APPENDIX 2

Environment and Sustainable Communities Overview and Scrutiny Committee

Reducing the Council's Carbon Emissions Scrutiny Review

Durham County Council

Please ask us if you would like this document summarised in another language or format.

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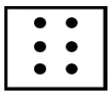
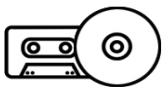
 Braille  Audio  Large Print

Contents

Section One - Foreword

Lowering carbon emissions to reduce the impact of global warming is one of the Council's key objectives.

Since May 2009 Durham County Council has been part of the Local Authority Carbon Management Programme which assists councils in saving money on energy whilst making a positive contribution to protecting the environment.

In April 2010, the Council published a five year Carbon Management Plan which commits the Council to the challenging target of reducing the carbon emissions from its own activities by a minimum of 40% by 2015.

As the Council is now midway through its Carbon Management Programme, the Environment and Sustainable Communities Overview and Scrutiny Committee has undertaken a review to assess whether the Council is on course to:

- reduce the carbon emissions from its own activities by 40% by 2015,
- deliver savings in energy costs,
- include carbon budgets in its Service Plans and
- create a 'low carbon culture' within the Council

The report concludes with a number of recommendations for consideration by the Council's Cabinet.

I would like to thank all those who gave evidence, my County Councillor colleagues, together with co-opted representatives who worked with me on this scrutiny review, and finally the officers, who supported and advised the Review Group.

Councillor Dan Myers
Chair

Environment and Sustainable Communities Overview and Scrutiny Committee – Reducing the Council's Carbon Emissions Scrutiny Review Group

Section Two - Executive Summary

1 Cutting carbon emissions to mitigate the impact of climate change is a key objective in the Altogether Greener Section of the Council Plan 2012-16. As a local authority, Durham County Council is well placed to drive and influence emission reductions through the services it delivers and its regulatory and strategic functions. The Council has been part of the Local Authority Carbon Management Programme since May 2009, and has through its Carbon Management Plan, committed to reducing the carbon emissions from its own activities by a minimum of 40% by 2015.

2 The scrutiny review was undertaken to assess whether the Council is on course to meet the following targets and objectives included in its Carbon Management Programme:

a. To reduce CO_2 emissions by a minimum of 40% from the Council's 2008/09 baseline of 105,816 tonnes by 2015.

b. To deliver savings in energy costs of at least 20% against business as usual predictions by 2015.

c. To quantify the direct carbon emissions from the Council's activities and allocate ownership of those emissions to Service Groupings and services by 2012 to allow emissions reduction targets and carbon budgets to be included in Service Plans and monitored by 2013.

d. To create a 'low carbon culture' within the Council by raising awareness, providing formalised training and gaining support from staff and senior management.

3 The Review Group has considered the Council's Carbon Management Programme, its carbon emissions since 2008/09 and comparisons with other local authorities, energy costs, the capital projects being developed and implemented to help save energy and reduce emissions, the eco-champions network to promote environmentally positive behaviour, the school carbon reduction programme and the progress being made with regard to Service Groupings taking responsibility for their own emissions.

4 It found that the Council was currently midway through its five year Carbon Management Programme and during those years has focussed its attention on building the foundations on which to reduce emissions in the future. It has reduced carbon emissions from its own activities by 9% from its 2008/09 baseline of 105,816 tonnes, against a target of 14% for the period. Emissions have decreased each year, and when compared with other local authorities in the north east, the Council is performing well. Unfortunately, the cold weather experienced during the past few years has slowed the CO_2 emission reduction nationally.

5 As a result of the Carbon Management Programme and the associated reductions in energy usage, (including the closure of buildings under the accommodation strategy) the Council has avoided more than £2.75 million in notional additional energy costs in 2011/12, when compared to business as usual which assumed that usage increased year on year since 2009. Despite financial pressures, the Council is continuing to develop and undertake, through prudential borrowing, a number of

'invest to save' schemes, such as the Building Energy Efficiency Retrofits and the installation of biomass boilers, solar panels and an evaporative cooling system. These schemes will significantly reduce future energy consumption and carbon emissions. Priority is currently being given to those projects which offer the best return on investment, however as more projects are delivered typical pay back periods will increase.

6 A number of initiatives are currently being trialled or investigated in relation to street lighting such as dimming, trimming and switching off and an invest to save has been developed to retrofit or replace as deemed necessary, 41,000 lights with LEDS and include them in a centrally managed system to save in the region of 7,500 tonnes of carbon per year. The business case for this project was approved by Cabinet at its meeting on 12th December 2012. Members acknowledged that the bid would make a significant contribution to meeting the 40% carbon reduction target, however they requested that ward councillors be provided with information on any street lighting trial /scheme in their area as they were often the first port of call for queries or concerns from residents.

7 An Eco-Champions network has been established to raise awareness of how everyone can reduce carbon emissions through simple changes in working practices, and training on CO_2 reduction now forms part of the Council's staff induction programme, however it is important that existing staff receive training. Reducing the Council's business mileage and office energy consumption are two areas which the champions are currently focussing on.

8 In relation to business travel, the Council has set itself the target of reducing car business mileage by at least 10% in the current financial year. It is also looking to implement a Grey Fleet Policy and undertake a multi-skilling training programme for repairs and maintenance employees, which would reduce the amount of travelling between sites. Neighbourhood Services Service Plan also includes reviewing the possibilities for moving to alternative powered vehicles and providing fuel efficient pool vehicles at major depots. The Council is currently encouraging the use of both private and pool bicycles. In May 2012, it published a cycling for business policy and guidance. Officers who use their own cycles are able to claim a mileage allowance of 15p per mile. Making more use of innovative technology such skype and telephone conferencing, and promoting the availability of 'hot desks' at council offices throughout the county, could also help to reduce business mileage.

9 Schools in the County account for approximately 54% of the emissions from Council buildings. Although the Council does not have direct control over the energy used in the county's schools and academies, all their carbon emissions are included within the scope of the Carbon Management Programme. The Council is currently also responsible for their carbon footprint through the Carbon Reduction Commitment (CRC) Energy Efficiency Scheme (a mandatory carbon emissions trading scheme, which commenced in 2010 and applies to almost all local authorities as well as many private companies). However, reforms to the scheme were published in December 2012, which include withdrawing all state funded schools in England from the scheme.

10 With regard to energy consumption in new school buildings, the Council has achieved an outstanding BREEAM (British Research Establishment Environmental

Assessment Method) rating in respect of Brandon and Esh Winning Primary schools; the most sustainable buildings in the Council's property portfolio and a 'first' nationally.

11 In line with the Council's Carbon Management Plan, all Heads of Service are now responsible for reducing emissions from their service. All Service Groupings list actions aimed at reducing the Council's carbon emissions in their 2012 -16 Service Improvement Plans, and for 2013/14 they will have carbon budgets for car business mileage and fleet mileage. The Service Improvement Plans for 2013 – 17 will also include targets and actions to reduce carbon emissions. The service plan actions are currently monitored corporately, on an exception basis, as part of the Council's quarterly performance reporting process. However, both the Carbon Management Programme Board and the Council's Environment and Sustainable Communities Overview and Scrutiny Committee need to receive regular detailed information on the progress being made.

Recommendations

12 Members of the Environment and Sustainable Communities Overview and Scrutiny Committee noted the work being undertaken to meet the targets and objectives set out in the Council's Carbon Management Plan and recommended the following:

a) That Cabinet notes the importance of a corporate and co-ordinated approach in relation to reducing carbon emissions. This approach is facilitated through the Council's Carbon Management Programme Board and in order to continue to fulfil this function, Service Groupings should proactively engage with the Board to ensure a joined up and planned approach.

b) That in view of the recent increases in energy prices, the Council /Cabinet continues to explore opportunities to 'invest to save' that will result in significant reductions in energy consumption and carbon emissions and ultimately lead to savings and efficiencies. Consideration also needs to be given to whether schemes should be undertaken that provide the opportunity for large scale carbon reduction, but do not meet the usual financial pay back criteria.

c) That the Council's Elected Members be provided with detailed information on any trials/schemes in relation to street lighting in their area, prior to residents being notified.

d) That the drive to recruit more Eco Champions to promote simple energy saving changes continues, and that consideration be given to the possibility of providing Elected Members with information on the Council's Carbon Management Programme, as part of the corporate induction programme and seeking volunteers from Elected Members to act as Eco Champions.

e) That in relation to the need to reduce business travel, consideration be given to making more use of innovative technology such as skype, telephone conferencing, video conferencing and promoting the availability of 'hot desks' at council offices throughout the county.

f) That the Committee continues to monitor the progress being made to achieve the Council's carbon reduction targets through the current quarterly performance monitoring reports and receives regular updates by members of Council's Sustainability, Carbon and Climate Change Team and Carbon Management Programme Board.

g) That all staff and Elected Members be made aware of the Council's carbon reduction targets, the financial impact of energy use and the savings that can be made by using energy more effectively. This could be achieved through training sessions and the Council's performance appraisal scheme – focussing on staff actions/achievements that protect the County's environment and mitigate the effects of climate change.

h) That a systematic review of the report and progress should be undertaken six months after its consideration by Cabinet.

Section Three - Remit of Review / Methodology

Rationale

1 The work programme of the Environment and Sustainable Communities Overview and Scrutiny Committee reflects the five objectives set out in the 'Altogether Greener' section of the Council Plan 2012 -16. One of these objectives is to mitigate the impact of, and adapt to climate change which will reduce CO_2 emissions in the County Durham.

2 There is very strong evidence that the global climate is changing and warming will continue over the next century. The majority of climate scientists are of the view that much of the observed increases in global temperatures and the rising sea levels in recent decades are caused mainly by the human induced emissions of greenhouse gases.

