Environment and Sustainable Communities Overview and Scrutiny Committee

Development of Renewable Energy Technologies in County Durham Scrutiny Review

Executive Summary

Durham County Council

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

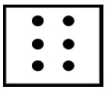
العربية (Arabic) (中文 (繁體字)) (Chinese) اردو (Urdu)

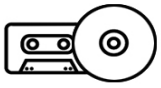
polski (Polish) ਪੰਜਾਬੀ (Punjabi) Español (Spanish)

বাংলা (Bengali) हिन्दी (Hindi) Deutsch (German)

Français (French) Türkçe (Turkish) Melayu (Malay)

gillian.garrigan@durham.gov.uk
0191 383 6640

 **Braille**

 **Audio**

 **Large Print**

Contents

Section One – Foreword

The UK's current policy direction is to dramatically increase the use of renewable energy in order to meet the EU target of sourcing 15% of its energy from renewable sources by 2020.

In County Durham, considerable progress has been made in recent years in generating renewable energy. From having almost no commercial renewable energy capacity 10 years ago, the County now has over 174 MW operational and approved capacity, and it is anticipated that around 21% of the County's electricity needs will be met from renewable sources before the end of March 2012.

The improvements in energy efficiency and the production of renewable energy have significant environmental, economic and social benefits for the residents of County Durham.

The Environment and Sustainable Communities Overview and Scrutiny Committee has undertaken a scrutiny review to examine these benefits in detail and assess whether there are any opportunities to maximise these benefits.

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 – Development of Renewable Energy Technologies in County Durham Scrutiny Review Group

Section Two - Executive Summary

Introduction

2.1 Rationale/ Terms of Reference

2.1.1 The Council's Environment and Sustainable Communities Overview and Scrutiny Committee at its meeting on 10th June 2011, received presentations on the regional growth opportunities in renewable energy technologies, from the Business Development Manager of the National Renewable Energy Centre, and on the development of renewable energy in County Durham from the Council's Sustainability and Climate Change Team Leader. Following the presentations, Members agreed to include in the Committee's work programme, a scrutiny review regarding the development of renewable energy technologies in County Durham, which would meet the objective of the 'Altogether Greener' Section of the Council Plan for 2011 – 2014 of mitigating the impact of and adapting to climate change.

2.1.2 The terms of reference of the review:

- To review the environmental benefits to County Durham of investing in renewable energy technologies. Renewable energy generation is seen as key to achieving the Council's target of a 40% reduction (742,000 tonnes) in carbon dioxide emissions by 2020.
- To review the benefits to the economy of County Durham of investment in renewable energy. Low carbon economic growth offers major economic opportunities for County Durham. The Council is already supporting local small and medium enterprises in renewable technologies, and County Durham has one of only two manufacturers of photovoltaic panels in the UK.
- To review the social benefits of renewable energy. With the economic downturn and rising energy prices, fuel poverty is likely to become an even greater challenge for County Durham.

2.2 Renewable Energy

2.2.1 Renewable energy includes all sources of energy that are captured from on-going natural processes, such as solar radiation, wind, water flow, photosynthesis and geothermal heat flows. Generating energy from renewable sources can help to reduce dependence on non renewable sources such as fossil fuels, which take millions of years to replenish and also offers considerable environmental, economic and social benefits.

2.3 Carbon Dioxide Emissions

2.3.1 Conventional electricity generation from coal, oil and gas produces large quantities of carbon dioxide. Heating accounts for 47% of the total UK final energy consumption and 46% of carbon emissions. Carbon dioxide (CO_2) levels in the atmosphere have increased by about 40% since the beginning of the industrial revolution, from around 280 to about 390 parts per million (ppm). There is a strong consensus in scientific literature, that global surface temperatures have increased in recent decades, leading to more severe weather events - floods, droughts and storms and that the trend is caused mainly by human-induced emissions of greenhouse gases.

Key Findings

Renewable energy includes all sources of energy that are captured from on-going natural processes, such as solar radiation, wind, water flow, photosynthesis and geothermal heat flows.

Generating energy from renewable sources can play a very significant role in mitigating the impacts of climate change by reducing the amount of carbon dioxide released into the atmosphere. It also diversifies the country's energy supply, reducing its dependence on fossil fuels, which take millions of years to replenish.

2.4 Policy Context – European, National and Local

2.4.1 The following legislation, strategies, plans and directives support the reduction of greenhouse gas emissions and development and installation of renewable energy technologies:

National / European Policy Context

2.5 Climate Change Act 2008

2.5.1 The Climate Change Act 2008 set legally binding targets to reduce greenhouse gas emissions by at least 34% by 2020 and 80% by 2050, against a 1990 baseline.

2.6 EU Renewable Energy Directive

2.6.1 In 2009, EU Directive 2009/28/EC established an overall 'binding' target for the EU of sourcing 20% of its energy from renewable sources by 2020. The target for the United Kingdom is 15% and applies to the total energy used in the electricity, heat and transport sectors. The Directive also requests that member states encourage the use of small scale renewable energy in buildings and provide priority grid access to renewable energy sources.

2.7 Strategic Energy Technology Plan

2.7.1 The EU' s Strategic Energy Technology Plan outlines what needs to be done, from an EU perspective, to achieve its 2020 energy and emission targets. Its objectives are sustainability, security of supply and retaining EU competitiveness.

2.8 The UK Renewable Energy Strategy

2.8.1 The UK's Renewable Energy Strategy was launched in July 2009. It outlines how the UK aims to move towards generating 15% of its energy from renewable sources by 2020.

2.9 UK Renewable Energy Roadmap

2.9.1 The UK Renewable Energy Roadmap, published on 12th July 2011, outlines a plan of action to accelerate renewable energy deployment. It identifies eight technologies that have either the greatest potential to help the UK to meet the 2020 target in a cost-effective and sustainable way, or offer great potential for the decades that follow. These technologies are: onshore wind turbines, offshore wind turbines, marine energy, biomass

electricity, biomass heat, ground source heat pumps, air source heat pumps and renewable transport.

2.10 Planning our electric future: a White Paper for secure, affordable and low carbon electricity

2.10.1 The above White Paper, published on 12th July 2011, sets out measures to attract investment, reduce the impact on consumer bills and create a secure mix of electricity sources including gas, new nuclear, renewable and carbon capture and storage.

2.11 The Carbon Plan 'Delivering our low carbon future December 2011'

2.11.1 The above plan sets out how the UK will achieve decarbonisation within the framework of its energy policy: to make the transition to a low carbon economy whilst maintaining energy security and minimising costs to consumers, particularly those in poorer households.

Regional Policy Context

2.12 North East Region Spatial Strategy

2.12.1 The above strategy, published in July 2008, sets out a broad development strategy for the region for the period up to 2021. It contains 4 main policies in relation to energy efficiency and renewable energy technologies. They are Policy 38 – Sustainable Construction, Policy 39 – Renewable Energy Generation, Policy 40 – Planning for Renewables and Policy 41 – Onshore Wind Energy Development.

County Policy Context

2.13 The EU Mayors Covenant

2.13.1 In January 2009, Durham County Council signed the European Mayors Covenant, along with the 11 other councils in the North East. The Covenant is the mainstream European movement involving local and regional authorities, voluntarily committing to increase energy efficiency and the 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.

2.14 The County Durham Low Carbon Strategy and Sustainable Energy Action Plan – September 2010

2.14.1 The Council's Low Carbon Strategy and Sustainable Energy Management Plan brings together the various issues that need to be addressed and the actions that need to be taken to achieve the Council's targets of reducing carbon emissions for its own operations by 40% by 2015 and across the whole of County Durham by 40% by 2020 (742,000 tonnes).

2.15 Sustainable Community Strategy for County Durham 2010 – 2030 and Council Plan 2011-14

2.15.1 Both documents identify the need to mitigate the impact of and adapt to climate change and reduce greenhouse gas emissions in County Durham as objectives. One of the high level actions included in the Council Plan to achieve these objectives is to develop projects for renewable energy development on council assets to include solar farms, biomass and wind generation.

2.15.2 The Council's Cabinet at its meeting on 9th March 2011 agreed to invest in the installation of Solar PV on Durham County Council buildings to enable the Council to benefit from lower electricity costs and additional income through the Feed In Tariff Scheme.

