2011

East Ayrshire Council

Energy Strategy and Carbon Management Programme

"East Ayrshire Council is committed to reducing its Carbon emission and will put CO2 emissions reduction at the core of its business activities"

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Executive Summary

The Challenges

The reduction of fossil fuel consumption and the reduction of greenhouse gases, of which carbon dioxide (CO2) has the greatest effect on climate change, is a major challenge across the globe and across all sectors of society. The Scottish Government has set an interim target of a 42% reduction in CO2 emissions by 2020, based on a 1990 baseline. East Ayrshire Council, its Elected Members, employees, partners and communities all have an important part to play in this challenge.

There is a direct financial incentive for the Council to monitor, control and reduce its overall output of CO2 emissions, primarily in relation to the Carbon Reduction Commitment Energy Efficiency Scheme (CRC) which the Council is required to participate in. The CRC Scheme aims to improve energy efficiency and reduce the amount of CO2 emitted in the UK. Participants are required to monitor their emission levels and to purchase allowances for each tonne of CO2 emitted. As such, the more CO2 emitted, the more allowances that will require to be purchased.

In addition, the Council is a signatory to Scotland's Climate Change Declaration which recognises our responsibility to take action to both mitigate and adapt to climate change and to promote the sustainable development and well being of our local communities. The declaration includes a number of commitments which have been taken account of in the development of this strategy.

The Actions

Energy was previously perceived as an adjunct to process and service delivery. It now must be embraced and sit at the centre of all council functions from community planning and service delivery as our commitment to reducing emissions impacts on both a local and national level.

In order to meet the challenges of reducing energy use to meet nationally set targets, the Council will continue to review and change the way it operates and delivers services. This will be the case in a number of important areas including the buildings we operate from, our housing stock, waste management, street lighting, transport and procurement.

During this change process the Council will increase energy awareness of employees and ensure that energy efficiency is embedded and integrated within every process and service delivery area to ensure maximum effectiveness. Awareness will also be raised across our communities from our customers, to our business partners and those visiting our area.

The Community Plan Delivering Community Regeneration Action Plan 2011-2015 contains actions and projected outputs related to 'Reducing our carbon emissions to minimise our contribution to climate change' which focus delivery of tangible actions which will make a difference. These are as follows :

Local Outcome 7 – The natural environment protected, conserved and enhanced, and the negative effects of climate change mitigated.

Workstream 7.1 – Reduce our Carbon Emissions to minimise our contribution to climate change.

- *Lower the energy consumption and carbon emissions arising from the Council's activities.*
- *Lower energy consumption and carbon emissions throughout the East Ayrshire Community*.

The Energy Strategy and Carbon Management Programme builds upon the actions identified within the Community Plan Action Plan to establish a number of key objectives linked to projected outputs and local outcomes. These are developed in more detail throughout the document and a summary of the areas identified is provided below.

Key Objectives - Energy Strategy and Carbon Management Programme

Objective 1 - Reduce energy use in the buildings we operate from

Objective 2 - Reduce energy use in our housing stock

Objective 3 - Contribute towards the aspirations of the "Zero Waste Plan"

Objective 4 - Reduce the energy requirements of our street lighting

Objective 5 - Reduce emissions from transport fleet

Objective 6 - Raise energy awareness

Objective 7 - Ensure that we procure goods and services that are energy efficient

Objective 8 - Monitor, report and review energy consumption

Introduction

The effects of burning fossil fuels and the impact that the resulting emissions, particularly Carbon Dioxide (CO2), has on global warming is well documented. There is a growing body of evidence put forward by scientists on the alarming consequences from the planet heating up due to this so called "greenhouse gas" effect.

Whilst as individuals it might seem that our efforts are futile against such overwhelming worldwide devastation, every contribution towards reducing emissions can have a positive impact; no matter how small. Furthermore if individuals act, it will result in a positive effect to the communities they live in, which in turn will aggregate upwards, eventually to national achievements.

In the United Kingdom, and Scotland in particular, there is already much activity aimed at a concerted push to reduce fossil fuel usage. Central Government has set challenging targets to reduce CO2 emissions by 80%[1] by the year 2050.

East Ayrshire Council is committed to playing its part in the fight against climate change. As a large consumer of energy itself, and as a standard bearer for our communities, it is essential that we strive to reduce our consumption of fossil fuels, and energy consumption as a whole.

There are many worldwide pressures on the provision of fossil fuels and it is recognised that reductions in usage can secure wider stability in price and supply.

The following Energy Strategy and Carbon Management Programme will map the way forward for East Ayrshire Council's energy consumption reduction for the period to 2020 at which point the Scottish Government has set a challenging 42% reduction in CO2 emissions nationally.

It is important to note that whilst the strategy refers to the financial aspects of energy, the objective of the strategy is fundamentally intended to reduce energy consumption or where reduction is not possible, to use fuel sources that are less harmful to the environment, and as such the strategy cannot make any commitment to achieving financial savings.

To meet the Council's carbon reduction aspirations, this strategy outline what we propose to do, establishes an action plan detailing how we will do it and how the outcomeswill be recorded and reported.. The strategy will be an integral strand of the Council's overall sustainability drive and will contribute to our carbon footprint reduction aspirations.

In addition to the Energy Strategy and Carbon Management Programme, we will also publish a policy to promote and underline our commitment. A sample policy is included at Appendix 1 and when adopted will be made publicly available. When the draft energy strategy is finalised, it will require to be subjected to a Strategic Environmental Assessment in accordance with all such programmes (governed by legislation, The Environmental Assessment (Scotland) Act 2005) and plans to assess its

[1] Climate Change Act 2008.

impact on the environment. On completion of this the strategy will be presented to Cabinet for adoption.

The Scottish Government has established a dedicated team of officers – The SEA Gateway – who are responsible for co-ordinating all SEA correspondence, thus reducing the burden on Responsible Authorities.

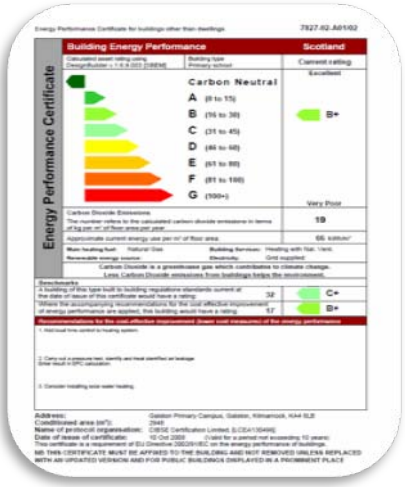
The Council will appoint an “in house” officer with previous experience and expertise in this field to steer this submission through the relevant stages to successful conclusion.

Drivers

There are a range of drivers that collectively provide the backdrop against which a reduction in CO2 emissions has to be set. The drivers are summarised as follows:

Drivers - Policy/legislation

- International
  - Kyoto Protocol came into effect on 16th February 2005. Signatories commit to reduce CO2 (and 5 other greenhouse gas) emissions or enter into emissions trading if levels not reduced. The Protocol requires 55 industrialised countries to reduce their greenhouse gas emissions to target levels 5.2% below that of 1990. If unable to, they must buy emission credits from countries that are under these levels.
  - Energy Performance Certificates (EPCs) are a statutory requirement [2] and organisations are required to have an EPC on all their public accessed buildings over 1000 square metres. Typically for a local authority this covers most large administration offices, schools and halls.
  - East Ayrshire Council has EPCs beyond the minimum requirement level and has EPCs for all of its buildings down to 50m2 and they are a useful tool in identify energy saving opportunities.