3 As a local authority, Durham County Council is well placed to drive and influence emission reductions through the services it delivers and it has been part of the Local Authority Carbon Management Programme since 2009.

4 The Programme assists councils in saving money on energy, whilst making positive contribution to the environment by lowering their carbon emissions. It has involved the Council working closely with consultants from the Carbon Trust to establish a baseline position for the emissions from council functions and develop a 'Low Carbon Strategy for County Durham' and a 'Carbon Management Plan'. The latter commits the Council to reducing the carbon emissions from its own activities by a minimum of 40% by 2015 and sets out the actions to be undertaken between 2010 and 2015 to achieve this very challenging target.

5 The Committee at its meeting on 9th July 2012 agreed to review the work being undertaken by the Council reduce the carbon emissions from its own activities.

Objective

6 The objective of the review is to assess whether the Council is on course to meet the following targets and objectives included in its Carbon Management Programme:

- To reduce CO_2 emissions by a minimum of 40% reduction from the Council's 2008/09 baseline of 104,000 tonnes by 2015.

- To deliver savings in energy costs of at least 20% against Business as Usual predictions by 2015.

- To quantify the direct carbon emissions from the Council's activities and allocate ownership of those emissions to Service Groupings and services by 2012 to allow emissions reduction targets and carbon budgets to be included in Service Plans and monitored by 2013.

- To create a 'low carbon culture' within the Council by raising awareness, providing formalised training and gaining support from staff and senior management.

Savings in CO_2 that count towards the Carbon Management Plan include savings arising from:

- Reductions in energy consumption as a result of better practices, improvements in efficiency of plant and equipment or using alternative sources of fuel.

- Renewable energy generation, where the energy is used on the site where it is produced, including when Feed in Tariff or Renewable Heat Incentives are claimed – biomass boilers, wind turbines, solar panels etc

Focus

7 The Group considered the following:

- Drivers for carbon reduction - legislation and incentives such as the Climate Change Act 2008, Mayors Covenant, CRC Energy Efficiency Scheme, Feed in Tariff and Renewable Heat Incentive, European Energy Performance of Building Directive, Energy Efficiency Plan 2011 and the report of the Committee on Climate Change – 'How local authorities can reduce emissions and manage climate risk '

- Council's current level of carbon emissions and energy costs.

- Council's Carbon Management Plan, the use of a carbon emissions toolkit and the introduction of carbon budgets in Service Plans from 2013.

- Capital projects such as Building Energy Efficiency Retrofits (BEER), installation of solar panels on Council buildings and biomass boilers and the evaporative cooling system in the Council's data centre.

- Street Lighting – the work being undertaken to reduce energy costs and carbon emissions through expanding the centrally managed system and the introduction of LEDs.

- Eco Champions Programme, launched in 2010, to educate and train building users to reduce the energy which is wasted by leaving lights and computers switched on.

- Carbon reduction in schools and the role of school carbon reduction officers.

Approach / methodology

8 The information for the review was gathered using the following methods:

- Evidence from the Sustainability, Carbon and Climate Change Team, Street Lighting Engineer and Eco Champions.
- Reports/research by Overview and Scrutiny Officer.

Timescale

9 The review commenced in September and concluded in December 2012

Membership of the Review Group

10 Members of the Review Group were:

Councillor D. Myers (Chair)
Councillor B. Graham (Vice-Chair)

Councillors J. Alvey, J. Armstrong, E. Bell, R. Crooks, D. Farry, J. Gray, D. Hancock, G. Holland, E. Huntington, P. May, J. Moran, J. Rowlandson, W. Stelling, P. Stradling, Allen Turner, J. Wilson, M. Wood, C. Woods and S. Zair

Co-opted Members:
Mr. D. Bell, Mr. T. Bolton, Mr. D. Easton, Mr. O. Graham, Mr. D. Kinch and Mrs. P. Spurrell

Project Support Officers

11 The following officers supported the Review Group during the course of its investigations:

Feisal Jassat – Overview and Scrutiny Manager
Gillian Garrigan – Overview and Scrutiny Officer
Jocasta Lawton – Senior Democratic Services Officer

Section Four - Evidence

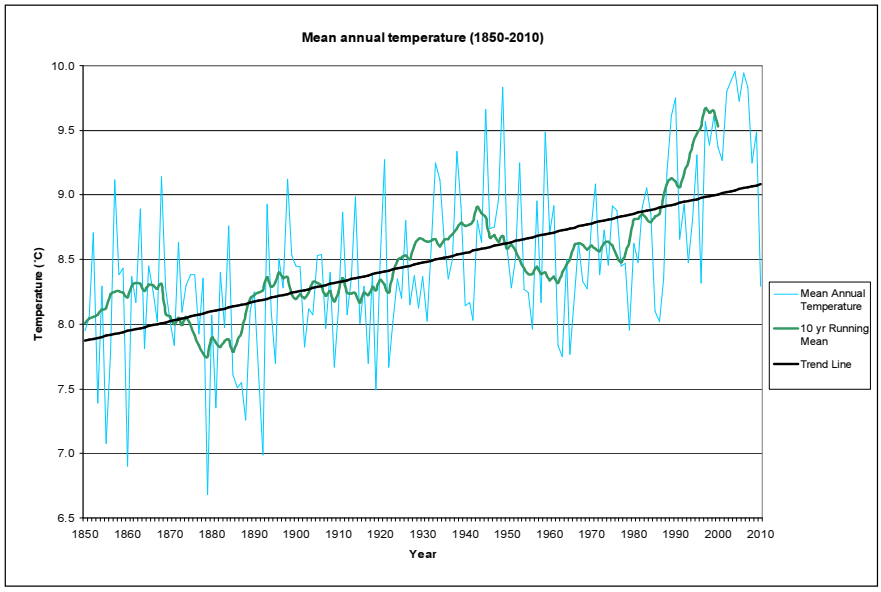
Drivers and Incentives for Carbon Management

12 There are a number of drivers and incentives for the Council's Carbon Management Programme.

Environmental Drivers

13 In scientific literature, there is a strong consensus that global surface temperatures have increased in recent decades, leading to more severe weather events - floods, droughts and storms and the trend is caused mainly by human-induced emissions of greenhouse gases. A formerly sceptical climate scientist Prof R. Muller who leads the 'Berkley Earth Project' has recently concluded that global warming was real and that humans were entirely the cause.

14 The graph below shows that the mean average temperatures for Durham City have risen since 1850. The information used to produce the graph was extracted from records kept at Durham University Observatory. It shows a positive correlation between carbon dioxide emissions and temperature and matches national trends showing that warming is occurring.



Local Drivers

EU Mayors Covenant

15 In 2009 Durham County Council along with the other 11 authorities in the North East became signatories to the EU Mayors Covenant. The Covenant is the mainstream European movement involving local and regional authorities, voluntarily committing to increase energy efficiency and use of renewable energy sources on their territories. By their commitment, Covenant signatories aim to meet and exceed the European Union 20% CO_2 reduction objective by 2020.

Sustainable Community Strategy for County Durham 2010 – 2030 and Council Plan 2012-16

16 Both documents identify the need to undertake actions to mitigate the impact of and adapt to climate change which will reduce the level of greenhouse gas emissions in County Durham.

County Durham Climate Change Strategy

17 This strategy sets out the vision and objectives of the County Durham Partnership that will take the Council to a low carbon County and help to meet the challenges posed by changes to the climate. It provides a framework to ensure that all future strategies and action plans of the Council and its partners embed climate change and sustainability actions throughout. The strategy has seven key themes that are essential in creating a low carbon and resilient County.

National Drivers / Incentives

Climate Change Act 2008

18 The Climate Change Act set legally binding targets to reduce greenhouse gas emissions by at least 34% by 2020 and 80% by 2050, against a 1990 baseline. It introduced a system of carbon budgets, which provide legally binding limits on the amount of emissions that may be produced in successive five-year periods, beginning in 2008. The Act established an independent body, the Committee on Climate Change (CCC), which advises the government on carbon budgets and monitors progress in meeting them in an annual report.

Feed-in Tariffs Scheme

19 The Feed-in Tariffs (FITs) scheme, introduced on 1 April 2010, under powers in the Energy Act 2008, is designed to promote the take up of small scale low carbon electricity technologies by the public and communities, to help to meet the UK's renewable energy target. The scheme covers the following electricity-generating technologies up to an installation size of 5 MW: solar electricity (PV) (roof mounted or stand alone), wind turbine (building mounted or free standing), hydro electricity, anaerobic digestion and micro combined heat and power (micro CHP). The tariffs available vary depending on when the technology was installed.

Carbon Reduction Commitment (CRC) Energy Efficiency Scheme

20 The above is a mandatory carbon emissions trading scheme, which commenced in 2010 and applies to almost all local authorities as well as many private companies. Under the scheme, the Council is required to report its carbon emissions and then purchase carbon allowances to cover the emissions generated. The number of allowances available reduces each year in line with government targets, pushing up the cost of allowances as supply decreases and encouraging reductions in energy use. One CRC allowance equals one tonne of carbon dioxide (CO2). For 2011/12 and 2012/13, it is £12 per tonne. The more energy efficient the Council can become the less it will have to pay.

21 Since receiving evidence for the review, the Department of Energy and Climate Change announced on 10th December 2012 that the CRC Energy Efficiency Scheme will be dramatically simplified from 1st June 2013, subject to Parliamentary approval, to save participating businesses and public sector organisations millions of pounds in administrative costs. The reforms to the scheme include reducing the number of fuels that participants have to report from 29 to 2 – electricity and gas for heating and withdrawing all state funded schools in England from CRC participation.

