine. The loan was offered in March 2009 and the £14,000 loan was paid in January 2010 once the installation of the turbine had occurred and a site inspection taken place.

In addition to this Diane has chosen to implement the energy efficiency recommendations from her energy report, meeting the costs herself without further accessing public funds. She has indicated that her wind turbine averages 15,500 kWh of generation per annum, and this taken along with the energy efficiency improvements has significantly reduced the costs for her business.

Business Energy Efficiency Case Study No 3 - Active Sustainable Energy Systems

Active Sustainable Energy Systems has adapted its expertise in the field of air conditioning to meet its customers' rapidly growing sustainable energy needs.

Founded in 1999 by Ian Nicol, the company diversified into air source heat pumps (ASHPs) in 2008. It was a natural progression for Active which has since installed over 300 ASHPs. The company offers heat pumps to both homes and offices that are cheaper to run and more environmentally-friendly than traditional heat sources such as oil, gas-fired or electric boilers.

Two years ago, in order to make the business transition, Active launched a new headquarters that would showcase the heat pumps it now offers to customers. With an Aberdeen location facing directly on to the North Sea, the resultant state of the art facility has been hailed as one of the most energy efficient buildings in the UK.

Thanks to a £100,000 Energy Saving Scotland small business loan the company was able to install a 50kW ground source heat pump, energy efficient lighting, and heat recovery ventilation as a major part of the building's energy saving measures.

Rajini Sokhi, renewables manager at Active Sustainable Energy Systems, explains: "My colleague was researching different loan schemes when she came across the Energy Saving Scotland small business loans scheme. The actual application form was really simple and a helpful expert came in to carry out an audit and identify what would qualify for the loan."

The result is the first and only A-rated building in Aberdeen. The Active Renewable Energy Centre (AREC) is completely self-sufficient. It generates all of its own energy through a combination of micro-renewable technologies.

Active's 50kW heat pump has helped reduce the firm's CO_2 emissions five-fold compared with its former office space. Likewise Active's fuel costs which would normally be around £28,000 per annum for an office the same size, actually only amount to an estimated £5,611 per year.

4. 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 exemplary behaviour."

Achievements

- Our funding of the Carbon Trust led to Scottish public sector, higher and further education bodies implementing measures in 2010/11 which saved them around 300 GWh of energy, generating annual cost savings of nearly £14.5 million.
- A further 40 organisations graduated from the Public Sector Carbon Management programme, including smaller bodies such as Sport Scotland and a number of police and fire services. This takes the total number of bodies who have developed a Carbon Management Plan to around 130;
- The Government On-Line Performance Sustainable Information Exchange (GOLSPIE) web portal on environmental data project was approved and implemented in summer 2011.

Work In Progress

- An evaluation of the Central Energy Efficiency Fund (CEEF) for local authorities and Scottish Water was undertaken in Summer 2011, including recommendations for maximising benefits from the scheme, some of which have already been taking forward. This includes increasing payback periods for projects, to encourage more ambitious energy saving installations.

Public Sector Case Studies

As well as support to businesses, the Scottish Government funds the Carbon Trust to support the public sector to save energy, cut carbon emissions and reduce costs through the Carbon Trust's Carbon Management Programme. These case studies give an indication of the progress being achieved by public sector organisations.

Public Sector Energy Efficiency Case Study No 1 - Strathclyde Partnership for Transport (SPT)

Strathclyde Partnership for Transport (SPT), the public body responsible for planning and co-ordinating the public transport system in Strathclyde, devised a Carbon Management Plan in conjunction with the Carbon Trust at the end of 2010, with a view to reducing its carbon emissions by 20% over a 5 year period. The plan focuses on projects that save energy and reduce emissions from the operational side of the organisation, namely the delivery of Subway and bus services across the west of Scotland.

SPT has already completed a lighting upgrade over 15 Subway stations, involving a switch from T12 and T8 mains frequency lighting to T5 high frequency lighting. To date the project has yielded £50,000 of financial saving, reduced energy use by 59 MWh and achieved over 300 tonnes of CO_2 savings. In addition, measures have been taken to install a specially designed sophisticated lighting control system at Shields Road Park and Ride. It is anticipated the upgrade, which will use LED fluorescent tubes, will help cut energy bills there by up to 70%.