EPC certificate

  - EC Landfill Directive 1999/31/EC commits Councils to reduce their Biodegradable municipal waste (BMW) by 35% of 1995 levels by 2020.
- UK
  - Climate Change Bill 26th November 2008 –contains provisions that set a legally binding target for reducing UK carbon dioxide emission by at least 26 per cent by 2020 and at least 60 per cent by 2050, compared to 1990 levels. (These have since been reviewed up to 34% and 80%)
  - Carbon Reduction Commitment Energy Efficiency scheme – is a mandatory cap and trade scheme aimed at providing year on year reductions on CO2 consumption by all participants. All businesses with an annual consumption of 6000 mWh over their settled half hourly meters will be included. East Ayrshire Council is registered in the scheme along with around 3000 other UK organisations. The scheme came into effect on 1st April 2010 and is still subject to further consultation but initially it will cost registrants £12/tonne of CO2 emitted, for East Ayrshire Council, it is estimated this will amount to £283,000. The first year 2010/11 will be free to allow participants to adapt to the

[2] under Energy Performance of Buildings Directive (EPBD, 2002/91/EC)

scheme requirements but from 2011/12 onwards the full financial impacts of the scheme will be felt.

- Scotland
  - Climate Change (Scotland) Bill – 4th August 2009 – the Scottish Government has set even more challenging targets than the UK Government with 42% interim target by 2020, 50% by 2030 and 80% by 2050.

  - The Scottish Government paper - Energy Sector, Key Sector Report May 2009 – has highlighted the importance of renewable energy in both economic terms and in climate change benefits. Scotland has the natural resources and technical ability to maximise the growing demand for renewable technologies. The government aims to have Scotland as the green capital of Europe. The paper puts energy at the very centre of the government's agenda for sustainable economic growth. Targets are 50% renewable electricity by 2020 with an interim target of 31% by 2011; plus a 20% target of all energy use coming from renewable sources by 2020.

  - Recycling/Composting Targets as set by The Scottish Government have been set to achieve 75% Recycling/Composting of Municipal Solid Waste (MSW) by 2025 with a series of interim targets to ensure targets remain on line.

- East Ayrshire
  - Signatory to Scottish Declaration for climate change – along with all other Scottish Councils. Signing up to the declaration commits Councils to:
    - Acknowledge climate change is occurring
    - Welcome the opportunity to take action
    - Make a commitment to action
  - As part of the declaration East Ayrshire Council submits an annual report that takes a look at achievements to date and priorities for the year ahead. The writing of this strategy is a priority under the governance, leadership and management section of the Climate Change Declaration Report approved by Cabinet on 20 April 2011. There are other priorities in the report that are covered throughout this strategy.

  - The Council is committed to considering green technologies as part of our capital programme in the form of wind turbine, heat pumps, , bio-mass, photovoltaic cells and grey water system that recycles rain water.

  - Other local drivers to reducing CO2 emissions are contained in the Council's own Community Plan that is split into themes with associated outcomes. Particularly with regard to energy efficiency the following is identified for action:
    - Community Plan Delivering Community Regeneration - continuing to protect our environment and respond to climate change.
    - Community Plan Improving Health & well-being - provide appropriate information, advice and assistance to individuals and families in order to prevent fuel poverty.

Drivers- Financial

There are 4 main areas of energy costs in East Ayrshire Council, these are

1. Property
2. Transport
3. Street Lighting
4. Waste

Property

The property estate accounts for approximately 71% of CO2 emissions for the Council; energy costs themselves account for approximately 60% of the overall running costs of our buildings. The total spent on energy costs for property during financial years 2009/10 and 2010/11 were as follows :

Energy Costs for Property	**2009/10**	**2010/11**
Electricity	£1.824m	£1.616m
Gas	£1.899m	£1.548m
Oil	£0.071m	£0.039m
Other	£0.014m	£0.022m
Total – East Ayrshire Council	**£3.808m**	**£3.225m**

The cost of energy is unstable and annual rises are predicted to outstrip inflation over the medium term. It is therefore of the upmost importance to East Ayrshire Council to continue to identify opportunities where reductions in energy usage can be achieved in order to both mitigate these increases and potentially contribute further savings to on-going running costs.

The recently introduced Carbon Reduction Commitment Energy Efficiency Scheme also places a direct cost on CO2 emissions at £12/tonne of CO2; with considered opinion suggesting that this figure may rise to £30/tonne by 2020. However, if the scheme goes ahead as planned, carbon will ultimately be like any other commodity and therefore be subject to market forces which could result in figures well in excess of £30/tonne.

In addition to revenue costs, it is important that consideration is given to effectively using capital funding to support initiatives that would allow the construction of new, more energy efficient properties, and also the refurbishment of existing buildings whereby more energy efficient measures can be introduced such as double glazing, improved insulation, new heating systems etc. It is also important that the Council explores opportunities to fund additional capital works on a “spend to save” basis where revenue savings or income identified may be equal to or greater than the annual debt charges. Opportunities in this regard may present themselves through the identification of works where the saving in energy costs by introducing new components or technologies would be at least equal to the finance costs associated with the additional borrowing requirement.

In addition to reducing emission related costs through our buildings, the Council is also committed to reduce emissions from other sources e.g. transport, street lighting and waste.

Transport

Volatility in the oil market makes projections difficult but the average annual inflation per litre over the 4 years to 31/3/11 was 7.3% pa.

Street Lighting

Procurement Scotland guidance suggests that average increases in the costs of electricity will be in excess of 15% pa for the next two years.

Waste

It is anticipated that landfill charges will increase in line with inflation while the Landfill Tax Escalator will increase tax by £8 per tonne every year until 2014 resulting in an average annual rate increase of 10%.

Drivers - Community role and leadership

Community and Leadership

It is important that the Council leads by example with the communities that it serves and to those who visit the area for business or pleasure. By using energy efficiently and sharing our best practice, the Council demonstrates its commitment to mitigating the effects of climate change and encouraging and supporting our communities and partners to do likewise.

In encouraging our communities to be energy conscious, it is important that the Council publicises its efforts to reduce its own energy use (this is dealt with in a later section of the strategy). As well as our own reporting processes, the Environment Agency through the Carbon Reduction Commitment Energy Efficiency scheme will publish a national league table each year. The table will rank all participants in the scheme (around 3000 organisations both public and private sector) in order of their energy efficiency. This table is anticipated to become a benchmark for all registrants to the scheme and to provide both a reputational incentive and demonstrable method of energy efficiency for participants to improve their standing.

Other areas within which East Ayrshire Council participates and supports in the wider energy context includes HECA[3] (Home Energy Conservation Act). HECA requires every UK local authority with housing responsibilities to produce an energy conservation report that identifies practicable and cost-effective ways of improving the energy efficiency of all residential accommodation in their area; and to report on progress made in implementing the measures. The Council is committed to the ethos for which the act stands. Through the Act, East Ayrshire Council has a responsibility to devise strategies to achieve energy efficiency improvements across all tenures of housing stock within the local authority boundaries. Actions to date have produced over 30% energy reductions across the authority in the 10 years from 1997 -2007[4].