22 The Government's independent adviser the Committee on Climate Change, estimates that a carbon price of £30 per tonne of carbon dioxide in 2020 and £70 in 2030 would be required to meet the target of reducing carbon emissions by 80% by 2050, compared with 1990 levels.

Renewable Heat Incentive (RHI)

23 The Renewable Heat Incentive encourages the uptake of renewable heat by providing long term financial support to renewable heat installations. In the first phase, tariff support is available to non domestic renewable heat generators and producers of biomethane for 20 years. Non domestic includes businesses, public sector, charities, not for profit organisations and industry. Each technology has a different tariff level, which determines how much support is provided per unit of eligible heat generated, or biomethane produced. The technologies included in the scheme are: biomass boilers, solar thermal, ground source heat pumps, water source heat pumps, on-site biogas combustion, deep geothermal, energy from municipal solid waste and injection of biomethane into the grid.

The Carbon Plan 2011- Delivering our low carbon future

24 The Carbon Plan published in December 2011, sets out the Government's plans for achieving the emissions reductions committed to in its first four carbon budgets. Part 2 of the Plan includes the following targets:

- To reduce greenhouse gas emissions by 29% by 2017, 35% by 2022 and 50% by 2027.
- To insulate all cavities and lofts where practical by 2020
- By 2030 between 1 – 3.7 million additional solid wall installations and between 1.9 – 7.2 million other energy efficiency installations
- By 2030, 1.6 – 8.6 million building level low carbon heat installations such as heat pumps
- By 2050 emissions from UK buildings to be close to zero.

Climate Local initiative launched

25 Climate Local is a new initiative led by local government to drive, inspire and support council action on climate change. It succeeds the Nottingham Declaration on Climate Change and offers a framework that can reflect local priorities and opportunities for action. It supports councils' efforts to reduce carbon emissions and improve their resilience to the anticipated changes in the climate.

External Regulation

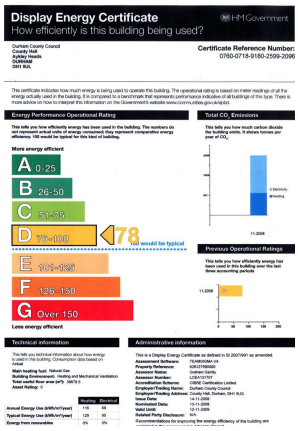
European Performance of Building Directive (EPBD)

26 The Energy Performance of Buildings Directive, adopted by the EU on 19th May 2010, is the main legislative instrument to reduce the energy consumption of buildings. This directive repealed and replaced the *EPBD 2002* from 1 February 2012.

27 Under the new directive, Member states must set and apply minimum energy performance requirements for new buildings and existing buildings that are undergoing major renovation and require the regular inspection of boilers and air conditioning systems in buildings.

28 New domestic building and schools in the UK have to be zero carbon in use by 2016, new buildings owned or occupied by the public sector must comply by 2018 and other non domestic buildings by 2019.

29 Energy performance certificates must be displayed in buildings over 500 sq m (instead of 1000 sq m under the *EPBD 2002*) that are occupied by public authorities and frequently visited by the public. This threshold will decrease to 250 sq m on 9 July 2015. Energy performance certificates must also be displayed in private buildings over 500sq m that are frequently visited by the public.



European Energy Efficiency Plan 2011

30 The Energy Efficiency Plan, adopted by the EU on 8th March 2011, aims to promote an economy that respects the planet's resources, implement a low carbon system, improve the EU's energy independence and strengthen the security of energy supply. The Plan emphasises the necessity to implement the means for reducing final energy consumption in buildings as this sector is responsible for almost 40% of the final energy consumption in Europe. It also states that Energy Service Companies may give financial assistance to public authorities to modernise/renovate buildings and thus reduce their energy consumption.

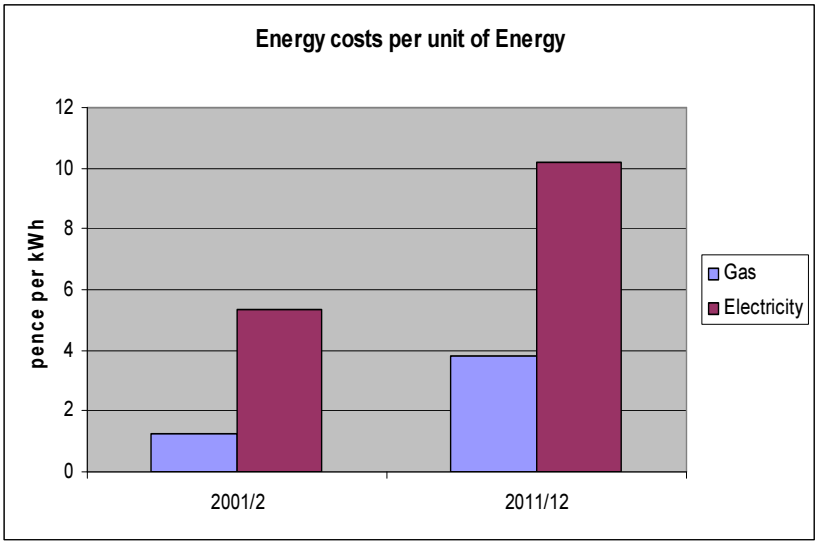
Economic Drivers

Rising Energy Prices

31 Energy prices have increased substantially over the past decade. The reasons for the increase are:

- The decline in North Sea natural gas reserves has resulted in the UK being reliant on imported gas and is consequently at the mercy of events happening around the word which have an impact on prices.
- The need to upgrade the UK's electricity infrastructure.
- The green energy targets that suppliers and businesses must meet to fulfil the Government's obligations.

32 The graph below shows that electricity prices have doubled and gas prices have trebled over the past decade. In 2011/12 the council spent £16.2 m on energy, of that £12.5 was directly related to our buildings.



33 In October 2012 major energy companies such as British Gas, Npower Scottish Power and SSE announced that they were increasing their gas and electricity prices by 8% to 9.1%.

Durham County Council Carbon Management Programme

Carbon Management Plan

34 Durham County Council was selected in May 2009 to take part in the Local Authority Carbon Management Programme, which assists councils in saving money on energy, whilst making a positive contribution to the environment by lowering their carbon emissions. The Programme involved the Council working closely with consultants from the Carbon Trust and producing a Carbon Management Plan. The Carbon Trust is a non-profit company, which provides expert advice to businesses, the government and public sector on opportunities to cut energy bills, whilst reducing carbon emissions.

35 The Carbon Management Plan, published April 2010, commits the Council to:

- Reducing the Council's carbon emissions by 40% by 2015 and 80% by 2050 from the 2008/09 baseline to avoid dangerous climate change. (2008/09 was the first year for reporting on NI 185 - CO_2 emissions from the delivery of local authority functions and the first opportunity to collate data for the new unitary authority, which came into being April 2009)
- Taking responsibility for reducing the emissions arising from Council services.

  Within each Service Grouping:

  - Reviewing all policies to develop a CO_2 friendly operating procedure by 2013.
  - Where possible removing barriers to CO_2 reduction.
  - Requiring CO_2 targets and actions in all future Service Improvement Plans.
  - Ensuring reports include details of any potential impact on CO_2 emissions.
- Incorporating Carbon Management into all areas of the Council
  - Integrating Carbon Management into the responsibilities of Heads of Service.
  - Supporting the Eco-Champion volunteers to enable them to carry out their role.
- Working together to develop effective solutions to reduce emissions.

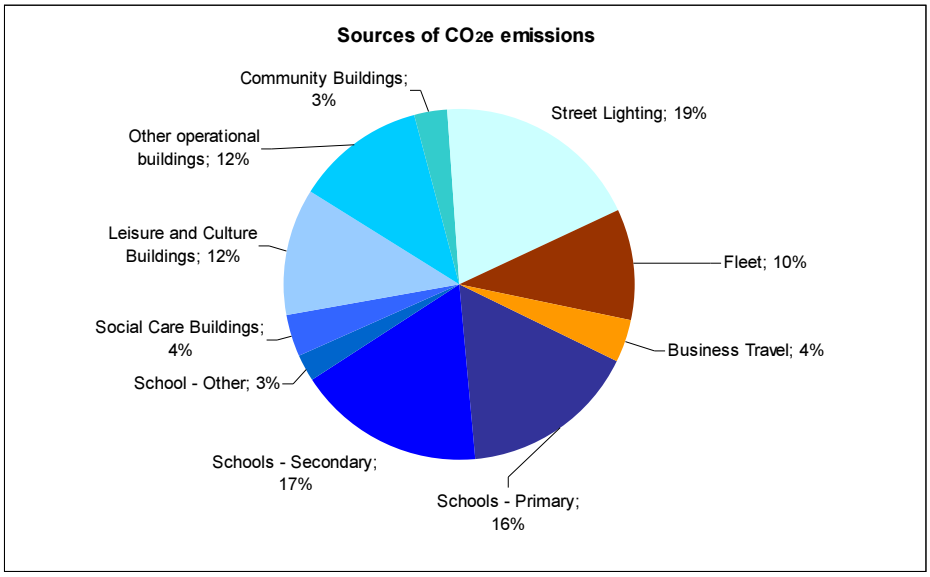
36 Savings in CO_2 that count towards the Carbon Management Plan include savings arising from:

- Reductions in energy consumption as a result of better practices, improvements in efficiency of plant and equipment or using alternative sources of fuel.
- Renewable energy generation, where the energy is used on the site where it is produced, including when Feed in Tariff or Renewable Heat Incentives are claimed – biomass boilers, wind turbines, solar panels etc.