2.16 The County Durham Plan 'Towards a Strategy for Low Carbon Energy in County Durham' May 2011

2.16.1 The above report forms part of the Council's engagement activities on the County Durham Plan. It provides an outline of the existing position in terms of required carbon savings and the scale of renewable energy capacity needed and proposes that the core strategy of the County Durham Plan, should set a target of 26% renewable electricity by 2020, with an aspiration to significantly exceed this, and a 6% renewable heat target.

Key Findings

The above legislation, strategies, plans and directives support the reduction of greenhouse gas emissions and the development and installation of renewable energy technologies.

The Council is committed to reducing CO_2 emissions and has set the ambitious target in its Low Carbon Strategy and Sustainable Energy Action Plan of a 40% reduction in respect of its own operations by 2015, and for County Durham by 2020.

The County Durham Plan 'Towards a Strategy for Low Carbon Energy in County Durham' report proposes that the core strategy of County Durham Plan should set a target of 26% renewable electricity by 2020, with an aspiration to significantly exceed this, and a 6% renewable heat target.

2.17 Renewable Energy Technologies

2.17.1 There are considerable opportunities available to generate energy from renewable sources in County Durham. Furthermore, the overall costs of most renewable technologies have declined in recent years and are likely to fall further. The main types of renewable energy are solar**,** wind, hydro, anaerobic digestion, geothermal and landfill gas.

2.18 Solar Energy

2.18.1 There are two methods by which solar energy is converted into a usable source of power. One method focuses on the sun's heat – solar thermal and the other on the sun's light – photovoltaic.

2.18.2 The solar thermal method works by installing solar panels on the roof of a property to gather energy from the sun. The panels are made up of cells containing liquid, which absorb solar radiation (energy) and heat up. The panels are connected to a hot water cylinder via pipes, which allows the heat to be transported. When heat is gathered in the water cylinder, it can then be used by the boiler for distribution. The panels can be either integrated or retro-fitted onto an existing building. They are best suited to south facing roofs.

2.18.3 Solar electricity systems, commonly known as solar photovoltaic (PV) capture the sun's energy using photovoltaic cells. The cells convert the sunlight into electricity, which can be used to run household appliances and lighting. Like solar thermal, the panels are best

suited to unshaded roofs, facing somewhere between south east and south west, with an angle of 30 – 40 degrees. A typical domestic solar PV system (2.6kW) costs around £9,000.

2.18.4 Typical domestic systems can provide around 1,850 kWh a year, which equates to 40% of the electricity used by a typical household and save in the region of 1 tonne of CO_2 per year. Solar photovoltaic systems are eligible for Feed in Tariffs, if installed by a Microgeneration Certified installer. (*Further details are outlined in Section 6 of the full report)* The Council's Low Carbon Team has published a leaflet ' Have you considered going solar?' to explain the benefits of solar panels and the Government's Feed-in-Tariffs for electricity generation.

2.19 Wind Power

2.19.1 Wind turbines convert the kinetic energy from the wind into mechanical energy, which is then used to drive a generator that converts this energy into electricity. Wind turbines work on the land (onshore) or in the sea (offshore). The output of a wind turbine is determined by the wind speed at the site of the turbine. A 2.5MW turbine at a reasonable site can generate 6.5 million units of electricity each year, which is enough to meet the annual needs of over 1,400 households. Small scale domestic wind turbines can either be integrated into the local electricity grid or operate as off grid devices, charging batteries when excess electricity is generated. In a good site, a small scale domestic wind turbine is an effective renewable energy option in terms of energy output.

2.19.2 County Durham has seen the development of considerable new capacity for wind energy over the past ten years. At January 2012, operational or permitted capacity was over 129 MW. An additional 109.16 MW was at planning or pre-planning stage, giving an overall capacity for all operational, permitted or planned schemes of around 238.83 MW.

2.20 Biomass

2.20.1 Biomass is a renewable, low carbon fuel that is already widely available throughout the UK. Its use can significantly reduce greenhouse gas emissions. The carbon dioxide it gives off when it is burned, is counterbalanced by the amount absorbed when the plant in question was grown. There are five basic categories of material: virgin wood, energy crops, agricultural residues, industrial waste and co-products.

2.20.2 The County's largest biomass plant is Dalkia at Chilton, which is supplied by domestic waste wood. It can burn 120,000 tonnes of waste wood per year and produce 18MW of electricity and heat. It is currently an electricity only scheme, but has potential to supply renewable heat to businesses and households in Chilton.

2.21 Landfill Gas

2.21.1 Landfill gas is a mixture comprising mainly methane and carbon dioxide, formed when biodegradable wastes break down within a landfill as a result of anaerobic microbiological action. The biogas is collected by drilling wells into the waste and extracting it as it is formed. It can then be used in an engine or turbine for power generation, or used to provide heat for industrial processes situated near the landfill site, such as in a brickworks. Landfill sites can generate commercial quantities of landfill gas for up to 30 years after wastes have been deposited. Six sites in the County currently have over 12MW installed capacity. The two schemes at Coxhoe and Mark's Quarries are generating a total of just over 6MW of energy.

2.22 Anaerobic Digestion

2.22.1 Anaerobic digestion is the process whereby bacteria break down organic material in the absence of air, yielding a biogas containing methane. Biogas can be used to create electricity through a combined heat and power process, or can be cleaned to remove the carbon dioxide and other substances, to produce biomethane. This can be injected into the national gas grid to be used in the same way as natural gas, or used as a vehicle fuel.

2.22.2 The Emerald Biogas Facility on Newton Aycliffe Industrial Park will be the first anaerobic digestion plant in County Durham. It will use food waste from shops, supermarkets and manufacturers, mixed with organic waste and energy crops from local farms to create biogas, which can be fully utilised by neighbouring industry.

2.23 Geothermal Energy

2.23.1 Geothermal energy is a form of renewable energy derived from heat deep in the earth's crust. Almost everywhere, the shallow ground or upper 10 feet of the Earth's surface maintains a nearly constant temperature between 50° and 60°F (10° and 16°C). Geothermal heat pumps can tap into this resource to heat and cool buildings.

2.23.2 Geothermal power plants emit only excess steam and very few trace gases (1000-2000 times less carbon dioxide than fossil fuel power plants). They take up very little land compared to traditional fossil-fuel plants and advanced drilling techniques minimise the impact of drilling wells. Cluff Geothermal are currently aiming to develop an initial two geothermal energy projects in the UK's North East, at Shiremoor in North Tyneside and Eastgate in Country Durham.

2.24 Hydro

2.24.1 Hydro power harnesses the energy of moving water. It is a relatively under utilised resource in County Durham, yet it is one of the most reliable, predictable and least environmentally intrusive of all renewable energies. Although the region's rivers do not offer large scale hydro power resources, the potential still exists for small scale domestic and community use, which should be further encouraged and developed where appropriate. A survey funded by One North East in March 2010 highlighted seven potential sites on the River Wear for the installation of micro hydro schemes. The total cost would be £5,421,204, the predicted power output 1640Kw and the net annual revenue £767,131. The Council Plan for 2012 – 16 lists the development of hydro centre at the former ice rink site – Freemans Reach, Durham City as an action in the 'Altogether Wealthier' section. There are also potential opportunities to capture hydro power at some of the drinking water reservoirs in the County.

Key Findings

There are considerable opportunities available to generate energy from renewable sources in County Durham. Furthermore, the overall costs of most renewable technologies have declined in recent years, and are likely to fall further – for example the cost of solar panels.

The deployment of renewable energy technologies will contribute to meeting the Council's target of reducing carbon emissions for County Durham by 40% by 2020 and the Government's aim of generating 15% of the country's energy from renewable sources by 2020.

Installing large scale wind turbines can make a significant impact on the landscape, however, wind energy development in County Durham has taken place within a planning framework, which has sought to protect the best of the County's landscapes.

Hydro power is a relatively under utilised resource in County Durham, even though it has a considerably higher efficiency than wind power. There is potential to generate 1640Kw of power and annual revenue of £767,131 from 7 sites on the River Wear.

2.25 Government Incentives To Generate Renewable Energy

2.25.1 The Government has over the years encouraged the switch from fossil based fuel energy to renewable energy through the following schemes, programmes and incentives.