Activity that is geared towards achieving these reductions is a major contributor in the Council's aim to reduce fuel poverty for its residents and we will continue through other initiatives and joint working to further reduce the burden of rising fuel costs in our communities.

Energy Champion

To ensure the Council is focussed in its leadership role, an Energy Champion, Malcolm Roulston, Head of Corporate Infrastructure, has been appointed within the organisation. Energy champions can effectively raise awareness and stimulate activity within a local authority. An in-house champion brings an understanding of their organisation and community and is in a position to advise and support the best ways to achieve change.

To help achieve this goal, consideration should be given to having a reference in appropriate committee papers on Carbon Implications. This section would identify any increase or decrease in the Council's carbon emissions as a result of the committee paper's proposals.

[3] The Home Energy Conservation Act (1995)
[4] East Ayrshire Council's Home Energy Conservation report as at 31st March 2007

Carbon Reduction Commitment Energy Efficiency Scheme (CRC)

The Council's energy management practices where successfully implemented will result in an overall reduction in our energy usage and subsequent CO2 emissions. These reductions will need to be realised to ensure that the Council performs well under the recently introduced CRC scheme.

The Climate Change Act has set targets of a 34% reduction in CO2 emissions by 2020 and an overall reduction of 80% by 2050 compared to the 1990 baseline position. The Scottish Government has set a more ambitious interim target of 42% reduction by 2020 with the public sector being asked to contribute both directly from their own efficiency measures and also to encourage our communities to follow our lead. To ensure there is commitment to achieving these targets, the Government has introduced the Carbon Reduction Commitment Energy Efficiency Scheme (CRC). This is a mandatory emission trading scheme that aims to improve energy efficiency and reduce the amount of carbon dioxide (CO2) emitted in the United Kingdom. The CRC will impact upon large organisations in both the private and public sector with those that meet the qualification criteria, based upon electricity consumption in 2008, required to participate through the monitoring of their emission levels and the purchase of allowances for each tonne of CO2 emitted.

The higher the level of CO2 emissions the higher the level of required allowances therefore there is a direct incentive to monitor, control and reduce overall carbon output. It is expected that not only will this reduce our carbon emissions but it will also improve the overall level of energy efficiency.

The CRC requires that organisational performance be reported through annual performance league tables published by the Government showing comparative performance of all scheme participants, originally estimated to be in the region of 5000 but since reviewed down to 3000.

The CRC started in April 2010 and is divided into predefined periods known as phases. However, the recent Government spending review has resulted in amendments to the scheme and it is currently under consultation. The following notes attempt to take account of the proposed changes to the scheme but could be subject to further change.

CRC Scheme Details

There are 7 phases to the scheme. The first of the phases is the "Introductory Phase" and runs for 4 years till March 2014. Subsequent phases last for 6 years, with the exception of the 7th phase that will only be 5 years, taking the duration of the scheme to March 2046. Each phase is further divided into:

- **A qualification period** – during which organisations must assess whether they qualify to participate. East Ayrshire Council has qualified for the scheme.
- **A registration period** – during this period information must be submitted to the scheme administrator, which in Scotland is SEPA (Scottish Environment Protection Agency). East Ayrshire Council has registered for the scheme.
- **A footprint year** – The Council must monitor total emissions and determine what emissions must be included in the CRC.
- **A series of compliance years** – during which allowances are purchased for each tonne of CO2 emitted.

Participation in the scheme is compulsory for all organisations with annual electricity consumption through half hourly meters of at least 6,000 mWh. The half hourly meters comprise mandatory half hourly meters and voluntary half hourly meters.

Based on the consumption data available for 2008, the Council's electricity consumption through half hourly meters is 7,447 mWh approx. resulting in compulsory participation; as such the Council has registered for the scheme.

Financial Implications of CRC

The Council's inclusion in the scheme will result in both a substantial financial and staffing resource requirement. The financial requirement will be the cost of buying Carbon allowances for our annual emissions plus other administrative charges for the scheme.

The most significant cost involved in the scheme is the purchase of the allowances. This is calculated at £12.00 per ton of CO2, this figure is fixed at the start of the scheme but will be driven by market pressures in future years so could go up or down, most commentators are suggesting an upward trend.

Based on the first CRC submission, the cost of East Ayrshire Council's CO2 emissions would be:

Total CO2 emissions (Tonnes) – CRC annual report 2011	23,571
Cost of allowances @ £12/Tonne CO2	**£282,852**

There are a number of additional costs involved in the administration of the scheme including:

April 2010	Registration	£950
April (Annual)	Annual Administration Fee	£1,300

In addition to these financial considerations there is also the potential reputational damage to participants from their performance in the annual league tables to be published. These will be publicly available and will be a straight list of the performance of all participants listed from the best at the top to the worst at the bottom. There will be no distinction based on sector i.e. public and private organisations will be listed together.

To ensure that the Council is prepared for the scheme, a working group has been established involving staff from the Energy Team, Finance and Internal Audit.

Non-compliance with the scheme incurs a range of fines of varying severity, ranging from fixed fines up to £50k to rolling fines that continue to grow as long as there is non-compliance.

Updates to the scheme will be reported as they come into force.

Key Aims

The Council's energy initiatives should be geared towards achieving the following objectives in the order prioritised as shown.

1. ***Reduce the need for energy***
2. ***Use energy more efficiently***
3. ***Use renewable energy***
4. ***If we must use fossil fuels use those that are clean and efficient.***

To meet these objectives the Council is developing a Carbon Management Programme (CMP). This programme is the vehicle for delivering the energy efficiency measures outlined in this strategy. The CMP will be the second one the Council has undertaken, the first covering the 5 year period up to 31 March 2010 which resulted in an overall energy saving of 11.8% (2,959 tonnes CO_2[5]).

The second programme is similarly structured to the first and will contain an action plan, reflecting the priorities above of targeted energy reducing measures. The programme will be reported on and published on an annual basis.

The Carbon Management Programme has the following objectives.

Objective 1 - Reduce energy use in the buildings we operate from

Objective 2 - Reduce energy use in our housing stock

Objective 3 - Contribute towards the aspirations of the "Zero Waste Plan"

Objective 4 - Reduce the energy requirements of our street lighting

Objective 5 - Reduce emissions from transport fleet

Objective 6 - Raise energy awareness

Objective 7 - Ensure that we procure goods and services that are energy efficient

Objective 8 - Monitor, report and review energy consumption

An essential element of delivering the Energy Strategy and Carbon Management Plan will be the development of an effective programme of works to support the delivery of the defined action plan. Establishing an effective organisational structure for project management and development is crucial to successfully achieving these aims and aspirations. Every project has need for direction, management, control and communication, therefore all individual projects required to deliver the Council's Energy Strategy and Carbon Management Plan will be managed on a basis consistent with the PRINCE2 approach, as defined by the Council's Total Project Management (TPM) Methodology.

[5] Review of CMP undertaken by AEA consultants on behalf of the Carbon Trust in April 2010

Objective 1 - Reduce energy use in the buildings from which we operate

The Council has a substantial portfolio of buildings from which it delivers services ranging from large secondary schools, to offices, to cemetery bothys; each building has its own unique energy requirements. There is no specific 'one size fits all' energy management plan that is deployable in every property, however, the adoption of a standard structure, framework and principles will be applied to recognise and address this.