37 In 2008/09 the County and former district councils were responsible for 105,816 tonnes of CO_2 emissions from the following:

- All council buildings, owned and rented including schools, leisure centres, libraries and offices
- Business mileage by car, rail and aeroplane.
- Fleet vehicles, including hire vehicles, such as refuse collection vehicles (excluding subsidised bus routes and school travel)
- Street lighting, traffic signs and lights.

38 Social housing provided by the Council or a third party and employee commuting were not included. The pie chart overleaf shows the sources of emissions from the 2008/09 baseline of 105,816 tonnes.



39 As part of the Carbon Management Plan, 30 projects were initially identified, which it was hoped would go some way to achieving the target. The projects ranged from mechanical and electrical improvements such as boiler and lighting upgrades, the installation of solar panels to changes in policies and procedures. The potential saving or cost avoided if the target was achieved was estimated at almost £58 million across ten years - 32% of emissions.

40 Unfortunately the Council's Carbon Management Programme has been adversely effected by the Government's announcement in July 2010 that it was reducing funding for the Building Schools for the Future Programme as part of its spending review. In County Durham, a number of projects were stopped, including the building a new secondary school for Spennymoor/Tudhoe and an academy for Durham City. These schemes, if they had gone ahead, would have led to the construction more energy efficient buildings and would have saved in the region of 5,500 tonnes of CO_2, which equated to 12.5% of the Council's reduction target.

41 The Government's decision to reduce the Feed in Tariff rates for solar photovoltaic panels, introduce multi-installation tariff rates and reduce the tariff lifetime from 25 to 20 years has also effected the carbon management programme. The new tariffs substantially reduce the rate of return and would, in some cases, not cover the cost of borrowing the amount of capital needed to install the panels, should structural works be required.

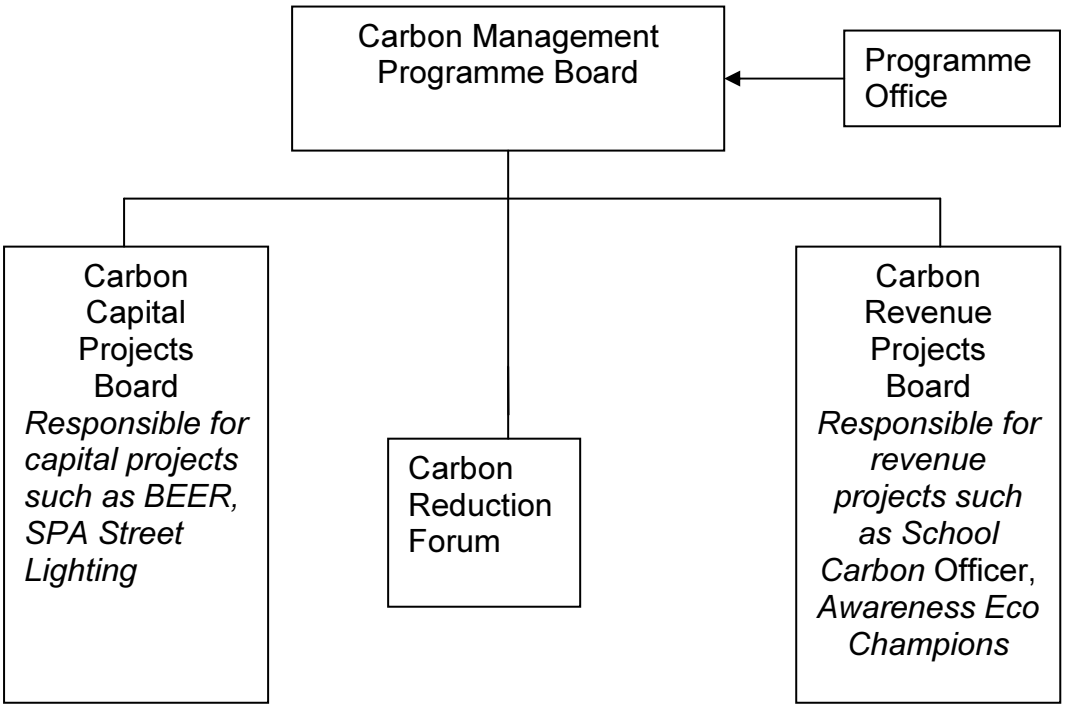
42 However, the Government has made it clear that it expects local authorities to make savings in energy costs and reduce carbon emissions through the publication of a new national energy efficiency strategy and a guide to financing energy efficiency measures in the public sector. The guidance outlines the benefits of reducing energy costs and the financing mechanisms available to councils for doing so. It also provides examples of successful energy efficiency projects carried out by the public sector organisations, some of which such as investing in renewable energy technologies, upgrading street lighting and delivering energy efficiency through Energy Performance Contracts are included in the Council's Carbon Management Programme.

43 The Carbon Management Plan utilises the following five step approach:

- Step 1 – Mobilising the organisation - completed 2009
- Step 2 – Quantifying the baseline - completed 2009
- Step 3 – Identifying and evaluating possible carbon reduction opportunities – completed February 2010
- Step 4 – Developing a cost effective strategy and action plan – completed March 2010
- Step 5 – Implementing and reviewing the plan from April 2010 to March 2015

Carbon Management Programme Board

44 As stated in the Plan, the achievement of the 40% reduction requires very strong governance and good project management. The organisational structure of the Carbon Management Programme Board was reviewed in the July/August 2012 and is shown below.



45 The Carbon Management Programme Board is scheduled to meet every 2 months and is responsible for:

- Ensuring the programme delivers within its agreed boundaries (i.e. cost, time, quality, scope, expected/actual benefits realisation)
- Resolving strategic and directional issues between projects, which need the input and agreement of senior stakeholders to ensure the progress of the programmes.
- Assuring the integrity of benefit profiles and realisation plans.
- Maintaining focus on the development, maintenance and achievement of the blueprint (including the approval of project mandates for every project in the programme)

- Providing assurance for operational stability and effectiveness through the programme delivery cycle.
- Securing resources to support programme delivery
- Defining the acceptable risk profile and risk thresholds for the programme and its constituent parts.

46 Members of the Carbon Capital and Revenue Project Boards are individually answerable to the Senior Responsible Officer for their areas of responsibility and delivery within the programme. The Carbon Capital Projects Board deals with the difficult, high cost solutions involving construction and new technology, and the Carbon Revenue Projects Board deals with the 'softer' options, such as School Carbon Reduction Programme, the Eco-Champions network and low cost solutions, such as more energy efficient working practices. Both Boards need to be updated on a regular basis on any work/strategies that are being progressed by Service Groupings that could effect carbon emissions.

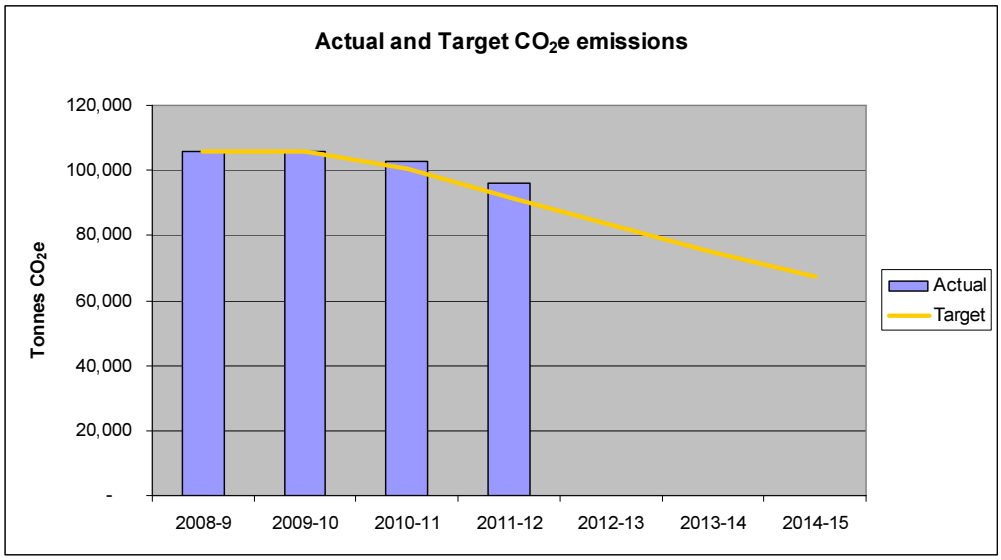
Current level of emissions for Durham County Council

47 The target of reducing CO_2 emissions from the Council's own operations by a minimum of 40% from the Council's 2008/09 baseline by 2015 is very challenging. It is above the Government target set in the Climate Change Act 2008, which sought a 34% improvement. Indeed, a survey undertaken by Friends of the Earth in April 2011, found that only 22 councils (6.2%) in England, had such a high target.

48 The Council is currently midway through its five year Carbon Management Programme, and has during those years focussed its attention on building the foundations on which to reduce emissions in the future. The Council has achieved the Carbon Trust Standard, which publicly recognises its efforts to manage and reduce its carbon emissions, and was runner up/highly commended for Local Government Association Low Carbon Council award 2012. The Council's progress has also been acknowledged in its peer challenge report.

49 In 2011/12 the emissions arising from the Council's day to day activities amounted to 96,281 tonnes, a 6.2% reduction when compared to the 102,698 tonnes emitted in 2010/11, and a 9% decrease from the Council's 2008/09 baseline of 105,816 tonnes. Performance was however less than the target of 14%.

50 The table overleaf illustrates the Council's performance against its target. It shows that since 2008/09 the Council's total emissions have dropped at an increasing rate.



51 Almost all of the Council's services emit harmful greenhouse gases, from heating and lighting Council buildings to collecting refuse or cutting grass. A detailed breakdown of the emissions from 2008/09 to 2011/12 is given below, based the information provided to central Government, in line with DEFRA guidelines, on 6 common greenhouse gases arising from its operations and estate by the end of July each year.