2.26 Enhanced Capital Allowance Scheme

2.26.1 The Enhanced Capital Allowances (ECA) scheme, introduced by the Government in April 2001, enables businesses (excluding very small businesses) to reclaim tax if they invest in energy efficient equipment such as biomass boilers, combined heat and power units, air, ground and water heat pumps.

2.27 Low Carbon Building Programme

2.27.1 The Low Carbon Building Programme, launched on 1st April 2006, offered grants towards the cost of installing domestic micro-generation technologies and larger scale distributed generation installations for public buildings and businesses, subject to energy conservation standards being met. The programme was split into two phases - phase one, managed by the Energy Saving Trust, divided into two streams, provided grants for householders under stream 1, and grants for businesses under stream 2. Phase two, launched in 2007 and managed by the Building Research Establishment, provided grants for public sector, charitable and third sector organisations. The Programme, which closed to new applications in May 2010, has since its launch provided 20,000 grants to help cover the cost and installation of micro-generation equipment.

2.28 Feed in Tariffs

2.28.1 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).

2.28.2 The tariffs available and the process for receiving them vary, depending on when the technology was installed, and whether the system and the installer were certificated under the Microgeneration Certification Scheme. The Microgeneration Certification Scheme (MCS) is an independent scheme, that certificates microgeneration products under 50kW and installers, in accordance with consistent robust standards. The payments are made up of:

- Generation tariff – A set rate paid by the energy supplier for each unit (or kWh) of electricity generated. Once joined, the same tariff will continue for 25 years in the case of solar electricity.

- Export tariff - A further 3.1p/kWh will be received from the energy supplier for each unit exported back to the electricity grid, that is when it isn't used on site. The export rate is the same for all technologies.
- Energy bill savings – Savings will be made on electricity bills. The amount saved will depend on how much of the electricity is used on site.

2.28.3 Deployment of solar PV over summer 2011 has accelerated rapidly. As at September 2011, 255MW of solar PV had been registered for FITs, which is nearly double the original projection for the FIT scheme. The table below shows that for the period 1st April 2010 to 12th December 2011, there have been 879 installations in County Durham, which qualify for the feed in tariff, giving a total capacity of 2.907 MW. This number well exceeds the Council's Performance Indicator target for the period.

Technology	Domestic Installations	Installed Capacity (MW)	Commercial Installations	Installed Capacity (MW)	Industrial Installations	Installed Capacity (MW)	Community Installations	Installed Capacity (MW)
Hydro	1	0.004	0	0	0	0	0	0
CHP	1	0.001	0	0	0	0	0	0
Photo-voltaic	830	2.573	19	0.096	0	0	3	0.019
Small scale Wind	19	0.109	4	0.035	0	0	2	0.07
Total Installed Capacity	851	2.687	23	0.131	0	0	5	0.089

2.28.4 On 31st October 2011 the Government published the first of two consultations on the comprehensive review of FITS. The consultation outlines proposals to reduce the tariffs for solar PV, as the take up had significantly exceeded the projected demand, and if this trend continued, the Government's spending envelope for 2011/12 and 2012/13 would be breached. The document refers to the fact that the cost of installing solar pv has fallen by at least 30% since the FITs scheme began, which meant that the returns available are higher than originally envisaged.

2.28.5 The consultation focuses on addressing the budgetary problem and proposes that the new generation tariffs should apply from 1st April 2012 to all new solar PV installations with an eligibility date of on or after 12 December 2011.The table overleaf sets out the existing and proposed generation tariffs.

Band (kW)	Current generation tariff (p/kWh)	Proposed generation tariff (p/kWh)
•4kW (new build)	37.8	21.0
•4kW (retrofit)	43.3	21.0
>4-10kW	37.8	16.8
>10-50kW	32.9	15.2
>50-100kW	19	12.9
>100-150kW	19	12.9
>150-250kW	15	12.9
>250kW-5MW	8.5	8.5
stand alone	8.5	8.5

2.28.6 The consultation also sought views on two other changes to the FITs scheme for solar PV. Firstly, the introduction from 1 April 2012 of new multi-installation tariff rates for aggregated solar PV schemes, which is set at 80% of the proposed standard tariff for individual installations. These are schemes where a single individual or organisation owns or receives FIT payments from more than one PV installation, located on different sites. The second proposal is to strengthen the link between FITs and energy efficiency by introducing a new energy efficiency requirement for FITs for solar PV. If the building does not meet a specified minimum energy efficiency requirement, the installation would receive a lower tariff of 9p/kWh. The aim of the proposal is to promote a holistic approach to buildings that prioritises energy efficiency for those considering installing solar PV. For many homes, this will require the addition of significant levels of insulation. The idea is that this will be possible at no upfront costs, by using the Government's forthcoming 'Green Deal' scheme. (*Details of the proposed Green Deal are outlined in Section 10 of the full report*) The closing date for responses to the consultation was 23rd December 2011 and over 2,000 consultation responses were received. (*The anticipated impact of the proposed changes is detailed in paragraphs 2.41.1 – 2.41.5*)

2.28.7 The environmental group Friends of the Earth and two solar firms, Solarcentury and HomeSun, challenged the proposal in the High Court. They claimed that the deadline was unlawful as it was 11 days before the official consultation on the proposed cuts closed and had led to unfinished projects being abandoned. On 11th December 2011, the High Court ruled that the Government's plans to cut subsidies for solar panels on homes were legally flawed. Climate Change Minister Greg Barker reported on 21st December 2011 that the Government disagreed with the Court's decision and would be appealing, with the hope of securing a hearing as soon as possible.

2.28.8 On 19th January 2012, the Department of Energy and Climate Change announced that it had laid before Parliament draft licence modifications, which subject to the Parliamentary process set out in the Energy Act 2008, made provision for a reduced tariff rate from 1st April 2012 onwards for new solar PV installations, with an eligibility date on or after 3rd March 2012 under the FIT scheme.

2.28.9 On 25th January 2012, the Court of Appeal unanimously upheld the High Court ruling. The Government is now seeking permission to appeal to the Supreme Court. There is consequently a possibility that lower tariffs could be applied to installations which became eligible for FITs, on or after the proposed reference date of 12th December 2011. The Energy and Climate Change Secretary Chris Huhne said that the Government wanted to

maximise the number of installations that were possible within the available budget, rather than use available money to pay a higher tariff to half the number of installations. Solar PV could have strong and vibrant future in UK.

2.28.10 On 9th February 2012, the Government published the following documents:

- Government response to Consultation on Comprehensive Review Phase 1 – Tariffs for solar PV
- Consultation on Comprehensive Review Phase 2A: Solar PV cost control
- Consultation on Comprehensive Review Phase 2B; Tariffs for non – PV technologies and scheme administration issues.

2.28.11 The Phase 2A Consultation proposes a cost control mechanism for solar PV, which the Government believes will provide more certainty, predictability and transparency to the market. Subject to consultation and parliamentary consideration, it will be implemented in July 2012.

2.28.12 The Phase 2B Consultation proposes tariffs for anaerobic digestion, hydro, wind and micro CHP, and looks at various scheme administration issues. It also includes proposals to carve out special arrangements for community projects, including greater tariff stability.

2.29 Renewable Heat Incentive (RHI)

2.29.1 On 10th March 2011, the Government announced the details of the Renewable Heat Incentive Policy to encourage the uptake of renewable heat by providing long term financial support to renewable heat installations. The incentive is being introduced in two phases. 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.

2.29.2 As part of the first phase, the Renewable Heat Premium Payment Scheme was launched in July 2011 for the domestic sector to subsidise the cost of installing qualifying renewable heating systems. A second phase of RHI support will be introduced in 2012 to coincide with the introduction of the Green Deal for Homes. People in receipt of Renewable Heat Premium Payments will be able to receive long term RHI tariff support, as will anybody who has installed an eligible technology since 15th July 2009.

2.30 Renewable Heat Premium Payment Scheme

2.30.1 The Renewable Heat Premium Payment Scheme provides £15m of support for up to 25,000 renewable heat installations in homes, with a review point as the £10m limit is approached. The scheme commenced on 1st August 2011 and is scheduled to close on 31st March 2012. It is open to householders in England, Scotland and Wales and is mainly focused at around 4 million households in Great Britain, not heated by mains gas, who have to rely on higher carbon forms of heating, which tend to be more expensive. The technologies eligible for grant funding are: biomass boilers - £950, ground source heat

pumps - £1250, air source heat pumps - £850 and solar thermal hot water panels - £300. All successful applicants have to meet a number of conditions.