The following actions have been identified to meet this objective.

- Conduct energy audits to identify efficiency opportunities
- Integrate recommendations from energy audits into property maintenance regimes and capital projects
- Include energy management as part of the job descriptions of key personnel, including Premises Managers
- Produce a good housekeeping pack
- Prepare an education programme to be delivered across the Council, based on the Carbon Trust's "Local Authority Awareness Campaign" programme
- Include energy advice a part of design teams
- Record planned maintenance of energy plant and equipment in Technology Forge to create programmes of work ensuring compliance with statutory requirements
- Develop a renewable energy strategy

Action 1.1 - Conduct energy audits to identify efficiency opportunities

The first challenge is to assess the energy profile of each property and how we can recognise, identify and implement "good practice" energy efficiency measures. The recent restructuring of IT, Asset Management and Asset Improvement Service to form Corporate Infrastructure has taken cognisance of the need for additional resources in this area and has doubled the size of the Energy Team. The new structure also offers better potential for joined up working across the new service. In order to make a quick impact, the plan is to target energy reduction activity at the largest consuming sites.

Energy Audits involve the survey of properties to record energy efficiency measures implemented and identify those that if implemented would result in greater energy efficiency performance of the property thus reducing energy consumption, lowering carbon emissions and lowering the running costs associated with energy use. The surveys will also identify opportunities for introducing renewable technologies to replace fossil fuel sources of energy.

The recommendations contained in the energy audits will identify actions, and associated savings in terms of carbon emissions, energy consumption and payback periods for implemented projects. The surveys will be recorded in the Council's Corporate Asset Management software, Technology Forge and will be made available to building occupiers and those responsible for maintenance.

The Council should identify additional staff resource as part of the C I restructure who would be trained to undertake energy audits; an energy audit programme should be developed. Initially the audit will focus on categories of buildings beginning with secondary schools.

Action 1.2 - Integrate recommendations from energy audits into property maintenance regimes and capital projects

Once the initial surveys are completed, performance management arrangements will be put in place to ensure recommendations are implemented and are delivering the intended results.

Note – implementation of audit recommendations are subject to funding being made available.

Information from the energy audits together with recommendations from the Energy Performance Certificates and consumption history will be considered to establish if any changes to the fabric or infrastructure of the building could be enhanced with the aim of conserving energy.

The audit information will be used in conjunction with other asset management data e.g. condition surveys, suitability surveys and capital schemes and summary analysis of automated meter readers to determine which properties are best suited for investment, this in turn will be fed into capital and revenue plans as part of the Council's wider investment strategy.

As well as the collection and reporting of the physical data during an energy audit, an important task will be to engage with key personnel (premises managers) responsible for the control of energy systems, such as the heating. The longer term aim is to work with the premises managers to ensure the optimum performance of the energy elements of the buildings. These key staff will also be tasked with acting on monitoring and targeting data to improve the energy performance of buildings.

The identified measures from energy audits will be packaged into a programme of works to be managed and monitored in line with the capital programme. Previous efficiency measures as measured through the last Carbon Management Programme resulted in significant savings in CO2. For example:

Measure	Properties	Savings (Tonnes CO2)
Loft Insulation	165	566
Cavity Wall	43	628

There will be obvious links where the energy programme and capital programme will merge. The same regime of project management principles applied to the capital programme will apply to the energy programme. Projects will be delivered through the Council's adopted Prince2 project management process. As measures are implemented and evaluated, successful measures will be rolled out based on their effectiveness at other sites. The typical measures that can be implemented are as follows:

- Insulation (cavity and roof)
- Window replacement
- Flat roof conversions

- Solid wall insulation to “hard to treat” properties
- More efficient plant and equipment
- Controls - provide controls where not already available and where already in place ensure they are set correctly to achieve optimum performance of systems.

Discussions have taken place with The Carbon Trust to undertake a number of control audits and to train East Ayrshire Council staff on how to perform them. Trained staff would then work with building occupiers to ensure controls continue to be set correctly. The above measures need to be considered as part of a whole property appraisal and not simply as part of component renewal programmes.

This is a number of proposed activities being arranged through our partnership with The Carbon Trust.

The Council has embarked on a property rationalisation exercise as part of its efficiency strategy. This rationalisation will result in the consolidation of properties, more efficiently occupied and incorporating higher specification with regard to energy efficiency where refurbished or new build assets are brought into operation. This should be complemented by a fall in overall CO2 emissions.

The rationalisation will take the form of function specific approaches e.g. the corporate office accommodation strategy will result in 14 offices being vacated resulting in energy savings by consolidation of staff into fewer assets and area based reviews such as that piloted at Muirkirk.

Action 1.3 – Premises Manager will be responsible for energy management within their buildings

Work is currently on-going within the Council to develop the role of the Premises Managers for all properties whereby officers will be responsible for a range of matters such as health & safety, welfare, statutory compliance etc. It is therefore proposed that this will include responsibility for energy consumption within their buildings. These responsibilities will include ensuring that good housekeeping as outlined below is deployed at premises and to ensure that they monitor energy use at sites where access to energy data is available.

Action 1.4 - Produce a good housekeeping pack

As well as energy audits, good housekeeping measures will be introduced at each building and will be monitored by appropriately trained staff within the property. Good housekeeping measures will complement the energy audits by ensuring that occupiers utilise energy in the property with maximum efficiency. Good housekeeping will take the form of regular walk rounds to identify obvious signs of energy waste, for example:

- where there is heating on with windows open
- portable heaters being used
- accommodation too hot/too cold at start and end of day
- equipment on unnecessarily.

An energy handbook will be developed for premises managers to support a consistent approach to energy efficiency across the Council. Employees responsible for undertaking the good housekeeping measures and walk rounds will be able to call on the support of the Council's Energy Advice Unit.

The good housekeeping pack will be developed as a project within the carbon management programme. The content of the pack shall be developed making reference to ISO50001 (international standard for energy management).

Action 1.5 - Include energy advice as part of design teams

During the design phase of new buildings, energy awareness should be integrated into projects to minimise the need for energy and to consider the opportunities for installing renewable technologies:

- adequate insulation to reduce heat loss, and in turn, heating level requirements
- the orientation of buildings should be considered to benefit from natural light
- orientation can also maximise natural ventilation
- provide an aspect that can best accommodate renewable technologies such as south facing roofs for solar energy
- the site should be laid out to accommodate either at completion or a later date enough room for biomass fuel deliveries.

As part of the drive to ensure we design buildings that are energy efficient the Council's Energy Advisor is part of design brief teams. Their role is to ensure energy efficiency is core in the design of the project and consideration is given to technology such as renewable energy alternatives and also to source grant funding that is available to Council's to implement energy efficiency measures.

Action 1.6 - Record planned maintenance of energy plant and equipment in Technology Forge to create programmes of work ensuring compliance with statutory requirements

On-going maintenance of buildings is key to ensuring that design features that minimise energy use are operating to their optimum. This will take the form of reactive maintenance to fix faults as they arise but also planned maintenance to ensure that equipment does not deteriorate to a stage where it fails or becomes a safety risk to building users. When acquiring new plant and equipment, any planned maintenance requirements should be identified and recorded in the corporate asset management software, Technology Forge, to ensure that programmes and resources are in place to maintain the asset thus extending its life and preserving its functionality.