Public Sector Case Energy Efficiency Study No 2 - The National Library for Scotland

The **National Library of Scotland** (NLS) graduated from the Carbon Trust's Carbon Management programme in September 2010 with a commitment to save energy and reduce its carbon emissions by 30% by 2015. With the support and guidance of the Carbon Trust a number of projects have been planned to help NLS achieve this projected saving, all of which will change the way the organisation operates. This includes on-going work to develop low energy techniques for storing and preserving the National Collections with reduced levels of artificial temperature and humidity control. Compared with a baseline year of 2008/09, implementation of NLS's Carbon Management Plan has already delivered 2010/11 energy savings of 1,153 MWh and financial savings of more than £260,000.

"The excellent workshops, website and professional help from the Carbon Trust have all helped the NLS exceed our challenging targets and helped us reduce our carbon footprint. We have already achieved an 18% reduction in carbon dioxide emissions and this has been due to the creativity, knowledge and energy of staff, contractors and unions working at all levels and in innovative ways," says Tom Proudfoot, NLS Green Group Coordinator.

Public Sector Energy Efficiency Case Study No 3 – Scottish Fire and Rescue Services

In a cohesive approach to energy saving and carbon emission reduction all **Scottish Fire and Rescue Services** signed up to the Carbon Trust's Carbon Management Programme in 2010. One Fire and Rescue Service set an overall target to reduce its carbon emissions by 20% by 2015, which is expected to translate into an anticipated gross energy saving of 317 MWh per annum. This in turn, will translate into £197,000 in total cumulative energy cost savings by year five. Examples of actions undertaken include energy efficiency plans being incorporated into new building proposals, and a team of environmental champions appointed to reduce energy use and environmental impact in the workplace.

Their deputy chief fire officer said: "Following consultation with the Carbon Trust we have wholeheartedly embraced its Carbon Management Programme, to the extent that we've invested approximately £400,000 to upgrade our 40 year old Fire Safety Headquarters and Fire Station to produce an energy efficient building."

5. Achieving energy efficiency through Building Standards

"We will drive improvements to the energy efficiency of Scottish building stock through building standards."

Achievements

- New energy standards delivering a 30% reduction in CO_2 emissions in new buildings against 2007 standards were introduced in October 2010;
- Sustainability labelling for domestic buildings was introduced to the Building Standards technical handbooks in May 2011;
- New standards are in place to introduce improved energy efficiency measures for extensions conversions and alterations;
- New standards are in place for the improvement of existing buildings triggered either by the extension of a dwelling or work to an existing non-domestic building with a building services component.

Work In Progress

- We are committed to continuing to drive forward action on energy efficiency and will continue to explore options for improving energy efficiency of existing non-domestic building stock through a working group. We intend to develop regulations for 2012.

6. Infrastructure for the Built Environment

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

Achievements

- We established a £2.5m district heating loan fund for local authorities, housing associations and SMES for both low carbon and renewable technologies;
- We carried out a successful heat mapping pilot in the Highland region and funding has been secured for replication of the project in other local authorities;
- We awarded a £1m grant to Aberdeen City Council to Aberdeen Heat and Power to develop and extend their district heating network across the city;
- Scottish Water have prepared a report ahead of schedule outlining their plans to promote water conservation and water-use energy.

7. 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."

Achievements

- 150 Low Carbon Vehicles (LCV) have been procured through the LCV Procurement Support Scheme;
- 48 low carbon buses have been procured through the Scottish Green Bus Fund and the 15 buses began running in Edinburgh in September 2011;
- Photo Voltaic (PV) panels have been purchased for 3 Scottish railway stations so far (Leuchars, Kirkcaldy and Dunfermline) at a cost of £55,600 with more projects in the pipeline**.**

Work In Progress

- We have worked with 10 communities to gauge appetite for developing Car Clubs in those areas.

8. 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."