Key Findings

The Government has encouraged the switch from fossil based fuel energy to renewable energy through incentives such as the Feed in Tariff Scheme, the Renewable Heat Incentive and the Renewable Heat Premium Payment Scheme. These measures and the forthcoming Green Deal will deliver energy efficiency and renewable heat to households.

The deployment of solar PV over summer 2011 has accelerated rapidly. As at September 2011, 255MW of solar PV had been registered for FITs, double the projection for first two years of the FIT scheme. For the period 1st April 2010 to 12th December 2011, there have been 879 installations which qualify for the feed in tariff, giving a total capacity of 2.907 MW.

Raising awareness of the benefits of installing renewable energy technologies, energy efficiency measures and the Government's incentives is crucial to encourage take up.

The Government has published a number of consultation documents regarding the Feed-in Tariffs for Solar PV, anaerobic digestion, hydro, wind and micro CHP, administration issues and proposals to carve out special arrangements for community projects, including greater tariff stability.

.

Environmental Benefits

2.31 Renewable Energy Generation in County Durham

2.31.1 The use of renewable energy benefits the environment as it reduces greenhouse gas emissions, diversifies the country's energy supply and reduces its dependence on volatile fossil fuel markets, in particular oil and gas.

2.31.2 In County Durham considerable progress has been made in delivering renewable energy capacity in recent years. From having virtually no commercial renewable energy capacity 10 years ago, the County now has over 174.64 MW operational and approved capacity (January 2012), and it is anticipated that 21% of the County's electricity needs will be met from renewable energy sources by the end of March 2012. This is mainly the result of the development of onshore wind at various scales, although other technologies such as landfill gas and biomass have made a significant contribution. The table overleaf shows the amount of energy generated by the various technologies in County Durham.

Generation as % Electricity Use: Position at January 2012					
	Installed Capacity (MWe)	Output (GWh p.a.)	% Co. Durham household electricity	% Co. Durham electricity use	Equivalent no of households
Operational and Approved					
FiT (solar)	2.688	2.26	0.26	0.10	622.22
Sm Wind	0.68	1.61	0.19	0.07	371.94
Wind	128.99	305.06	35.41	13.50	70,615.51
Bio Energy	27.40	139.19	16.16	6.16	32,220.37
Landfill	12.76	78.24	9.08	3.46	18,112.11
Hydro	2.13	10.07	1.17	0.45	2,329.96
Total	**174.64**	**536.43**	**62.26**	**23.73**	**124,272.11**

2.32 Investment in Solar PV in County Durham

2.32.1 The feed in tariff scheme, as outlined in paragraphs 2.28.1 – 2.28.11, can play an important contribution in helping local authorities to save money and at the same time, help reduce carbon emissions. The Council's Cabinet at its meeting on 9th March 2011 agreed to invest in the installation of Solar PV to Durham County Council buildings to enable the Council to benefit from lower electricity costs and additional income through the Feed In Tariff Scheme. Reducing electricity costs is very important, given that retail electricity prices have increased substantially since April 2010. Following this decision, solar panels have been installed on Teesdale and Spennymoor Leisure Centres, Comeleon House, Tanfield Lea and the Service Direct building at Meadowfield. Based on an average solar array of 48kWp per building, it is estimated that the anticipated annual CO_2 saving will be 86.94 tonnes.

2.32.2 In addition to the above four buildings, a number of other Council owned buildings ranging from offices, business centres, Surestart Centres and libraries have been selected for the installation of solar panels to take advantage of the Feed-in-Tariff and free electricity.

2.33 Examples of buildings within the County already incorporating renewable energy techologies

2.33.1 Cassop Primary School was the first school in the UK to be powered by a wind turbine. Along with the 50kw turbine, the school can also generate power through photovoltaic solar panels and has a heating system that uses biomass fuel. Hot water is produced by solar thermal panels. The Greenhouse, Annfield Plain also incorporates a number of renewable energy technologies. It has ground source heating and cooling, a wind turbine and photovoltaic roof panels.

2.34 Environmental benefit of renewable energy technologies

2.34.1 The Council's decision to install renewable technologies such as solar panels and biomass boilers in its buildings, has significantly reduced the CO_2 emissions associated with council operations. The Council is committed to reducing CO_2 emissions and has set the ambitious target of a 40% reduction in respect of its own operations by 2015 and for County Durham by 2020.

2.34.2. In 2008/09 actual emissions associated with Council operations were 106,864 tonnes of CO_2 equivalent. This increased slightly in 2009/10 to 108,360 tonnes of CO_2 equivalent. In 2010/11 there was a decrease of 3.69%, taking the actual emissions to 104,360 tonnes of CO_2 equivalent.

2.34.3 The carbon savings from renewable energy technologies in County Durham as at 25th January 2012 are as follows:

• All technologies in operation	176,916 tonnes
• Technologies approved by planning but not in operation	81.383 tonnes
• Technologies in the planning process	124,315 tonnes
Total	**382,614 tonnes**

2.34.4 The figure of 382,614 tonnes equates to 51.5% of the Council's target of 742,000 tonnes. The majority of the energy is generated through large scale wind turbines.

Key Findings

The deployment of renewable energy technologies helps to protect the environment by reducing the emission of greenhouse gases, and thereby reducing the potential for the environment to be affected by climate change.

The County now has over 174 MW operational and approved capacity, (January 2012), and it is anticipated that 21% of the County's electricity needs will be met from renewable energy sources by the end of March 2012.

The renewable energy technologies currently in operation in County Durham, those given planning permission and those in the planning process as at 25th January 2012, will in total save 382,614 tonnes of carbon emissions, which equates to 51.5% of the Council's target of 742,000 tonnes. The majority of the energy is generated through large scale wind installations.

Economic Benefits

2.35 Economic Benefits of investing in Renewable Energy Technologies

2.35.1 Renewable energy employs more than a quarter of a million people nationally. (*October 2011*) The creation of jobs in the renewable energy sector, investment in new manufacturing capability, and the consequent direct and indirect benefits will support the transition to a green economy. (*UK Renewable Energy Roadmap*).

2.36 County Durham Development Compa

2.36.1 County Durham Development Company Ltd plays an important role in the creation of business opportunities in the renewable energy sector in County Durham. It works closely with the region's economic support agencies, to encourage innovation and strategic investment on behalf of Durham County Council, and provides economic intelligence about trends or issues in relation to renewable energy. Companies can be informed about national initiatives, or helped to connect with local partners, foreign companies, the region's universities, research institutes and centres of excellence. It has recently held a procurement workshop, especially aimed at the renewables sector where local small and

medium sized enterprises were provided with information on the Council's procurement policy and procedures, and has also held its third national Solar Flair conference.

2.37 Examples of Companies in County Durham engaged in the renewable energy sector

2.37.1 The following are examples of companies that are engaged in the renewable energy sector.

- **Dalkia – Biomass Plant (Electricity and Production)**
  The Dalkia Plant at Chilton provides biomass suitable for heating and CHP applications. The feedstock for the plant is around 120,000 tonnes wood, which has reached the end of its useful life. The plant is one of the first in the UK to burn domestic waste wood to provide electricity for the National Grid, rather than for an industrial site. Fifty jobs were created during the construction of the plant, with 17 permanent jobs created following completion. It is currently an electricity only scheme, but has potential to supply renewable heat to businesses and households in Chilton. Members of the Review Group visited the plant on 13th October 2011.

- **Romag**
  Romag Ltd is a glass processor serving the solar PV (photovoltaic), security glass, architectural glass and transport glass market sectors. It is based at Leadgate, Consett and was visited by Members of the Review Group on 13th October 2011. It focuses on bespoke 'functional' products, which are often technically challenging. In 2009, it employed 150 people. Recently the number has risen to 200 (October 2011) as a result of the investment in solar pv manufacture. Romag's solar photovoltaic products come under the collective name of *PowerGlaz*® and meet the requirements for Feed in Tariffs. An example of its bespoke products are the four 'solar trees', installed in the grounds of the University of Cambridge.