Action 1.7 - Develop a renewable energy strategy

The use of renewable technology, whilst not reducing the need for energy, does at least make sure the energy that we do use is generated from non-fossil fuel sources. It is widely accepted that in order to meet the challenging carbon emission reduction targets, and meet the requirements of CRC, that the introduction of green energy will have a key role to play.

Discussions have taken place with The Carbon Trust with regards to a feasibility study to consider the range and suitability of renewable technologies across the Council's estate.

East Ayrshire Council has already used alternative fuel sources on a number of sites.

Case Study: Galston Primary and Nursery School

Galston Primary and Nursery School was constructed in 2007/2008. The school brings together on one campus the previous nursery and Galston primary school buildings which had been located on 3 sites. The school was designed with high levels of insulation and had a range of renewable technologies incorporated into the building, including a 6 kW wind turbine and a 4.2 kW solar PV system to reduce mains electricity consumption together with a ground source heat pump to provide the space heating for the building. The school also incorporates a grey water system (collects rainwater and uses it instead of drawing water from the mains supply).

Galston Primary and Nursery School with wind turbine

There are other sites with wind turbines. For example, Auchinleck Academy has 2 turbines that between them generate a combined total of 12,931 kWh. To date these have mostly been incorporated for educational purposes and provide little by way of energy generation.

Footnote – As a result of the manufacturing company becoming insolvent, all existing wind turbines are being removed. Opportunities to install newer turbine technologies should be considered.

The Feed-In-Tariff and Renewable Heat Incentive schemes have been introduced to encourage organisations to deploy renewable energy systems, funding is considered in a later chapter of this strategy. Currently many renewable sources of energy require technology that is either not proven or is financially unviable. The Council will review the renewable source options as the technology develops and the ROI improves.

As part of the review, the Council is undertaking a feasibility study through Central Scotland Green Networks to consider retrospective wood fuel boiler installations at a number of schools where gas consumption costs the Council over £20k per annum. On-going discussions are taking place to ensure the installation of wood fuel systems is economically viable; the East Ayrshire Woodlands Trust will be approached with a view to supplying the fuel. It may be possible to introduce wood fuel systems across other sites, particularly where there is no gas heating option due to location.

Retrofit biomass container

We will focus on the following technologies with a view to implementing wherever appropriate:

- Wind turbines - power
- Biomass (Wood fuel) - heat
- Photo voltaic - power
- Solar thermal – heat

The use of renewable technologies will continue to be a strategic objective nationally in Scotland and funding streams are likely to continue to be made available; as such a renewable energy strategy will be developed.

Objective 2 - Reduce energy use in our housing stock

As part of the Home Energy Conservation Act 1995 (HECA) the Council was required to implement energy efficiency measures and report energy savings across East Ayrshire, across all tenures. The project ran from April 1997 to March 2007 and the savings achieved in terms of CO2 emissions was 30.2% (274,312 tonnes) as reported in the 5th biannual report. The Council continues to provide advice and undertake programmes of measures to build on the success of HECA.

East Ayrshire Council is committed to reducing the energy use of its own housing and other tenures and in so doing help to tackle fuel poverty. The following actions have been identified to meet this objective:

- Provide energy advice through helpline, surgeries, community talks and home energy visits
- Report on energy initiatives and activities such as Universal Home Insulation Scheme
- Work with partner organisations to deliver energy efficiency measures and report on outcomes

Action 2.1 - Provide energy advice through helpline, surgeries, community talks and home energy visits.

The Council currently has a dedicated energy team of three staff, and this is being increased to six as part of the restructuring of Corporate Infrastructure. Part of their function is to provide energy advice to our communities. The advice can range from a simple call via the energy advice helpline to a detailed survey and comprehensive home visit. Advice is available to all domestic tenures (and businesses). Each year they deal with circa 1500 consultations through the following activities:

- Advice Helpline
- Community Surgeries
- Community Group Talks/Promotional Events
- Home Energy Visit

The Community Plan Delivering Community Regeneration Action Plan includes a target to undertake 12 workshop sessions throughout the year to share expertise on energy consumption with householders and local businesses.

Action 2.2 - Report on energy initiatives and activities such as Universal Home Insulation Scheme

In the financial year 2010/11 the Council embarked on 2 programmes of work funded by the Scottish Government. The schemes known as HIS (Home Insulation Scheme) and UHIS (Universal Home Insulation Scheme), were aimed at providing insulation measures and energy saving advice to residents on an area based approach. The expansion of the area-based approach to home insulation will continue to strengthen the Scottish Government's contribution to the climate change agenda and help to tackle fuel poverty. This will also provide opportunities for local and national insulation companies and employment opportunities for energy assessors.

The HIS offered energy advice “on the door step” alongside free or discounted insulation. This scheme covered some 10,166 homes in the Ballochmyle and New Cumnock wards of East Ayrshire.

The UHIS scheme offered “free to all” insulation measures and covered 5,500 homes in the Altonhill South, Bonnyton, Crosshouse, Gatehead, Hillhead, Longpark and KilmarnockTown Centre areas of East Ayrshire.

The areas targeted included communities with the highest instances of fuel poverty in East Ayrshire as identified by the Fuel Poverty Mapping Indicator. Within these areas, there are also concentrations of households with extreme levels of income and employment deprivation. The East Ayrshire Council area contains approximately 56,000 homes so these projects are engaging with a high proportion of the population.

UHIS2 is about to et underway in the Doon Valley and Drongan areas; £180,000 is available to some 4,000 homes.

The Council will continue to work with and benefit from these types of initiatives going forward with UHIS stage 3 currently being scoped, but funding is yet to be made available.

East Ayrshire Council Housing

The Scottish Housing Quality Standard requires that all Council homes are energy efficient to an NHER (National Home Energy Rating) rating of 5 and a SAP (Standard Assessment Procedure) rating of 50. However, this is considered by the Council to be a minimum Standard and has been currently achieved within the majority of our housing stock.

To further reduce fuel poverty by enhancing the energy efficiency of our homes beyond this Standard, the Council has undertaken an accelerated programme to replace single glazed windows and doors with highly efficient double glazed units and is continuing with its ongoing programmes of heating replacement with “A” rated condensing heating systems, cavity wall insulation, loft insulation upgrading to latest Standards and any viable draught proofing measures that can be undertaken.

In addition to this, the Council is currently looking to instigate a pilot programme to supply insulated rendering to non-traditional properties, including those with underperforming external wall types.

Action 2.3 - Work with partner organisations to deliver energy efficiency measures and report on outcomes

The Council also runs its own programme of energy efficiency measures across its housing stock in conjunction with the schemes mentioned above. To support the Council deliver these measures, a partnership agreement is currently in place with a charitable organisation, the Wise Group. The partnership, established in April 1997 is fundamental to the Council's aim of tackling fuel poverty and efforts are directed at the elderly, the vulnerable and low income groups.

It should be noted that the terms and conditions of this contract is currently under review.

Objective 3 - Contribute to the aspirations of the "Zero Waste Plan"

The Council is committed to ensuring that the statutory obligations arising from the European Union Landfill Directive and national targets as set by Government will be met, or exceeded. These targets are outlined below.