		Emissions (tonnes CO2e)			
Sources of emissions		**2008/9**	**2009/10**	**2010/11**	**2011/12**
Scope 1	Solid fuel (wood pellets)	91	111	152	163
	Liquid fuels	511	744	978	663
	Gaseous fuels	34371	33481	32546	26650
	Vehicle fleet	11596	12022	10531	10319
	Total	46569	46359	44208	37795
Scope 2	Purchased electricity (grid)	55442	55660	54528	54322
	Total	55442	55660	54528	54322
Scope 3	Business travel	3804	3738	3963	4165
	Total	3804	3738	3963	4165
	Total Emissions	105816	105758	102698	96281

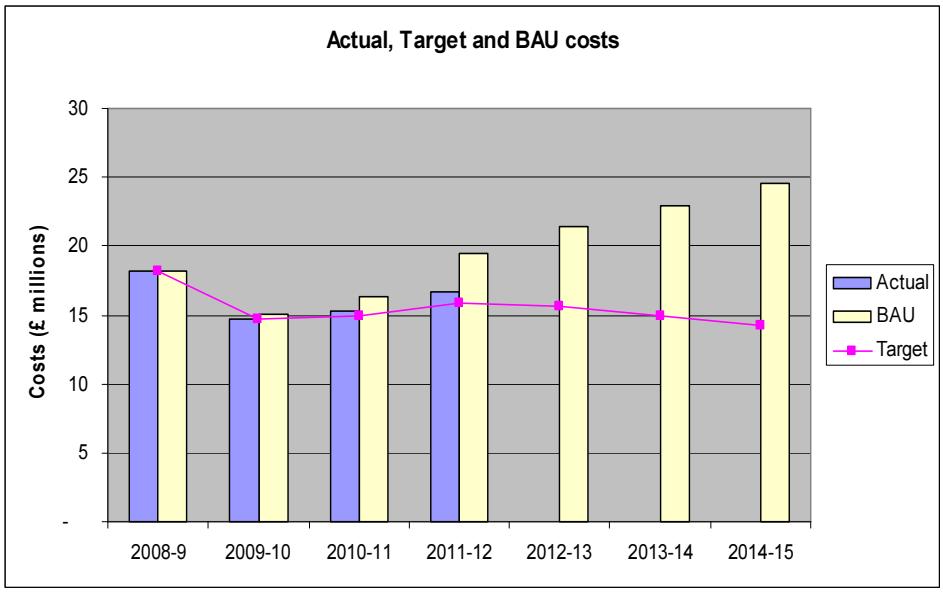
52 The sources of emissions covered by Scopes 1, 2 and 3, as defined by DEFRA, are as follows:

Scope 1 (Direct emissions) Activities owned or controlled by the Council that release emissions straight into the atmosphere. For example - solid, liquid and gaseous fuels from all operational buildings including care homes, day centres, libraries, leisure centres, offices, depots and schools/academies. Fleet vehicles including those hired in outsourced waste contracts. Refrigerant gases are excluded.

Scope 2 (Energy indirect) Purchased electricity from all operational buildings including care homes, day centres, libraries, leisure centres, offices, depots, and schools/academies and also street lighting.

Scope 3 (other indirect) Business mileage by car, train and plane. Employee commuting is excluded. All social housing, industrial units and business centres occupied by tenants are excluded from this report.

53 In 2011/12 the Council spent £16.2m on energy, with £12.5m being directly related to buildings. As a result of the Carbon Management Programme and the associated reductions in energy usage achieved (including the closure of buildings under the accommodation strategy), the Council has avoided more than £2.75 million in notional additional energy costs in 2011/12, when compared to business as usual, which assumed that usage increased year on year since 2009. The table below illustrates the savings against business as usual costs and the targets that have been set for the period 208/09 to 2014/15.



Comparison with other Local Authorities

54 Although the Council has not reached its own target for carbon reduction, it is performing well when compared with a number of other local authorities, both regionally and nationally, as the table overleaf shows. (The information for the other local authorities has been obtained from a DECC excel spreadsheet showing Local Authority emissions reported in tonnes of CO2e, which was published on 28th March 2012.) The table shows the total net emissions for a number of local authorities for comparison purposes. Within the north east, Durham County Council's reduction is

larger than other councils reporting to DECC. The London Borough of Barking and Dagenham has made the largest % reduction, which may be due to the fact that the Borough began delivering its carbon reduction programme a number of years earlier than Durham County Council.

55 Emissions are heavily influenced by external temperatures. The first half of winter 2010 was extremely cold. There was widespread sustained snowfall from mid November until the end of December, and it was the coldest December for over 100 years. This cold weather led to an increased demand for gas and electricity and consequently an increase in emissions.

Local Authority	2009-10 Total net Emissions (tonnes)	2010-11 Total net Emissions (tonnes)	Reduction / Increase (tonnes)	% Reduction (-) Increase (+)
Durham	105,756	102,698	- 3,058	-2.9%
Newcastle	92,504	90,651	- 1,853	- 2.0%
North Tyneside	42,078	43,332	+1,254	+ 3%
Northumberland	43,596	43,280	- 316	- 0.7%
Redcar and Cleveland	24,567	25,173	+ 606	+ 2.5%
Stockton	31,691	31,027	- 664	-2.1%
Lancashire	138,196	145,768	+ 7,572	+ 5.5%
Liverpool	55,119	63,242	+ 8,123	+14.7%
Barking and Dagenham	35,043	28,222	-6,821	-19.5%
Hampshire	162,308	157,358	- 4,950	-3.0%

(Source DECC excel spreadsheet 28th March 2012).

Capital Projects

56 The pie chart referred to in paragraph 38 shows that approximately 65% of the Council's emissions come from the Council's buildings. The Council's Carbon Projects Team is currently engaged in developing and implementing a number of 'invest to save' projects aimed at meeting the 40% carbon reduction target and delivering savings in energy costs of at least 20% against Business as Usual predictions. Details of the projects are set out in paragraphs 59 to 68.

57 Many of the projects are new for local authorities such as Building Energy Efficiency Retrofit, and the past three years has been particularly challenging with regard to proving that the new concepts will work, finding the required funding and developing and procuring the technologies. Priority is currently being given to those projects which offer the best return on investment. As more projects are delivered typical pay back periods will increase.

58 With regard to financing the works, the Council had planned to use SALIX interest free funding for a number of energy efficiency projects. Unfortunately the funding was withdrawn, one week before the Council was scheduled to receive £1million. The Council now utilises prudential borrowing for 'invest to save' projects.

Solar PV Arrays - SPA 1

59 The Council has installed over 860Kw of solar photovoltaic panels on 35 of its buildings through the SPA 1 project. The buildings include Annand House, Meadowfield 22.3kWp, Chilton Depot 15.84kWp, Service Direct Meadowfield 149.5kWp, NetPark Incubator Old Building, Sedgefield 12.kWp, Teesdale Leisure Centre 24.44.kWp, Sniperley Park and Ride, Durham 3.52 kWp, Ferryhill SureStart 11.04 kWp, New Derwentside Business Centre, Consett 40.65kWp, E- Business Centre, Consett 13.63kWp and Derwentside Business Centre, Consett 18.00 kWp. The project used local companies – Esh Construction, John N Dunn and Barrier for most of the installation and survey work.

New Derwentside Business Centre, Consett

60 The panels should generate over 707,000 kilo watt hrs annually in free electricity, around £230,000 income per annum from the Government Feed in Tariff Scheme and save 350 tonnes each year in carbon emissions. The total cost of the project

was £2.75m, which has been financed through prudential borrowing. The Council will have a return on its investment in 12 years, as it is estimated that income and savings of at least £8m will be generated over the next 25 years and this figure will rise as electricity prices increase. (Price rises were announced by the main energy companies in October 2012).

61 SPA II and SPA 111 projects are currently being developed, however as the Feed in Tariff rates have been substantially reduced since April 2012, any buildings requiring structural works to install the panels, will not be included. Projects are currently undergoing feasibility studies.

Building Energy Efficiency Retrofits

62 The above project involves a whole building approach, using a number of energy efficiency technologies. Phase 1 of the project, which is scheduled for completion by end of March 2013, includes Newton Aycliffe and Crook Leisure Centres, Crook Civic Centre and Stanley Indoor Bowls Centre. The total cost of the project is £1.2m, which should be met in 6 to 8 years. The annual carbon savings from the 4 buildings is estimated at 863 tonnes. Further funding has been requested to undertake a second phase of retrofits.

Away from G

63 This project involves improving the energy efficiency of council buildings, which have either 'G' or 'F' ratings on their Display Energy Certificates, through an assets maintenance and repairs programme. The aim is to reduce the buildings emissions by 40% to achieve either an 'E' or 'D' rating. Phase 1 of the project involves work to Ushaw Moor and Startforth Morritt Memorial Church of England Primary Schools and the DLI Museum. The Council will have a return on the investment cost of £250,000 in 15 years. The annual carbon saving is estimated at 162 tonnes.

Biomass Boilers

64 The Council has currently 13 biomass boilers in its buildings and a project is under development to install a further 10 biomass boilers to take advantage of the Government Renewable Heat Incentive. Phase 1 of the project involves the installation of boilers at Middleton in Teesdale Primary School and the North of England Lead Mining Museum at Killhope. Both buildings are currently heated by oil, which accounts for 60% of the buildings' emissions. It is estimated that the installation of the boilers will result in a 48% reduction in carbon emissions, saving 70 tonnes annually. The carbon emissions resulting from the transport of the wood pellets have been included in the carbon savings. The return on the investment cost of £300,000 is 12 to15 years.