- **Cleaner Air Solutions**
  Cleaner Air Solutions Ltd (CASL), located at Meadowfield has been providing renewable energy systems to the domestic and commercial market since 2004. Athough solar pv is its speciality, the company also provides small scale wind turbines through to solar thermal, biomass and heat pumps. Over the past year, the company has completed over a megawatt of domestic, commercial and public sector installations in the UK. It is one of Europe's largest renewable technology companies and was the third company to achieve UK MCS accreditation. It employs 100 staff (October 2011) and provides various training courses at its City and Guilds accredited training academy at Meadowfield and within the Sharp factory, Wrexham, North Wales. Members of the Review Group visited Cleaner Air Solutions on 13th October 2011.

- **Seaward Electronic**
  Seaward Electronic Ltd, based on South West Industrial Estate, Peterlee, manufactures electrical safety testing equipment. It employs about 160 people. Its new division Seaward Solar specialises in the manufacture of test equipment for the Solar PV industry.

- **C A Group**
  CA Group Ltd was formed in 1983 and is located in Evenwood. It manufactures and installs metal roofing and cladding systems for the industrial, commercial, public sector and refurbishment markets. It employs approximately 300 people. CA Group was

shortlisted in the category of Commercial Renewables Project of the Year for its role in supplying and installing the world's largest SolarWall® Transpired Solar Collector (TSC) for Marks and Spencer, at its East Midlands Distribution Centre. The SolarWall® installation is expected to reduce the building's energy consumption by 30% and its heating requirement, by somewhere in the region of 40%.

2.38 MCS Approved Installers in County Durham

2.38.1 With regard to the microgeneration sector, the table below details of the number of MCS approved installers in County Durham as at 26th September 2011.

Air Source Heat Pumps	7
Biomass	1
Ground Source Heat Pumps	7
Micro – Hydro	1
Combined Heat and Power	0
Solar PV	17
Solar Thermal	6
Wind - micro	4

2.38.2 The table shows that there are employment opportunities in relation to the installation of hydro systems, biomass boilers and combined heat and power. Biomass developments in the UK continue to make good progress, and will become more popular as a result of the Renewable Heat Incentive. Micro hydro also continues to make progress. A specific area for development is to increase the pool of competent engineers. With regard to Solar Photovoltaic, the number of MCS approved installers in the County, compares very favourably with other local authority areas in the north east.

2.39 Skills and Training

2.39.1 Expanding the microgeneration sector and rolling out the Government's Green Deal requires a skilled workforce, which is able to deliver whole house assessments and to design, install and maintain microgeneration technologies and energy efficiency measures effectively and on a large scale.

2.39.2 The Sustainability and Climate Change Team have been in discussion with staff at Bishop Auckland College and it is the College's intention to establish a Renewable Energy Training Centre.

2.40 Microgeneration Stratey

2.40.1 The Department of Energy and Climate Change published in June 2011, a Microgeneration Strategy, along with the Microgeneration Industry Contact Group Action Plan. The strategy, which covers installations designed for generating less than 50kw for electricity and less than 300kw for heat, should improve the Microgeneration Certification Scheme. It sets out a number of actions in relation to the standard assessment

procedure, insurance and warranties, skills and knowledge, technology, communications and community scale energy. Responsibility for delivery of the vast majority of the actions within the strategy is assigned to industry, with the role of the Government, limited to 'streamlining regulation', whilst ensuring that consumers continue to be robustly protected.

2.41 Anticipated Impact of Proposed FIT Changes

2.41.1 The fast track consultation to reduce the Feed in Tariffs for solar PV from 43p per kWh to 21p per kWh for projects registered after 12th December 2011, will according to the Renewable Energy Association, reduce the size of the solar industry.

2.41.2 A survey was undertaken by the Renewable Energy Association and Solar Trade Association to provide an overview of early reactions and potential impacts of the proposals, to cut the tariff rates for new projects installed and registered after 12th December 2011. It was answered by 139 solar companies, employing 4,055 people. They feared job losses amounting to 1,715 people, representing 42% of their current staff. 57% of companies anticipated laying off at least half of current staff. However, many noted they were determined to hang on to as many staff as possible. The very large number of people employed by a relatively small part of the sector, suggests that employment across the sector may have been underestimated.

2.41.3 For companies involved in social housing, a total of 31,522 social houses were now likely to have their solar schemes cancelled. 33% of companies said they were concerned that their business may be forced to close. 50% were hopeful of continuing, but with a smaller workforce/business. 17% were confident they could weather these changes, with little or no anticipated change to staff numbers.

2.41.4 The Cut Don't Kill campaign – a coalition of UK solar power companies and Friends of the Earth – has responded to new Government proposals for a 52% cut in the Feed-in Tariff by warning that such deep cuts would "kill the UK solar industry stone dead", destroying 4,000 companies and 25,000 jobs.

2.41.5 In County Durham, a number of firms have laid staff off following the publication of phase 1 consultation document, however, it is anticipated that there will still be a demand of solar PV as the savings from avoided consumption of imported electricity have increased as electricity prices have risen substantially since April 2010.

2.41.6 The Climate Change Minister Greg Barker on 9th February 2012 announced the publication of plans to improve the Feed-in Tariffs scheme. According to the Minister, the new plans will see almost two and a half times more installations than originally projected by 2015, which is good news for the sustainable growth of the industry.

Key Findings

The growth in renewable energy has benefited the economy of County Durham through the creation of jobs directly related to renewable energy products, but also in the development of new technologies.

The Council supports a number of small and medium enterprises in renewable technologies. County Durham has one of only two manufacturers of photo-voltaic panels in the UK.

The County Durham Development Company also plays an important role in the creation of business opportunities in the renewable energy sector.

In County Durham, there are 43 MSC approved installers (*as at 26th September 2011*), however only 1 for biomass, 1 for micro hydro and none for combined heat and power.

The Microgeneration Strategy and Microgeneration Industry Contact Group Action Plan should improve the Microgeneration Certification Scheme.

Social Benefits

2.42 Fuel Poverty

2.42.1 The deployment of renewable energy technologies in people's homes also has social benefits. It can help to tackle the problem of fuel poverty, which with the economic downturn and rising energy prices, is likely to become an even greater challenge for County Durham.

2.42.2 Households are considered fuel poor if they need to spend more than 10% of their income on fuel to heat a home to an adequate standard of warmth, generally defined as 21C in the living room, and 18C in other occupied rooms. Fuel poverty can be caused by a combination of physical factors relating to dwellings, such as poor home insulation and heating systems, low household incomes, high fuel costs and under occupation. The consequences of fuel poverty can be cold damp homes leading to property disrepair, sub-standard housing, poor educational attainment, damage to health and quality of life. It can even result in excess winter deaths.

2.42.3 Fuel poverty is a particularly concerning problem in rural areas. It is estimated that half of homes in sparsely populated English communities have an energy efficiency rating of below SAP 30, which is considered a significant health hazard. The SAP rating is generated using the Government's Standard Assessment Procedure to produce an energy cost rating, expressed on a scale of 1 to 120. The higher the number, the better the standard. Many rural homes are older buildings. They are more likely to have solid walls, which are generally less well insulated than cavity walls.

2.43 Schemes to address fuel poverty

2.43.1 Making homes more energy efficient is a long term, sustainable solution to tackling fuel poverty. It allows people to use less energy to heat their homes adequately, with a positive impact on carbon emissions. Renewable energy technology is unfortunately out of reach of many UK homes and businesses due to the initial cost of installation. Not

everyone can afford the systems. The interim report of the Hills Fuel Poverty Review published October 2011, found that while it was essential to improve the energy efficiency of the UK's housing stock, those on low incomes in the worst housing can neither afford the immediate investment needed nor afford later repayments, without additional help. There are approximately 238,000 homes in County Durham and 63,000 households are classified as living in fuel poverty.