- Meet EC Landfill Directive 1991/31/EC with regard to biodegradable Municipal Waste (BMW) allowed to landfill
- Meet recycling/composting targets as set by the Scottish Government
- Report progress on targets

Action 3.1 - Meet EC Landfill Directive 1991/31/EC with regard to biodegradable Municipal Waste (BMW) allowed to landfill

From a baseline of 1995, the amount of Biodegradable Municipal Waste (BMW) allowed to landfill is outlined below. BMW is any waste that is capable of undergoing anaerobic or aerobic decomposition, such as; food and garden waste; and paper and cardboard. BMW is waste from households; and other waste that, because of its nature or composition, is similar to waste from households. The targets set are as follows:

- 75% of 1995 levels by 2010;
- 50% of 1995 levels by 2013;
- 35% of 1995 levels by 2020.

Action 3.2 - Meet recycling/composting targets as set by the Scottish Government

Scottish Government has set targets aimed at reducing the Municipal Solid Waste (MSW) until 2025. The MSW is all types of solid waste generated by households and commercial establishments, and collected usually by local government bodies.

- 50% Recycling/Composting of MSW by 2013
- 60% Recycling/Composting of MSW by 2020
- 75% Recycling/Composting of MSW by 2025

The Scottish Government launched their Zero Waste Plan last year. The Zero Waste Plan, describes a vision for a Zero Waste Scotland where natural resource use is minimised, valuable resources are not disposed of in landfill sites and most waste is sorted into separate streams for reprocessing, leaving only limited amounts of waste consigned to residual waste treatment and ultimately landfill disposal.

As the total amount of waste collected by the Council falls year on year, and the volume of collected waste sent for recycling/composting increases year on year, the Council continues to make steady progress towards achieving a key aim of the Scottish Government - to create a zero waste society/economy for Scotland.

Through promotion of national schemes such as "Love Food Hate Waste", continued development of the domestic and commercial kerbside collection service and through joint working with North and

South Ayrshire Councils towards the procurement of a residual treatment facility, East Ayrshire Council is proactively working towards the aspirations detailed within the Zero Waste Plan.

Action 3.3 - Report progress against targets

In terms of recycling performance, East Ayrshire Council is regarded as one of the leading local authorities in Scotland. With a current recycling rate of 43.94% (2010/2011), the Council was one of the first Local Authorities in Scotland to achieve the 40% recycling target. Total waste in the last financial year amounted to 69,068 tonnes, with 38,718 tonnes of waste sent to landfill, of which 24,174 tonnes was biodegradable in origin.

Sights are now firmly set on the 2013 target of 50%. To help us towards attaining this target, a trial food waste and mixed plastics kerbside collection is ongoing during 2011. Early indications are positive, with almost 400 tonnes of food and plastics being collected in the first 6 months of the scheme, from 9500 participating households, being the first full month of data available. If rolled out to all collection areas, an increased diversion in the region of 4000 tonnes of waste per annum is projected, based on current collection rates. Council will determine the future direction of food waste and plastics collections once it is presented with the results of the trial collection system for consideration.

In addition, considerable effort will be directed towards achieving maximum diversion through the existing recyclate collection systems (blue bin– paper and cardboard, brown bin- green garden waste, and black box – glass, cans, aerosols, and household batteries). These collection systems remain key in our efforts to maximise diversion. Where feasible, and market demand/opportunity exists Council may consider extending the range of materials to be collected from the kerbside to include, for example, a form of textile collection.

Objective 4 - Reduce the Energy Requirements of our Street Lighting

Although electricity purchased for street lighting is currently 100% carbon neutral with energy being purchased from sustainable green sources, there is still the need to reduce the total amount of energy used to reduce costs. Energy saving is not a new concept in street lighting, even the oldest technology currently used the yellow low pressure sodium lamp is about 50% more energy efficient than modern domestic power saver 'bulbs'.

Technology has moved on and a number of interesting technologies to save energy have evolved in the last few years. The Council's activities in reducing its energy from street lighting are summarised below.

- Install 'white light' technology in new street lighting projects
- Introduce dimming where feasible
- Install LED lighting
- Report on projects – cost savings and CO2 savings.

Action 4.1 - Install 'White Light' technology in new street lighting projects.

In April 2010 the Council adopted 'white light' as its preferred colour for new street lighting installations. The change was more than cosmetic. European Road Lighting design standard BS5489/EN13201 allows lighting engineers to design the street lighting in residential areas to a lower lighting level when using 'white light'. East Ayrshire Council now designs all new lighting installations in residential areas to lighting class S4 compared to S3 previously adopted by East Ayrshire and most other Councils. This lowers the total energy use for the installation by about 25% with little or no loss in visual acuity, that is to say, you can see just as much with 25% less 'white light' lamps compared to previous types used.

New Lantern Technologies

As well as introducing the S4 lighting standard the Council introduced the use of the Philips Cosmopolis lantern. As well as giving a white light, this lantern offers significant savings in energy compared to the 'off white' High Pressure Sodium lantern previously used as the Council's preferred street light. The savings are in addition to the savings obtained through the use of 'white light', but road geometry usually restricts the overall saving to a more modest 30%-40%.

Retrofit lamps White Lamps

The Cosmopolis lamp comes as a complete package including its own dedicated control gear and it is not practical to retrofit it to an existing road lantern. There are however other lamp types such as Ceramic Metal Halide which can be retrofitted to existing High Pressure Sodium lanterns. Although these lamps are considerably more expensive than a traditional High Pressure Sodium lamp and not as efficient as Cosmopolis, a 50W lamp can effectively replace a 70W high pressure sodium lamp with little or no loss of visual acuity. The extra purchase cost is more than recovered by lower energy bills over the life of the lamp.

It is estimated that about 20% to 30% of East Ayrshire Council's lights could be converted to 'white light' using this technology. It is proposed to introduce a rolling programme of lamp conversions subject to available budget. Unfortunately these lamps cannot be used with lanterns with yellow low pressure sodium lamps.

Action 4.2 - Introduce Dimming where feasible

Trials of dimming technology have been carried out in two locations, the Jocksthorn Terrace area of Kilmaurs and the A719 at Moscow. Both trials were deemed to be a success, although each used a different approach to reducing light levels.

In the Jockthorn Terrace area the lighting levels were dimmed from a lighting class S3 to S4 between midnight and 6am (or sunrise) and no adverse reports were received. This directly led to the adoption of the S4 lighting standard being adopted for all new residential lighting.

On the A719 the lighting levels were reduced by 40% between midnight and 6am (or sunrise). The lighting levels on this type of road are determined by the amount of vehicles using the road. After midnight this reduces sufficiently to allow the dimming of the lights by 40% and still comply with the recommendation of Road Lighting standard BS5489/EN13201.

It is hoped to introduce this technology to other roads in East Ayrshire where there are similar variations in traffic numbers as budgets allow.

Action 4.3 - Install LED Lighting

Until quite recently this type of light was prohibitively expensive and the performance was poor. The situation is now changing very rapidly. Manufacturers are now claiming lamp life in excess of 10 years, with reduction in electricity costs of about 50%. As well as saving energy the increase in lamp life will make a significant reduction to the carbon footprint associated with maintaining the street lights and lamp cycling costs. The Council is now introducing this type of lighting in some of the Council's more remote communities where fuel costs and travelling time for repairs can amount to a significant part of the maintenance budget.

The cost of LED technology is falling rapidly and it is expected within a relatively short time span that this technology will soon be the preferred lighting solution for all new lighting installations in East Ayrshire.