Gas Boilers/ Boiler Optimisation

65 During 2011/12, £250,000 has been expended on replacing inefficient gas boilers at Annfield Plain Infants, Burnhope Primary, Evenwood Primary and Yoden Primary Schools to reduce carbon emissions and energy costs. The Sustainability, Carbon and Climate Change Team is also looking the possibility of installing boiler optimisation controls onto existing gas boilers to reduce energy consumption and

consequently carbon emissions. Boiler Optimisation is a quick win project, with no annual maintenance costs and payback in 6 months to 2 years.

Evaporative Cooling System

66 An evaporative cooling system is being installed in the Council's Tanfield Data Centre to replace the current air conditioning system, which will use 90% less energy than the traditional cooling methods. Work is scheduled to be completed by March 2013. The cost of the system is £300,000, with a 3 year rate of return. The annual carbon saving is estimated at 558 tonnes.

Energy Performance Contracting Schemes

67 Five secondary schools in the County are currently involved in a pilot involving energy performance contracts, whereby an energy company, after undertaking a survey of the school building, carries out energy and water efficiency improvements at no capital cost to the school, and guarantees financial savings for 10 –15 years. It is estimated that 1,400 tonnes of carbon will be saved annually, and if the scheme is rolled out to a further 25 schools, 6,500 tonnes of carbon will be saved.

Renewable Energy Technologies

68 Consideration is currently being given to the opportunities to generate energy from the installation of small scale wind turbines. The Council is also developing a partnership with Durham University, who are investigating the harnessing of micro hydro power from the River Wear.

Street Lighting

69 The Council is responsible for maintaining for over 80,000 street lights and 5,500 illuminated signs and bollards, accounting for 18,000 tonnes of carbon emissions per annum. The cost of street lighting related energy, including illuminated signs, bollards and traffic signals is £4.1m. per annum.

70 The Council's Street Lighting Section is in the process of assessing existing lighting provision within the County, with the view to putting forward proposals to expand the Centrally Managed System (CMS), introduce LEDs, dim street lighting between midnight and 6 a.m. on traffic routes, switch off and remove unnecessary lights and de-illuminate signs. These proposed actions, outlined in paragraphs 71 to 80, will substantially reduce energy consumption and carbon emissions.

Centrally Managed System

71 Centrally managed systems are Councils' preferred option for all existing and proposed street lighting systems, including all residential major and minor roads as they allow monitoring via the intranet, eliminating the need for night patrols and enable flexible dimming and switching off. A central management system also enables switching from passive unmetered energy supply to dynamic metered supply. Currently 15,000 lights in the Council are controlled through a centrally managed system.

Removal of lighting where practicable

72 Approximately 7,000 existing street lights could be removed in the County, mainly in rural areas between towns and villages with unrestricted speed limits. Street lighting is only required by statute and British Standards in residential areas, restricted speed zones and conflict zones. Before any street lighting is removed a full risk assessment taking account of road safety issues including accident records and fear of crime issues, will be undertaken to confirm that it is safe to do so.

Trimming via maintenance operations

73 Lamp burning hours can be reduced by 34 hours per light per year by changing 75/35 photocells to 35/18 lux photocells, which if applied to the County's stock would result in a reduction in CO_2 of 151 tonnes and energy savings of £22,000. Unfortunately the cost of undertaking the conversion as part of a capital scheme outweighs the benefits. However 35/18 lux photocells will be procured for us in maintenance repairs.

Dimming

74 Dimming can be facilitated through a central management system or via a fixed dimming. A reduction in lighting by up to 50% is generally not noticeable to the human eye and results in a 35% reduction in energy. However, the financial saving is not as great as dimming saves energy at the time of day when charges are at their lowest level. British Standards allow reduction of one lighting category on traffic routes during low flow, generally between midnight and 6 a.m. The Council is currently dimming 1900 lights on the A167 by 25% light output between midnight and 5a.m. and no complaints have been received.

Switching Off

75 Switching off street lights, generally between midnight and 5 a.m. can also deliver small savings. It requires undertaking in depth assessments for each location and consultation with stakeholders and service users. High energy charges are however incurred whilst the lights are lit.

De-illumination of signs

76 Approximately 900 illuminated signs in the County can now be de-illuminated following recent changes to the Department for Transport Traffic Signs Regulations. Some of the older sign faces will require upgrading to modern materials with high reflectivity.

Retrofit/Replacement

77 Street lighting technology has progressed rapidly in recent years and many existing light sources can be retrofitted with more energy efficient light sources, such as Light Emitting Diodes (LEDs). LEDs offer up to 8 times more brightness than incandescent lamps, without emissions harmful to the environment, and generate energy savings of between 30% and 70%, depending on the lamps they replace. LED white light sources do not produce glare or strobe effects, common in

conventional street lighting, reducing visual fatigue for drivers and pedestrians. As LEDs operate at low voltage and low temperatures, there is no reduction in brightness or yellowing, which is associated with traditional street lighting. The companies producing LEDS are also currently offering long term warranties.

78 Two LED trials are currently underway on Garden Farm Estate, Chester-le Street and at Tudhoe Grange, Spennymoor. At Chester-le Street, 12 types of LED lanterns, with varying wattages and colour temperatures (how white the light appears), from 9 different manufacturers have been used. 72 lanterns in 12 streets have been converted. The trial provides examples of the lighting that would result from an energy reduction conversion programme, not designed specifically to comply with British Standard lighting levels. The resultant energy savings range from 41% to 76%. A survey of residents will form part of the trial.

79 At Tudhoe Grange, Spennymoor, 8 streets where the lighting columns have reached the end of their useful life and needed replacing, have been included in a trial of LED street lighting, designed to comply with British Standard lighting levels. To achieve the specified lighting levels, the number of columns and lanterns installed ranged from no increase to a 60% increase. All locations, however, have resulted in energy reduction of between 27% and 76%.

Invest to Save Scheme

80 An 'invest to save' project, to be funded by prudential borrowing from the Public Works Loan Board, has been developed by the Council's Street Lighting Section to retrofit or replace, as deemed necessary, 41,412 street lights with LEDS and include them in a centrally managed system. The resultant energy savings will cover the cost of the scheme in 12 years and the new installations have a life of about 25 years. Members acknowledged that the scheme would make a significant contribution to meeting the 40% carbon reduction target, however they requested that ward councillors be provided with detailed information on any trial /scheme in relation to street lighting in their area as they were often the first port of call for queries / concerns from residents.

Eco-Champions Network

81 In addition to developing and implementing capital projects to reduce energy costs and carbon emissions, the Council established an Eco-Champions Network, with the clear premise in mind, that through simple changes and a small shift in current working practices, significant financial and carbon savings can be made.

82 An Eco-Champion is part of a supportive network of informed officers, promoting environmentally positive behaviour. Eco-Champions are supported by senior management from each Service Grouping, as well as the Sustainability, Carbon and Climate Change Team. Their goal is to help the Council achieve its 40% carbon reduction target by 2015, through the delivery of low/zero cost measures that many members of staff could either overlook, or are simply not aware of.

83 The Council's Eco-Champions Network was re-organised and re-vitalised in March 2012. The champions now attend Extended Management Team, Service

Management Teams, Service Groupings, Tier 4 Manager meetings and Member seminars and have received positive responses and support from all.

84 The number of Eco-Champions in the authority is increasing - 61 champions as at 8th October 2012. The aim is to have at least one champion per Tier 4 Manager and one in every building. Reducing the Council's business mileage and office energy consumption are two areas that the champions are currently focussing on.

Reducing Business Travel

85 The Council's business travel has increased. Comparisons between 2011/12 and 2012/13 for quarter 1 show that although some Service Groupings have reduced their mileage, overall mileage has increased by 3.5%. The Council has set itself targets of reducing car business mileage for each Service Grouping by a minimum of 10% for 2012/2013 from a 2011/2012 baseline, and implementing a Grey Fleet Policy by March 2013. A grey fleet vehicle is one, which is employee owned and is used for work related journeys. The policy will set out the Council's expectations with regard to business travel.

86 The eco-champions encourage their colleagues to car share, plan their journeys better to reduce business mileage and promote the use of sustainable modes of travel for all business journeys.

87 In May 2012, the Council published a cycling for business policy and guidance, which recognises that cycling is a viable option for some officers travelling on6business, and encourages the use of both private and pool bicycles. Officers who use their own cycles for business journeys are entitled to claim a Business Cycle Mileage Allowance of 15 p per mile.

88 The Council has a number of different bicycles at County Hall for officers to borrow, including electric bikes, which are more suitable for longer journeys. They can be booked by contacting the Travel Planning Team. Prior to use, staff need to undertake a cycle for business induction course, which is a one to one session with an instructor from the Council's Road Safety Team. These sessions are tailored to the individual's needs – for example experienced cyclists or someone who has not been a cycle for 8 -10 years. As at 1st October 2012, cycles were being borrowed 2 – 3 times per week.

89 The Council's Neighbourhood Services are planning to reduce the amount of travelling between sites and consequently carbon emissions, through a multi-skilling training programme for repairs and maintenance employees. They are also planning to review the possibilities for moving to alternative powered vehicles and providing fuel efficient pool vehicles at major depots.

90 Making more use of innovative technology such skype and telephone conferencing, and promoting the availability of the 'hot desks' at council offices throughout the county, could also help to reduce business mileage. Telephone and video conferencing are projects that the Yorkshire Dales National Park Authority, winner of the LGA Low Carbon Council Award 2012, has invested in. The Mytel telephone system which is currently being installed across the Council, allows telephone

conference calls to be made. Hot desks are currently available at council offices at Barnard Castle, Consett, Crook, Durham, Seaham and Spennymoor.