2.43.2 The Council's Cabinet at its meeting on 9th March 2011 agreed to provide financial help to homeowners to facilitate the installation of renewable technologies through the 'Helping Hands Renewable Energy Loan Scheme'. It was intended that financial assistance would be made available to homeowners in the form of a loan, in accordance with the Council's Financial Assistance Policy, to purchase renewable energy technologies that could be repaid via the Government's Feed-in-Tariff (FiT) or the forthcoming Renewable Heat Incentive (RHI). (*Details of FiT and RHI are set out in Section 7 of the full report*) The loan would be secured against the home, just like a mortgage, and the length of loan repayments would be linked to how much income was expected to be received from the Feed-in-Tariff. Unfortunately, work on introducing the loan scheme has currently ceased following the Government's proposals to reduce the tariffs for solar PV.

2.43.3 There are currently (October 2011) a number of schemes available where solar panels are fitted for free or a fee on suitable properties. Examples of such schemes are Solar 4 free and Solar Exchange from E.ON. Unfortunately, not many homeowners are aware of their availability. Such schemes may not be offered in the future, if the Government's proposal to introduce from 1st April 2012 multi-installation tariff rates for aggregated solar PV schemes is implemented.

2.43.4 In Craghead, Stanley, an area where the residents are deemed to be in fuel poverty, the Council has recently completed a Group Repair Scheme, which achieved a NHIC award. The scheme involved 89 privately owned properties, located in 5 key streets in the village. It included the installation of solar panels to reduce fuel costs and solid wall external rendering. The energy efficiency and renewable energy innovations included in the project, have resulted in the SAP rating of the properties increasing to above 65, providing an estimated 25% energy saving for residents.

2.43.5 The Renewable Heat Premium Payment Scheme, launched in August 2011, provides £15m of support for up to 25,000 renewable heat installations in homes. It is mainly focused on around 4 million households in Great Britain not heated by mains gas, who have to rely on higher carbon forms of heating which are more expensive. (*Further details of the scheme are outlined in Section 7 of the full report).*

2.43.6 The Green Deal and Energy Company Obligation consultation document, published on 23rd November 2011, sets out the Government's aim to tackle fuel poverty by reducing energy consumption by energy efficiency measures. It is pleasing to note that Appendix A of the consultation document, lists a number of renewable energy technologies as qualifying improvements. (*Details of the proposed Green Deal are outlined in Section 10, of the full report*)

2.44 Durham Solar PV1 Company

2.44.1 To assist with tackling fuel poverty in County Durham, the Council's Cabinet at its meeting on 14th September 2011 gave approval in principle to participating in a joint venture for the funding, supply and fit of photovoltaics to south facing roofs. The joint venture involved Frank Haslam Milan (Keepmoat), Durham County Council and the following social housing providers: East Durham Homes, Derwentside Homes, Dale and Valley Homes, Livin, Cestria and North Star. The aim was to install photovoltaic panels on up to 3,000 roofs, with an output of 2kWp. This would generate significant income from the feed in tariff to meet maintenance requirements and debt repayments, as well as create a profit for re-investment in further green initiatives, to reduce fuel poverty and carbon emissions in the private rented and owner occupied sector.

2.44.2 Unfortunately, the decision was made by the Joint Venture Company not to proceed with the scheme, following the publication the Government's fast track consultation on 31st October 2011 to reduce the tariffs for solar PV and introduce new multi-installation tariff rates for aggregated solar PV schemes. The proposed tariffs would substantially reduce the rate of return and not cover the cost of borrowing the amount of capital needed to install the panels.

2.45 Assistance to Town and Parish Councils and Community Groups

2.45.1 The Council's Sustainability and Climate Change Team provides town and parish councils and community groups/associations with advice and guidance on the opportunities that renewable technologies offer, as well as energy audits and building assessments. The Team also signposts the organisations towards available funding streams.

2.45.2 The Team has worked with organisations such as Ferryhill, Spennymoor and Great Aycliffe Town Councils, Woodham Community Association and Agnew Community Association, which has resulted in solar panels being installed on a number of community buildings. Officers also plan to work with Chilton Town Council in respect of the one off payment of £645,000, it would receive from Dalkia for projects and investments that improve energy efficiency, reduce carbon emissions and energy consumption within the Chilton area. The funding is likely to be released in September 2012.

2.45.3 On 9th February 2012, the Government published proposals to carve out special arrangements for community projects, including greater tariff stability.

2.46 Local Energy Assessment Fund

2.46.1 The Department for Energy and Climate Change announced on 7th December 2011 that £30 million of funding was to be made available for public sector and community energy efficiency projects. £10 million would be distributed through the Local Energy Assessment Fund (LEAF), and £20 million through the existing public sector Salix loans scheme, (Salix4Finance, the independent not for profit company).

2.46.2 The Local Energy Assessment Fund aims to support communities across England and Wales, to play an active role in the development of a low carbon society, where energy supply is both secure and affordable. The fund will resource work by community groups to understand their potential for improvements in energy efficiency and local deployment of renewable energy, alongside demonstrations of solid wall insulation.

2.46.3 The £10m scheme is being managed by the Energy Saving Trust and community groups such as parish councils, voluntary associations, development trusts, registered social landlords, charities and faith groups were eligible to apply for funding. The funding was awarded in two phases, with the first application period running until 22nd December 2011 and the second round until 20th January 2012.

2.46.4 A bid, submitted by CoRE for funding to undertake energy surveys in respect of 100 community buildings in the County, was unfortunately unsuccessful. However, bids submitted by CoRE on behalf of Witton Park Community Association to undertake a hydro scheme appraisal and Sherburn Hill Community Association to undertake a community renewables assessment were successful.

2.47 Coastal Communities Fund

2.47.1 The Coastal Communities Fund is proposed to commence in April 2012, with £23.7m available to UK coastal communities through funding equivalent to 50% of the revenues from the Crown Estate's marine activities. Bids to develop sustainable futures and improving skills will be eligible. As funding will be directly linked to the revenues raised by the Crown Estate's marine activities from that area, there will be separate funding for England, Wales, Northern Ireland, the Highlands and Islands and the rest of Scotland. Guidance for this fund has recently been issued and the Council will be considering a bid in March 2012.

2.48 'RENERGY' – EU Partnership Project

2.48.1 The Council has been successful in obtaining ERDF funding, amounting 175,000 euros over 3 years, to participate in the EU Partnership Project 'RENERGY' commencing in January 2012.

2.48.2 The overall aim is to improve, by means of interregional co-operation, the effectiveness of regional development policies in the area of energy efficiency and renewable energy sources, as well as to contribute to economic modernisation and increased competitiveness of Europe.

2.48.3 The specific objective is to develop an integrated framework for improving energy efficiency and the optimal utilisation of Renewable Energy Sources by offering an innovative model for creating sustainable energy efficient urban environments.

2.48.4 The Council will share its knowledge and best practices in relation to the following:

- Stimulating the use of renewable energy sources and energy efficiency solutions by changing people's attitudes.
- Increasing awareness and the uptake of renewable energy technologies
- Promoting local community involvement in the planning process of energy efficiency retro-fitting.
- Supporting businesses to enter the renewable energy market.
- Creating investment opportunities for the implementation of renewable energy and energy efficiency technologies.

2.49 New Buildings

2.49.1 One of the most sustainable ways of tackling fuel poverty and limiting the impact of fuel price increases is to build energy efficient buildings. It is therefore important that energy efficiency and carbon emissions are addressed at the design and planning approval stages. Developers and house builders should be encouraged to attain the higher levels of nationally recognised schemes, such as the Code for Sustainable Homes for domestic development and BREEAM for non domestic development. Currently, compliance with higher levels of the Code is voluntary.

2.49.2 The Solar Trade Association in its document '*Solar Revolution Strategy for the UK 2011',* proposed that the Department of Energy and Climate Change and the Department of Communities and Local Government should insist on solar technology being included in new build developments.

2.49.3 Birmingham City Council is considering proposals (*January 2012*) to install solar panels and other renewable energy generators in all new homes in Birmingham. The proposals form part of new planning guidance aimed at promoting sustainability in design and development, which will be published February, ahead of a six-week consultation. The proposals, if approved, could mean developers who do not provide a way of generating free power in new houses they build may have planning permission refused. The Council has a target of reducing the city's carbon footprint by 60% by 2026.

2.50 Code for Sustainable Homes

2.50.1 The Code for Sustainable Homes is the national standard for the sustainable design and construction of new homes, which aims to reduce carbon emissions and create homes that are more sustainable. It covers nine categories of sustainable design which are: energy and CO_2 emissions, water, materials, surface water run-off, waste, pollution, health & wellbeing and management & ecology.