Action 4.4 - Report on projects including cost savings and CO2 savings

The Council will continue to review and implement where possible the most energy efficient technologies in its street lighting whilst maintaining levels of public safety.

Objective 5 - Reduce emissions from transport fleet

The most significant greenhouse gas emitted from Council transport activities is carbon dioxide (CO2) from the combustion of diesel fuel. Emissions of other gases are generally much lower and despite their higher global warming potential are not considered significant. The following actions have been identified to meet this objective:

- Reduce fuel consumption across the Council's fleet through specification, procurement, maintenance and driver training
- Report on overall fuel consumption and CO2 emissions
- Develop a sustainable transport strategy

Action 5.1 - Reduce fuel consumption across the Council's fleet through specification, procurement, maintenance and driver training

In addition to CO2, the other regulated constituents of diesel engine exhaust gases are carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM) and partially burnt hydrocarbons (HC_2).

These have negligible global warming potential and are not classified as greenhouse gases but are regulated under European's exhaust emission EURO standards on account of their potential contribution to poor air quality. The European emission standards define the acceptable limits for exhaust emissions of new vehicles sold in EU member states. The emission standards are defined in a series of European Union directives staging the progressive introduction of increasingly stringent standards.

Over the past 20 years the very significant reduction in the concentration of these compounds has been achieved with the introduction of EURO standards, improving the exhaust gas emissions from diesel powered vehicles. The most effective methods for reducing CO2 emissions from vehicles are by reductions in fuel consumption, as savings in fuel can be converted directly into savings in CO2 using standard conversion factors. Management actions available are as follows:

- **Specification** - Vehicles are specified as standard to EURO5 with the exception of some vehicles that may be available by manufactures as Environmental Efficient Vehicles (EEV) which exceed EURO5 but do not meet EURO6. This is restricted to heavy goods vehicles for example refuse collection vehicles (RCV). Light goods vehicles and cars specified as EURO5 with a limit placed on the carbon output in grammes per kilometer (g/Km).

- **Procurement** – As part of the Council's vehicle purchase framework 2010-14 the evaluation considers specification, functionality, environmental issues together with purchase, whole life costs, after sales support, etc and scores accordingly.

- **Maintenance** – Whilst routine maintenance of vehicles in terms of lubrication, filter changing and fuel systems are essential for reliability, availability maximisation and assist to manage occupational road risk also imperative in ensuring environmental issues such as fuel economy and engine exhaust emission reductions. The driver daily checks and prompt

reporting of defects has an integral part to play ensuring the vehicle is at its' optimum for example, maintaining correct tyre pressures minimises rolling resistance thereby reduces fuel consumption and emissions.

The Council continues to specify the highest achievable emission controls such as EURO5 EEV together with limits on g/Km carbon output where applicable thus demonstrating Councils' commitment towards reducing all exhaust emissions including CO2.

Vehicle Driver

The driver may not be able to influence certain factors for example, type of vehicle or type of load but play a part in assisting to reduce fuel usage and CO2 output. As previously highlighted driver daily checks are vital as are:

- Load weight and position.
- The manner in which the vehicle is being driven for example speed, harsh acceleration/braking, etc.
- Fuel security - locking cap functional, accurate odometer entry at fuel management terminal.

Providing driver information, training and producing reports from management tools such as vehicle tracking and fuel management systems assist management to identify good as well as poor performance whereby allowing training intervention to take place for those identified.

Action 5.2 - Report on overall Fuel Consumption and CO2 emissions

The manufacture and marketing of devices and additives to reduce fuel consumption has been on-going over many decades. Such devices require proper evaluation. Transport Services shall continue to research and give consideration to devices but most importantly ensuring that devices do not jeopardise vehicle warranties. Current trials being undertaken are as follows:

- Zoeller EDU fuel saving device fitted to refuse collection vehicles. This proved to be inconclusive in terms of fuel consumption reduction and has since been removed from the vehicles
- Magnaflo - fuel line magnets trail is on-going with a number of vehicles types and to date has provided savings of between 4-6%. This is achieved by claiming to improve the combustion of fuel by altering the molecular structure of fuel or improving fuel's ignition qualities

In addition, a number of engineering trials are being undertaken to provide improved fuel economy such as:

- Speed restrictor for example reducing maximum speed of refuse collection vehicles to 40mph and for certain vans 60mph. This will continue to roll out as vehicles are replaced by new vehicles from the purchase framework
- Sheeting of certain tippers for example those operated by Roads Maintenance. By covering an open back of a tipper body with a sheeting system, even if the vehicle body is empty reductions in fuel consumption, according to the Department for Transport, by as much as 8% can be achieved.

Local Transport Strategy

As well as the above measures for Council fleet, there are the wider transport issues such as travel to work where there are opportunities to reduce the number of car journeys, e.g. car sharing schemes, improved public transport, encouraging the use of cycling or walking, and home working.

East Ayrshire Council's updated Local Transport Strategy (LTS) 2009 – 2014, sets out a long-term strategic vision and objective for such transport issues, incorporating its own 5 year Action Plan to deliver the sustainable aspirations required to address CO2 reduction.

Objective 6 - Raise energy awareness

Achieving the objective of reducing energy use has two key threads. The first is the deployment of physical measures such as insulation, heating controls etc. but the second is just as important and essential, changing the behaviour of the occupants in our properties. The occupants have a major role to play and it is imperative that energy awareness is provided to all staff and that all staff are made aware of their role.

Energy awareness should be treated in a similar manner to Health and Safety in that we are all responsible for our own actions and should seek to make the work place as energy efficient as possible. The following actions have been identified to meet this objective

- Develop and deliver an energy awareness campaign utilising the Carbon Trust's education awareness programme
- Maintain the momentum of the campaign and create a programme of workshops and awareness initiatives
- Create energy awareness pack to be included in employee induction
- Appoint an energy representative for each Council building
- Formalise the ECO Schools support pack

Action 6.1 - Develop and deliver an energy awareness campaign

The Energy Advice Unit has already been working on awareness sessions and has led workshops with janitors and teachers, involving over 100 staff. It is important that awareness is aimed at the right level for the right personnel e.g. the janitor in a school needs more in depth training and support than do the teachers because the janitor has the greatest access to controls systems for heating plant etc. and is therefore able to make the greatest impact on efficiency savings.

Discussion is ongoing within each service area to ensure that energy management is written into the job specifications of key staff members (i.e. premises managers) who can most influence the energy consumption of the properties for which they are responsible.

An energy awareness campaign is being developed and will be rolled out across the Council in 2011/12. This is currently being developed with the Carbon Trust. This will be a major undertaking and resource intensive, options on how best to achieve this roll out include

- Corporate Learning and Development delivering sessions
- "Train the Trainer" whereby managers are given the tools to provide toolbox talks on energy efficiency in their locations
- Online power point presentation delivered through the intranet

Action 6.2 - Maintain the momentum of the campaign and create a programme of workshops and awareness initiatives

After the energy awareness campaign is delivered (2011/12) the challenge is to then keep the momentum going as studies have shown that good practice tends to wane after a few short months. To ensure that the message does not become stale, the Energy Advice Unit will run different campaigns and workshops throughout the year aimed at keeping staff motivated to conserve energy use. Energy awareness should also form part of new employee induction.