Reducing Office Energy Consumption

91 National figures suggest that energy consumption in buildings can be reduced by up to 10%, by eliminating bad practice and encouraging sustainable behaviour. In 2011/12 the Council spent £16.2 m on energy, with £12.5m being directly related to buildings. This sum is set to increase, as in October 2012 major energy providers such as British Gas, Npower, Scottish Power and SSE announced price rises for both gas and electricity of up to 9.1%.

92 The eco champions encourage their colleagues to reduce waste from lighting, by using natural light whenever possible, opening window blinds, rearranging furniture if it is blocking out natural light, and making sure that all staff know that the last person to leave the office or meeting room always switches the lights off. Lighting accounts for 20-25% of the energy used in offices, and lighting an office overnight wastes enough energy to heat water for 1,000 cups of tea. A fluorescent tube uses over five hundred times more energy if left on for fifteen minutes than the energy needed to restart it.

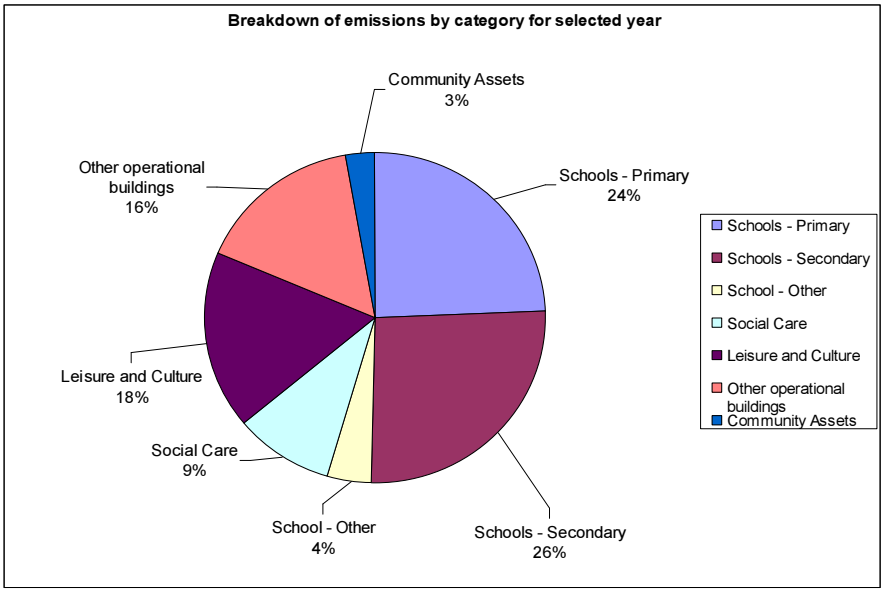
93 Other energy savings being promoted is the turning off of PCs and monitors when attending meetings, during lunch breaks and at the end of every working day. On 19th September 2012, a new power management system was piloted in all offices located on the first floor of County Hall. The system enables PCs and laptops to go automatically into power saving mode after a set period when not being used, reducing the amount of energy used and consequently the amount of CO_2 emitted. It is intended that the system will be rolled out to other floors in County Hall and council buildings.

94 Energy data for the Council's buildings is being closely monitored to identify the best and worst performers. County Hall, based on energy data for 2011, performed fairly well when compared nationally with buildings of similar size.

95 A 2 week targeted pilot campaign 'Big Switch Off' was held at Northumbria House between Monday 12th and Friday 23rd November 2012, to assess current staff attitudes and behaviour, trial tools and techniques for engaging with staff and measure the impact of behavioural change. Following a review, the project will be rolled out across the authority – building by building. The project relies heavily on the support of Eco-Champions to ensure that the behavioural changes made during the 2 week campaign will continue as 'business as usual'

Energy efficiency in schools

96 Schools in the county account for approximately 54% of the emissions from Council buildings as the pie chart below shows.



97 Although the Council does not have direct control over the energy used in the county's schools and academies, all their carbon emissions are included within the scope of the Carbon Management Programme. The Council is also responsible for their carbon footprint through Carbon Reduction Commitment (CRC) Energy Efficiency Scheme (a mandatory carbon emissions trading scheme, which commenced in 2010 and applies to almost all local authorities as well as many private companies.) The scheme requires the Council to report its carbon emissions and then purchase carbon allowances to cover the emissions generated. Under existing CRC legislation, maintained schools in England are grouped with their funding local authority for the purposes of CRC participation. Similarly, academies are grouped with the local authority in whose area they reside. The liability for compliance with the CRC's obligations rests with the local authority, although schools are required to provide energy data to the authority. The School Finance (England) Regulations 2011 enable the Council to recharge the cost of the CRC allowances from both maintained schools and academies.

98 For 2011/12 the Council reported CRC qualifying emissions of 59,125 tonnes, which cost the Council £709,500. (£12 per tonne of Carbon emitted) Over 32,000 tonnes of those reportable emissions were from schools. Therefore, it is currently in the Council's interest to actively engage with schools and academies in the county to reduce their energy consumption and consequently their carbon emissions. receiving evidence. (Since receiving evidence for the review, the Department of Energy and Climate Change announced on 10th December 2012 that the CRC Energy Efficiency Scheme will be dramatically simplified from 1st June 2013, subject to Parliamentary approval, to save participating businesses and public sector organisations millions of pounds in administrative costs. The reforms to the scheme include withdrawing all state funded schools in England from CRC participation and implementing alternative robust measures to incentivise and support schools to obtain both energy cost and emission savings and reducing the number of fuels that

participants have to report from 29 to 2 – electricity and gas for heating. It is likely these changes will come into effect in April 2014, at the start of the second phase of CRC)

99 The majority of the energy used in schools is on heating, followed by lighting, catering and computing. Generally secondary schools will have higher energy costs than primary schools. This can be explained by secondary schools' longer hours and larger number of students, as well as more widespread use of electrical equipment in ICT, science, sports and craft lessons. Approximately 15% of energy and 40% of water in schools is wasted, which amounts to almost £1.5m in Durham County. Electricity use up until 2010/11 has increased in schools by around 5% each year. Being energy efficient saves money, which can be used for curricular resources or facilities. Other benefits include teaching good habits to the next generation, reducing the energy consumption in pupils' homes and the wider community as well as enhancing the educational experience for students. For example, a carbon mathematics project is currently being developed by Bishop Barrington School and the Council's Maths Inspector, which it is hoped will be rolled out to other secondary schools.

School Carbon Reduction Programme

100 As part of the Council's Carbon Management Plan, the Outdoor and Sustainability Education Service (OASES) has been commissioned by the Council to offer a programme of activity to help schools to raise awareness of energy issues, reduce their energy use and associated carbon emissions. (Tenders will be sought for a new programme to commence April 2013.) Schools that have signed up to the Council's Energy Service Level Agreement (majority of schools in the authority) can access the programme for no extra charge. Thirty hours of free flexible support is offered to secondary schools and 18 hours to nursery, primary or special schools in the first year. This reduces to 12.5 hours and 9.5 hours respectively in the future years. The support given is based on adapted resources from the national Carbon Trust best practice programme.

101 The programme began as a pilot in 2010/11, involving 58 schools. This figure increased to 186 in 2011/12, and it is planned to offer support to 234 schools in 2012/13. The support includes:

- Meeting with head teacher and caretaker to complete audit of school and discuss appropriate use of boiler compared to current use.
- Producing a 'hour of use' timetable, to be placed next to the school boiler.
- A written report for school (copied to the Council's Sustainability, Carbon and Climate Change Team) highlighting results, quick wins, opportunities for future support.
- Meeting with / establish School Eco Team to drive initiative forward.
- Working with pupils to produce an awareness campaign, illustrating the results of the audit and the actions that the schools need to take to reduce carbon.
- Meeting with school staff, including head teacher and caretaker to feedback findings, assist them to decide future courses of action and look at curriculum links.

102 A brief guide has been developed to help schools explore the benefits of investing in low cost energy efficiency technologies that qualify for the Council's own 0% Energy

Efficiency Loan Scheme, which was launched in March 2012. Potential technologies include: lighting controls, glazing improvements, solar pv panels, building fabric insulation, draught proofing, real time energy monitors, voltage optimisation and introducing zoning to heating systems. The scheme has a maximum repayment period of 10 years.

103 A heating review has been undertaken at Wolsingham Community and Sports College as part of the programme. The damaged frost and room thermostats were replaced to enable staff to manage room temperatures and checks were undertaken on the programming of the five boilers on the split site. Following the checks, the temperature of the boilers were lowered from 75 °C to 55 °C, heating was reduced by 18 hours a week and hot water by 15 hours a week, saving £3,781 in 2011 compared with 2010 and 29 tonnes of CO_2.

104 At Delves Lane Junior School, the programme showed that a potential saving of £635 could be made by switching off electricity every weekend. Further savings were possible if there were regular night time switch offs.

105 There has been a 5% overall reduction in school carbon emissions (12% reduction from primary schools) in the county in 2011/12. Primary school electricity use has reduced by 4%, giving a cost saving of £351,916. The overall saving to school budgets was £736,533, against business as usual predictions.

106 In relation to energy consumption in new school buildings, the Council has achieved an outstanding BREEAM (British Research Establishment Environmental Assessment Method) rating in respect of Brandon and Esh Winning primary schools - the most sustainable buildings in the Council's property portfolio and a 'first' nationally. The new primary school buildings at Kirk Merrington and Greenlands (South Moor) scheduled for completion in April 2013, will have biomass boilers, sustainable urban drainage systems and grey water recycling capability to achieve an overall BREEAM standard of excellence for non-domestic development.