2.51 BREEAM (BRE Environmental Assessment Method)

2.51.1 BREEAM, established in 1990, is a widely used environmental assessment method for buildings. It addresses wide-ranging environmental and sustainability issues and enables developers and designers to prove the environmental credentials of their buildings to planners and clients.

2.52 Regional Spatial Strategy

2.52.1 The introduction of the Regional Spatial Strategy (RSS) in 2008 provided the region with a renewable energy policy with some teeth. It stipulated that all major developments had to ensure that 10% of the energy used should come from renewable or low carbon sources. It had the desired effect of ensuring that developers could no longer ignore energy and sustainability and indeed many started to think about the process from the outset, rather than a last minute add-on.

2.52.2 When the RSS was repealed and then subsequently unrepealed earlier this year (2011), the condition outlined below was agreed by the Council's planning and sustainability officers as an appropriate way forward.

Prior to the commencement of the development, a scheme to minimise energy consumption shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall consist of energy from renewable or low carbon sources provided on-site, to a minimum level of at least 10% of the total energy demand from the development, or an equivalent scheme that minimises carbon emissions to an equal level through energy efficiency measures. Thereafter, the development shall be carried out in complete accordance with the approved scheme, prior to first occupation and retained so in perpetuity.

Reason - In the interests of sustainable construction and energy generation to comply with the aims of the Regional Spatial Strategy North East Policy 38 and Planning Policy Statements 1, 3 and 22.

2.53 Draft National Planning Policy Framework

2.53.1 In July 2011, the Government published the draft National Planning Policy Framework for consultation, which set out the Government's economic, environmental and social planning policies for England. It confirms planning's important role in tackling climate change and making the transition to a low carbon economy. The Framework states that planning can help secure radical reductions in carbon emissions through the appropriate location and layout of new development, support for energy efficiency improvements to existing buildings, and backing the delivery of renewable and low carbon energy, including community-led initiatives. The final version of the Framework will have some impact on the policies contained in the County Durham Plan. This plan will have a crucial role to play in ensuring that targets and objectives for energy efficiency and renewable energy generation are met.

Key Findings

The deployment of renewable energy technologies in people's homes can help to tackle the problem of fuel poverty, which with the economic downturn and rising energy prices, is likely to become an even greater challenge for County Durham. This is particularly important in rural areas, where many homes are older buildings with solid walls, which are generally less well insulated.

The interim report of the Hills Fuel Poverty Review found that while it was essential to improve the energy efficiency of the UK's housing stock, those on low incomes in the worst housing cannot afford to pay for it and 'need assistance from elsewhere'.

The provision of advice on renewable energy technologies and energy efficiency measures and funding streams to community groups/associations was a very important area of work, especially in light of the Council's review of community buildings. The Government is considering whether more can be done to enable genuine community projects to be able to fully benefit from FITs. It is proposing to strengthen the link between FITs and energy efficiency by introducing a new energy efficiency requirement for FITS for solar PV.

The Local Energy Assessment Fund (LEAF) was established by the Government in December 2011, to award grants of around £50,000 to local groups to better understand their energy needs and opportunities, and help them to react to Government policies, such as the Green Deal and the Renewable Heat Incentive.

The Council has been successful in obtaining ERDF funding, amounting 175,000 euros over 3 years, to participate in the EU Partnership Project 'RENERGY'. The overall aim of the project is to improve, by means of interregional co-operation, the effectiveness of regional development policies in the area of energy efficiency and renewable energy sources, as well as to contribute to economic modernisation and increased competitiveness of Europe.

One of the most sustainable ways of tackling fuel poverty and reducing carbon emissions is to build energy efficient buildings. Buildings in the UK account for over 50% of the country's carbon emissions. Developers and house builders should be encouraged to attain the higher levels of nationally recognised schemes such as the Code for Sustainable Homes for domestic development, and BREEAM for non domestic development. Currently, compliance with higher levels of the Code is voluntary.

The Draft National Planning Policy Framework sets out the Government's economic, environmental and social planning policies for England. It confirms planning's important role in tackling climate change and making the transition to a low carbon economy. The final version of the Framework will have some impact on the policies in the County Durham Plan. This plan will have a crucial role to play in ensuring that targets and objectives for energy efficiency and renewable energy generation are met.

2.54.1 Conclusions

2.54.1 The production of renewable energy offers County Durham considerable environmental, economic and social benefits.

2.54.2 Renewable energy systems produce zero or few greenhouse gas emissions whilst they are being used, and only small amounts during the manufacturing of equipment or fuels. They thereby reduce the potential for the environment to be effected by climate change, and reduce the demand for fossil fuels, which take millions of years to replenish.

2.54.3 The Council is committed to reducing CO_2 emissions and has set the ambitious target in its Low Carbon Strategy and Sustainable Energy Action Plan, of a 40% reduction in respect of its own operations by 2015 and for County Durham by 2020. The strategy and action plan, however need updating to include how the Council will promote and facilitate the installation of renewable energy technologies and energy efficient measures on land and property in the ownership of the Council, Town and Parish Councils, businesses, home owners, private sector & social landlords and community organisations throughout the county.

2.54.4 The County Durham Plan 'Towards a Strategy for Low Carbon Energy in County Durham' document May 2011, proposed that the core strategy for the County Durham Plan should set a target of 26% renewable electricity by 2020, with an aspiration to significantly exceed this, and a 6% renewable heat target.

2.54.5 In County Durham considerable progress has been made in delivering renewable energy capacity in recent years, which has consequently led to a reduction in carbon emissions. The carbon saving from renewable energy technologies currently in operation is 176,916

tonnes, those installations given planning permission – 81,383 tonnes and those in the planning process as at 25th January 2012 – 124,315 tonnes, giving a total saving of 382,614 tonnes. This total figure equates to 51.5% of the Council's target of 742,000 tonnes. The majority of the renewable energy is generated through large scale wind turbines. Installing large scale wind turbines can make a significant impact on the landscape, however, wind energy development in County Durham has taken place within a planning framework, which has sought to protect the best of the County's landscapes.

2.54.6 Hydro power is a relatively under utilised resource in County Durham, even though it has a considerably higher efficiency than wind. A survey funded by One North East (now dissolved) in March 2010, identified 7 sites on the River Wear, which have the potential to generate 1640Kw of power and annual revenue of £767,131. The harnessing of energy from these 7 sites should be encouraged and an evidence base, which takes account of resource implications, be developed. The Council Plan for 2012 – 16 lists the development of hydro centre at the former ice rink site – Freemans Reach, Durham City as an action in the 'Altogether Wealthier' section. There are also potential opportunities to capture hydro power at some of the drinking water reservoirs in County Durham.

2.54.7 County Durham has the highest number of renewable installations in the region. For the period 1st April 2010 to 12th December 2011, there have been 879 installations which qualify for the feed in tariff, giving a total capacity of 2.907 MW. The number well exceeds the Council's Performance Indicator target for the period.

2.54.8 The Council's Cabinet in March 2010 agreed to invest in the installation of solar panels on Durham County Council buildings to generate free electricity and income from the Feed in Tariff Scheme and reduce carbon emissions. Work commenced on 19th September 2011 on installing solar panels on County Council buildings, for example Teesdale and Spennymoor Leisure Centres and Comeleon House. The generation of free electricity is particularly welcomed, given that retail electricity prices have increased substantially since April 2010.

2.54.9 The Review Group highlighted the need to raise awareness of the benefits of installing renewable energy technologies and energy efficiency improvements and the Government's financial incentives.

2.54.10 The growth in renewable energy has also benefited the economy of County Durham through the creation of jobs directly related to renewable energy products, but also in the development of new technologies. There is, however, concern that the Government's proposals published on 31st October 2011 to reduce the feed in tariff for projects registered after 12th December 2011, will reduce the size of the solar industry. Two solar companies and Friends of the Earth have successfully challenged the decision in the High Court, as they claimed the implementation date was unlawful as it was 11 days before the official end of the consultation exercise. In response the Government laid before Parliament on 19th January 2012, draft licence modifications for a reduced tariff rate (from 1st April 2012 onwards) for new solar PV installations, with an eligibility date on or after 3rd March 2012 under the FITs scheme, and sought permission from the Court of Appeal for an appeal or a judgement on the FITs case.