Achievements

- We are supporting SME businesses to up-skill their existing workforce in energy efficiency and other low carbon training through the Low Carbon Skills Fund, delivered on our behalf through Skills Development Scotland;
- Working with Sector Skills Councils, we have published a research report forecasting future opportunities in energy efficiency and microgeneration in the built environment and the possible skills implications;
- 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 employment opportunities and the skills implications in the low carbon economy;
- The initial focus of this group will be to assess these issues in the Chemicals and Construction 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 also provided financial support for the recently established Energy Skills Partnership providing a collaborative approach across Scottish colleges, including local delivery clusters to meet investor needs;
- The Environmental Technologies Training Centre was opened in 2010 by the Minister for Enterprise, Energy and Tourism and is designed to provide training in Micro-Renewable Technologies to the Scottish Plumbing, Heating & Ventilating and Electrical Installation industries. This is a joint venture between SELECT, SNIPEF and HVCA;
- An Energy Skills Employer Group 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.

Work In Progress

- We are committed to supporting the development of Green Skills Hubs and Academies to further support a collaborative, partnership approach to meeting future green skills needs;
- We have committed to deliver an additional 500 energy modern apprenticeships in 2011/12, a number of which will be in energy efficiency.

Energy Efficiency Skills Case Study

Skills Development Scotland's Low Carbon Skills Fund* provided funding to Merchant Homes Partnership, a specialist company dedicated to building comfortable homes with lower maintenance and higher energy savings. The company participated in solar photovoltaic training, with an emphasis on energy efficiency and conservation. The training allowed Merchant Homes staff to learn how to recognise the advantages and disadvantages of solar photovoltaic while discovering when it can be most effective.

"Company personnel gained an understanding of standard layouts, upcoming feed in tariff and energy effectiveness (payback and pounds spent against carbon output)." – Russell Ferguson Director Merchant Homes.

The Low Carbon Skills Fund

The Low Carbon Skills Fund gives Scottish businesses with up to 250 employees the opportunity to apply for up to £12,500 towards employee training costs. It

- Provides funding for up to 25 episodes of training;
- Provides 50% of training costs, up to a maximum of £500 per episode.

By increasing expertise in this growth area we can harness the opportunities offered by our natural resources to make Scotland a world leader in sustainable energy.

These include training in:

- Renewable energy, low carbon technologies and microgeneration;
- Energy efficiency, environmental and clean technologies;
- Waste management and reuse;
- Reducing carbon in supply and energy management.

The Fund cannot be used for statutory training. An example is F Gas training, where the training may be eligible for funding, however the accreditation is not. The low carbon fund can be used for training relevant to emerging legislation in the low carbon sector. See programme guidance for details.

More information on the Fund is available at:
www.skillsdevelopmentscotland.co.uk/our-services/services-for-employers/training/low-carbon-skills-fund.aspx

9. 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 the broader climate change and economic agendas;
ii. Seeking to maximise the contribution that other public funding can make to energy efficiency, such as from Europe; and
iii. Exploring new finance mechanisms."

Achievements

- The refresh of the Government Economic Strategy (GES) published on 12th September 2011 has introduced an additional strategic priority "**Transition to a Low Carbon Economy"** with an increasing focus on resource efficiency, including energy efficiency;
- We will continue to fund and deliver the hugely successful Climate Challenge Fund. This initiative has empowered 345 communities across Scotland to take forward their own solutions to make a significant reduction in carbon emissions. We have published an independent review of the first 3 years of the scheme's successful operation.

Work In Progress

We are investing:

- Almost £200m through our domestic energy efficiency and fuel poverty programmes over the next 3 years. We also aim to maximise leverage of additional funding from energy companies and other sources, including the CERT and CESP;
- £69m in taking action to reduce the impact of transport by reducing congestion and supporting better public transport, active travel and low carbon vehicles.

10. 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.”

Achievements

- The Scottish Low Carbon Investment Conference 2011 took place on September 27th and 28th, chaired by Al Gore, and follows the success of last year's inaugural event, attended by around 550 delegates from government, low carbon industries and the financial sectors. Its focus extended to include investment in energy consumption, resource efficiency and clean technologies;
- Energy Efficiency is on the agenda of the high-level Energy Advisory Board, joint chaired by the First Minister and Professor Jim McDonald of The University of Strathclyde, which meets quarterly.

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www.scotland.gov.uk

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