Council's Planning and Building Control Functions

107 As a local authority, Durham County Council is well placed to drive and influence emission reductions through the services it delivers and its regulatory and strategic functions. Through planning and building control functions, the Council can play an important role in enforcing energy efficiency standards in new buildings and building extensions. Developers and house builders are currently required to build to higher levels of energy efficiency, which are 10% above the existing building regulation standards. The attainment of nationally recognised schemes, such as the Code for Sustainable Homes for domestic development and BREEAM for non domestic development is currently voluntary for developers, however, it is included within the County Durham Plan as a Preferred Option, meaning that it could become policy when the Plan is adopted in 2014. The Department of Energy and Climate Change has recently published (October 2012) the document "Improving Energy Efficiency in Buildings: Resources for Local Authorities" which is designed to bring together and categorise tools, models, knowledge, case studies and datasets that can be used and adapted to help in the task of delivering energy efficiency improvements to buildings.

Service Improvement Plans and Performance Monitoring

108 In line with the Council's Carbon Management Plan, all Heads of Service are now responsible for reducing emissions from their service. The 2012-16 Service Improvement Plans include actions to mitigate the impact of climate change by reducing carbon emissions. The following actions are included in all Service Improvement Plans:

- With support from the Eco-Champions network and using emissions reduction tool, identify opportunities to reduce emissions.
- Analyse the findings from the emissions reduction tool to identify and agree a series of key actions.
- Support the Eco-Champions to deliver agreed actions for 2012- 2016 and ensure that high standards of emission awareness are maintained.
- Reduce car business mileage by a minimum of 10% in 2012/13 from a 2011/12 baseline.

109 These actions are currently monitored corporately, on an exception basis, as part of the Council's quarterly performance reporting process. However, both the Carbon Management Programme Board and the Council's Environment and Sustainable Communities Overview and Scrutiny Committee need to receive regular detailed information on the progress being made by Service Groupings.

110 Managers and officers from across the Council are consequently undertaking emission assessments as a means of identifying the emissions directly relevant to their specific teams. The emissions reduction toolkit, developed by the Sustainability, Carbon and Climate Change Team, requires teams to consider the actions they undertake as part of their day to day responsibilities – for example what equipment is essential, and are the teams predominantly desk based or do they spend large parts of the day driving around the County? It then requires an assessment of the impact that these activities have on emissions – high, medium or low. For example if the team is predominantly desk based, electrical office equipment will have a high impact on emissions. Following this assessment, consideration needs to be given to the level of influence teams have over the sources of emissions - for example the ability to turn heating down or off.

111 Some Service Groupings, such as Neighbourhood Services have additional actions to mitigate climate change in their Service Improvement Plans - for example:

- Deliver a centrally managed system of street lighting, which will increase efficiency and reduce cost of electrical energy whilst reducing light pollution and CO_2 emissions in non residential areas.
- Deliver sustainable design schemes for the new primary school buildings at Kirk Merrington and Greenlands (South Moor) to improve environmental performance.

112 In line with the Carbon Management Plan, the Service Groupings will have carbon budgets for 2013/14 for business mileage and fleet mileage, and the Service Improvement Plans for 2013 -17 will include targets and actions to reduce CO_2 emissions.

113 The Council's Cabinet, Overview and Scrutiny Management Board and Environment and Sustainable Communities Overview and Scrutiny Committee currently monitor the progress made in relation to carbon reduction through the quarterly performance management reports. The two key indicators for carbon reduction are:

- Reduction in emissions from local authority operations (former National Indicator 185)
- % reduction in emissions per capita in the local authority area (former National Indicator 186) (year on year reduction)

Training

114 As carbon management is the responsibility of every department and an integral part of the Council Plan, all staff need to be made aware of both the Council's and their own Service Grouping's targets, what the benefits are and how they can contribute to meeting these targets. A Managers' handbook is currently been developed by the Sustainability, Carbon and Climate Change Team to assist with process and ensure a consistent approach. It is scheduled for release in summer 2013. Arrangements are now in place for new staff to receive training on CO_2 reduction as part of their induction programme, organised by the Council's Human Relations and Organisation Development Section, however existing staff and newly elected councillors also need training/briefing.

Section Five - Conclusions

115 The Council is currently midway through its five year Carbon Management Programme, and has during those years focussed its attention on building the foundations on which to reduce emissions in the future. It has reduced carbon emissions from its own activities by 9%, from its 2008/09 baseline of 105,816 tonnes, against a target of 14% for the period. Emissions have decreased each year, and when compared with other local authorities in the north east, the Council is performing well. Unfortunately the cold weather experienced during the past few years has slowed the CO_2 emission reduction nationally. Emissions are heavily influenced by external temperatures and 2010 was on average the coldest year since 1987, which caused an increase in demand for energy.

116 The Council is, despite financial pressures, continuing to develop and undertake, through prudential borrowing, a number of 'invest to save' schemes, to significantly reduce future energy costs and carbon emissions. Priority is currently being given to those projects which offer the best return on investment, however consideration needs to be given to whether schemes should be undertaken that provide the opportunity for large scale carbon reduction, but do not meet the usual financial pay back criteria.

117 The 'invest to save' project to retrofit or replace 41,000 street lights with LEDs and include them in a centrally managed system will assist the Council to meet its carbon reduction target. Members acknowledged that the project would save in the region of 7,500 tonnes of carbon per year and would produce a very strong financial return in the form of revenue budget savings, however they requested that ward councillors receive detailed information on any trial/scheme in relation to street lighting in their area as they were often the first port of call for residents with concerns.

118 Promoting behavioural change is key to reducing energy costs and carbon emissions associated with the council's day to day work. Simple changes in working practices can bring about significant financial and carbon savings. It is important that all staff and Elected Members are aware of the Council's targets, what the benefits are and how they can contribute to meeting these targets.

119 The Council's Eco Champions have an important role in raising awareness of how everyone can reduce carbon emissions. They deliver no/low cost measures that many may either overlook or simply not yet be aware of. Reducing the Council's business mileage and office energy consumption are two areas, which the champions are currently focussing on.

120 With regard to business travel, the Council has set itself the target of reducing car business mileage by at least 10% in the current financial year. It is also looking to implement a Grey Fleet Policy and undertake a multi-skilling training programme for repairs and maintenance employees, which would reduce the amount of travelling between sites. Neighbourhood Services Service Plan also includes reviewing the possibilities for moving to alternative powered vehicles and providing fuel efficient pool vehicles at major depots. Making more use of innovative technology such skype and telephone conferencing, and promoting the availability of 'hot desks' at council offices throughout the county, could also help to reduce business mileage.

121 There has been a 5% overall reduction in school carbon emissions (12% reduction from primary schools) in the county in 2011/12. Primary school electricity use has reduced by 4%, giving a cost saving of £351,916. The overall saving to school budgets was £736,533 against business as usual predictions. It is planned that 234 schools will receive support from the Programme in 2012/13, which should result in even greater savings, thus releasing for funds for curricular resources or facilities.

122 In line with the Council's Carbon Management Plan, all Heads of Service are now responsible for reducing emissions from their service. All Service Groupings list actions aimed at reducing the Council's carbon emissions in their 2012 -16 Service Improvement Plans and for 2013/14 will have carbon budgets for car business mileage and fleet mileage. The Service Improvement Plans for 2013 – 17 will also include targets and actions to reduce carbon emissions. The service plan actions are currently monitored corporately, on an exception basis, as part of the Council's quarterly performance reporting process. However, both the Carbon Management Programme Board and the Council's Environment and Sustainable Communities Overview and Scrutiny Committee need to receive regular detailed information on the progress being made.

123 The Council's Carbon Management Programme Board provides a corporate and co-ordinated approach in relation to reducing carbon emissions, however it relies very heavily on Service Groupings keeping it updated on any work/strategies being progressed that could effect the Council's carbon emissions.

Section Six - Recommendations

124 The Environment and Sustainable Communities Overview and Scrutiny Committee noted the work being undertaken to meet the targets and objectives set out in the Council's Carbon Management Plan and recommended the following:

a) That Cabinet notes the importance of a corporate and co-ordinated approach in relation to reducing carbon emissions. This approach is facilitated through the Council's Carbon Management Programme Board and in order to continue to fulfil this function, Service Groupings should proactively engage with the Board to ensure a joined up and planned approach.

b) That in view of the recent increases in energy prices, the Council /Cabinet continues to explore opportunities to 'invest to save' that will result in significant reductions in energy consumption and carbon emissions and ultimately lead to savings and efficiencies. Consideration also needs to be given to whether schemes should be undertaken that provide the opportunity for large scale carbon reduction, but do not meet the usual financial pay back criteria.

c) That the Council's Elected Members be provided with detailed information on any trials/schemes in relation to street lighting in their area, prior to residents being notified.

d) That the drive to recruit more Eco Champions to promote simple energy saving changes continues, and that consideration be given to the possibility of providing Elected Members with information on the Council's Carbon Management Programme, as part of the corporate induction programme and seeking volunteers from Elected Members to act as Eco Champions.

e) That in relation to the need to reduce business travel, consideration be given to making more use of innovative technology such as skype, telephone conferencing, video conferencing and promoting the availability of 'hot desks' at council offices throughout the county.

f) That the Committee continues to monitor the progress being made to achieve the Council's carbon reduction targets through the current quarterly performance monitoring reports and receives regular updates by members of Council's Sustainability, Carbon and Climate Change Team and Carbon Management Programme Board.

g) That all staff and Elected Members be made aware of the Council's carbon reduction targets, the financial impact of energy use and the savings that can be made by using energy more effectively. This could be achieved through training sessions and the Council's performance appraisal scheme – focussing on staff actions/achievements that protect the County's environment and mitigate the effects of climate change.

h) That a systematic review of the report and progress should be undertaken six months after its consideration by Cabinet.