2.54.11 On 25th January 2012, the Court of Appeal unanimously upheld the High Court's ruling. The Government is now seeking permission to appeal to the Supreme Court. There is, consequently, still a possibility that lower tariffs could be applied to installations, which became eligible for FITs on or after the proposed reference date of 12th December 2011.

2.54.12 On 9th February 2012, the Climate Change Minister announced the publication of plans to improve the Feed-in Tariffs scheme. According to the Minister, the new plans will see almost two and a half times more installations than originally projected by 2015, which is good news for the sustainable growth of the industry.

2.54.13 Renewable energy already employs more than quarter of a million people nationally (*UK Renewable Energy Roadmap*). The predicted expansion of the micro-generation sector as a result of Government incentives will require a skilled workforce, which is able to deliver whole house assessments and to design, install and maintain micro-generation technologies and energy efficiency measures. In County Durham, there were 43 MSC approved installers as at 26th September 2011, however only 1 for biomass, 1 for micro hydro and none for combined heat and power. There is consequently a need for more further education colleges/companies to offer accredited training in renewable technologies, especially those that will be eligible for the Renewable Heat Incentive.

2.54.14 In response to the above need, the Council's Sustainability and Climate Change Team has been in discussion with staff at Bishop Auckland College and the College is proposing to establish a Renewable Energy Training Centre.

2.54.15 The Council is already supporting a number of small and medium enterprises in renewable technologies such as Dalkia, Romag, Seaward Electronic, CA Group and Cleaner Air Solutions. The County Durham Development Company also plays an important role in the creation of business opportunities in the renewable energy sector, and the Council's Sustainability and Climate Change Team provides advice and assistance to businesses to enable them to benefit from Government initiatives / funding opportunities.

2.54.16 The deployment of renewable energy technologies in people's homes also has social benefits. It can help to tackle the problem of fuel poverty, which with the economic downturn and rising energy prices, is likely to become an even greater challenge. This is particularly important in rural areas, where many homes are older buildings with solid walls and are generally less well insulated. In County Durham there are approximately 238,000 homes, and 63,000 households are classified as living in fuel poverty.

2.54.17 Renewable energy technology is, however, out of reach for many homeowners due to the initial cost of installation. The interim report of the Hills Fuel Poverty Review found that whilst it was essential to improve the energy efficiency of the UK's housing stock, those on low incomes in the worst housing cannot afford to pay for it, and need assistance from elsewhere.

2.54.18 Some of the Council's planned schemes to address fuel poverty in the County were linked to the Feed in Tariffs, such as installing solar panels on social housing, and 'Helping Hands Renewable Energy Loan Scheme'. Work on developing these schemes has

ceased, following the publication of the Government's proposals to drastically reduce the tariffs and introduce new multi-installation tariff rates for aggregated solar PV schemes.

2.54.19 The Green Deal and Energy Company Obligation consultation document, published on 23rd November 2011, sets out the Government's aim to tackle fuel poverty by reducing energy consumption by energy efficiency measures. It is pleasing to note that Appendix A of the consultation document, lists a number of renewable energy technologies as qualifying improvements.

2.54.20 With regard to community buildings, the Council's Sustainability and Climate Change Team gives independent advice and guidance to town and parish councils and community groups/associations on the opportunities that renewable technologies offer and the funding streams available. It also undertakes energy audits and building assessments. This advice has resulted in solar panels being installed on a number of community buildings such as Woodham and Agnew Community Centres and Spennymoor Town Hall.

2.54.21 The Review Group was of the opinion that the provision of advice to community groups/associations on renewable energy technologies, energy efficiency measures and the funding streams available, was a very important area of work, especially in light of the Council's review of community buildings and rising electricity prices.

2.54.22 As part of its comprehensive review of the tariffs for solar PV, the Government is considering whether more can be done to enable genuine community projects to fully benefit from FITS. It has, however, launched the Local Energy Assessment Fund (LEAF) in December 2011 to fund grants of around £50,000 to local groups to better understand their energy needs and opportunities, and help them to react to Government policies, such as the Green Deal and the Renewable Heat Incentive.

2.54.23 The LEAF grant applications made in the first round by CoRE on behalf of Witton Park Community Association to undertake a hydro scheme appraisal and Sherburn Hill Community Association to undertake a community renewables assessment, have been successful. Unfortunately, a bid was submitted by CoRE for funding to undertake energy surveys in respect of 100 community buildings in the County, was not awarded any funding.

2.54.24 The Council has been successful in obtaining ERDF funding of 175,000 euros to participate in a 3 year EU Partnership Project 'RENERGY', commencing in January 2012. The overall aim is to improve, by means of interregional co-operation, the effectiveness of regional development policies in the area of energy efficiency and renewable energy sources, as well as to contribute to economic modernisation and the increased competitiveness of Europe. The specific objective is to develop an integrated framework for improving energy efficiency and the optimal utilisation of Renewable Energy Sources, by offering an innovative model for creating sustainable energy efficient urban environments.

2.54.25 One of the most sustainable ways of tackling fuel poverty and reducing carbon emissions is to build energy efficient buildings and improve the thermal efficiency of existing buildings. Buildings in the UK account for over 50% of the country's carbon emissions.

2.54.26 Developers and house builders should be encouraged to attain the higher levels of nationally recognised schemes such as the Code for Sustainable Homes for domestic development and BREEAM for non domestic development to ensure that energy efficiency and reducing carbon dioxide emissions are key considerations in the design and construction processes. Currently, compliance with higher levels of the Code is voluntary.

2.54.27 Birmingham City Council is considering proposals (January 2012) to install solar panels and other renewable energy generators in all new homes in Birmingham. The proposals will form part of the Council's new planning guidance and are aimed at promoting sustainability in design and development.

2.54.28 The Government is proposing to strengthen the link between FITs and energy efficiency by introducing a new energy efficiency requirement for FITS for solar PV. The aim is to promote a holistic approach to buildings that prioritises energy efficiency for those considering installing solar PV.

2.54.29 The Draft National Planning Policy Framework, which was published for consultation in July 2011, sets out the Government's economic, environmental and social planning policies for England. It confirms planning's important role in tackling climate change and making the transition to a low carbon economy. The final version of the Framework will have some impact on the policies contained in the County Durham Plan. This Plan will have a crucial role to play in ensuring that targets and objectives for energy efficiency and renewable energy generation are met.

Recommendations	
1.	That the Council's Sustainability and Climate Change Team continues to develop its role to: • raise awareness of energy efficiency measures and the opportunities to generate power from renewable energy sources, including the benefits of hydro power from rivers (for example the 7 sites identified on the River Wear) • provide advice and assistance to residents, businesses, town and parish councils and community groups/associations to enable them to benefit from Government initiatives / funding opportunities, such as the Renewable Heat Incentive, Feed In Tariffs, the Green Deal and the Coastal Communities Fund. • assist the Council in reducing its energy costs through renewable technologies.
2.	That the Council's Low Carbon Strategy and Sustainable Energy Action Plan be updated, to include details of how the Council will promote and facilitate the uptake of renewable energy technologies and energy efficiency measures within the Council and across the whole of County Durham.
3.	That developers and house builders be encouraged to attain the higher levels of nationally recognised schemes, such as: • Code for Sustainable Homes for domestic development and • Building Research Establishment Environment Assessment Method (BREEAM) for non domestic development.
4.	That the Council's Environment and Sustainable Communities Overview and Scrutiny Committee monitors the benefits of the Council's investment in renewable energy technology and the progress made in respect the EU Partnership Project 'RENERGY' and community energy efficiency projects / initiatives within the County.
5.	That the Council's Environment and Sustainable Communities Overview and Scrutiny Committee be updated and respond where appropriate, to the following: • Government response to Consultation on Comprehensive Review Phase 1 – Tariffs for solar PV • Consultation on Comprehensive Review Phase 2A: Solar PV cost control • Consultation on Comprehensive Review Phase 2B; Tariffs for non – PV technologies and scheme administration issues.
6.	That a systematic review of the report and progress should be undertaken six months after its consideration by Cabinet.