For the campaign to be successful it will be important to keep staff informed of the energy consumption of their properties and this will be done by making information widely available. This is discussed under a later chapter of the strategy.

Action 6.3 - Appoint an energy representative for each Council building.

It is imperative that each building has a dedicated member of staff responsible for energy. It is proposed that this role by fulfilled by the Premises Managers.

Action 6.4 - Formalise the ECO Schools support pack

The School estate as a whole is particularly an area where energy awareness needs to be successfully implemented and this can be done through the ECO Schools programme. The Energy Advice Unit does and will continue to support the programme by providing consumption data and talks at relevant parts of the programme. This support needs to be structured in order that the resources of the Energy Advice Unit can be deployed to maximum effect.

The EAU would be keen to develop an education programme involving all pupils; this would be developed to complement the themes of A Curriculum for Excellence.

Action 6.5 - Support for local businesses / community enterprise

The Energy Advice Unit will support local businesses / community enterprise through the Energy Advice Line, whilst also working closely with organisations who lease Council property, by creating a pathway of support and assistance through the Council's Estate Management Section.

Action 6.6 - Sustainable ICT

All areas of Council business must show a commitment to addressing environmental issues; an important contribution to sustainable goals through the effective use of ICT can be made. We will continue to develop online / paperless transactions; and we will ensure that the way in which we deploy and manage our ICT operations minimise the effect on the environment in terms of energy usage and emissions. To this end, a small number of pilot projects are underway.

Objective 7 - Ensure that we procure goods and services that are energy efficient

The following actions have been identified to meet this objective

- Whole life cost of energy consuming products should form part of the procurement process.
- Acquire products that are energy efficient
- Tenders to reward sustainable bidders

Action 7.1 - Whole life cost of energy consuming products should form part of the procurement process

The role of procurement in energy efficiency cannot be under estimated. When deciding on which service or product to purchase, energy efficiency and the whole life cost of the purchase should be considered e.g. it might well be that a piece of equipment is cheaper to purchase when compared to a similar item but the life costs to include energy consumption should be taken into account. This highlights the need for energy issues to be incorporated across the spectrum of services.

The McClelland report (March 2006) resulted in the procurement of energy for the whole of the public sector in Scotland being centralised. Procurement Scotland manages the procurement of electricity and gas with other fuel sources to follow. There are obvious financial benefits to be gained by purchasing fuel in large volumes and having a dedicated expert team negotiating prices reduces the risk from individual bodies buying on their own.

To support this procurement process, the Energy Advice Unit within East Ayrshire has to keep records of sites and consumption to provide Procurement Scotland with accurate data when negotiating contracts. It is also the responsibility of the Energy Advice Unit to manage any changes to the Council's energy requirements and notify Procurement Scotland accordingly.

Action 7.2 - Acquire products that are energy efficient

East Ayrshire Council manages the procurement of supplies and equipment through the PECOS system, a centralised, fully automated web based electronic procurement system accessed through an Internet connection which allows most standard web browsers to be used. It allows authorised staff in the Council to access PECOS easily from their computer providing they have Internet access. It is imperative that those who are tendering to provide items through PECOS are considering the energy efficiency of products as part of the evaluation process. These considerations should account for the whole life cost of the asset and not simply the initial outlay.

Similarly when procuring services from third parties it is important that the provider can demonstrate that they are operating in an environmentally and energy sustainable manner and those that are BS EN16001 compliant will receive the commensurate score in tender evaluation.

The Council has revised its corporate procurement strategy[6], to include a revision on sustainable procurement. The strategy is supplemented by an improvement plan which includes reference to sustainability issues in such areas as the development of commodity strategies and supplier development generally.

[6] Cabinet paper – 20th April 2011 – Corporate Procurement Strategy 2011-13

Objective 8 - Monitor, report and review energy consumption

The success of this strategy and associated Carbon Management Programme will be determined by the CO2 reductions achieved. The measurement of this reduction will have to be robust, accurate, consistent and auditable.

- Install automated meter readers to provide accurate energy consumption information
- Report energy consumption at the top 25 consuming sites and top 25 energy intensive sites
- Create a baseline for monitoring energy consumption as at 1 April 2011
- Benchmark East Ayrshire Council energy use internally and externally with established partners
- Set targets for energy consumption, initially at top 25 consuming sites (but eventually to all sites).
- Establishment of a cross Council Carbon Reduction Team chaired by the Head of Corporate Infrastructure.

In order to gauge the success or otherwise of our actions it will be necessary to deploy an energy management system. Good energy management systems allow reporting of energy consumption and spend to allow comparison and reflect "good practice" helping to ensure action is targeted in areas of excess. East Ayrshire Council currently has STC energy bureau system to provide an energy management solution. On review, the data in the software is not as robust as it could be, however this is being addressed by reviewing our energy management systems.

Action 8.1 - Install automated meter readers to provide accurate energy consumption information

East Ayrshire Council takes its own readings at a number of establishments and provides them to the energy suppliers on a monthly basis. Unfortunately the supplier is not obliged to use these readings so the Council is rolling out AMRs (Automated Meter Readers) to assist with energy management as billing data is not suitable for this purpose.

Automated Meter Readers (remotely read meters using mobile technology) – can identify 12% carbon savings and implement on average 5% carbon savings. Paybacks are fairly short e.g. electricity about 1 yr and gas about 2 years based on 2006 fuel prices and technology costs identified by the Carbon Trust[7]. Since then fuel prices have increased and therefore off-setting savings are more difficult to achieve.

Data from AMRs will be reviewed by the Energy Advice Unit and energy monitors on site to determine areas of waste e.g. high electricity consumption through the night. The data from the AMR is available on a day plus one basis.

[7] Advanced metering for SMEs - Carbon and cost savings. Published by the Carbon Trust in May 2007.

A full data validation of the energy management system in preparation for the CRC scheme is ongoing and the energy management data has been cross matched with the corporate asset management software Technology Forge to ensure it is inclusive. The feasibility of linking the AMR data to the Council's performance management system CORVU will also be considered.

Ultimately the aim will be to provide proactive energy monitoring tools across the Council via the intranet and online tools.

Action 8.2 - Report energy consumption at the top 25 consuming and top 25 energy intensive sites / sites consuming 50% of energy across the Council estate.

Action 8.3 - Create a CRC baseline as at 1/4/2011 (23,571 tonnes)

Action 8.4 - Benchmarking internally/locally/nationally to determine and share best practice

Action 8.5 – Reporting of Energy Consumption & Performance

To keep the Corporate Management Team and Elected Members regularly updated on the Council's performance with regards to the Energy Strategy, key indicators will be included in the East Ayrshire Performs report.

Details will also be published annually.

Action 8.6 - Set targets for energy consumption, initially at the top 25 consuming sites (or sites consuming 50% of energy)

Action 8.7a – Establish a Carbon Reduction Commitment (CRC) Working Group

The implementation of this energy strategy and accompanying Carbon Management Plan will require a structured approach to reviewing and scrutinising the results.

Key role – to report on carbon emissions produced by EAC; the Group will be comprised of officers from the EAU, Finance and Internal Audit with the remit to ensure compliance with the Government's CRC requirements to report carbon emissions produced by EAC.

Action 8.7b – Establish a Carbon Management Programme Working Group

Key role – to develop and deliver projects and / or initiatives to reduce carbon emissions produced by EAC. The Group will be comprised of officers from across the Council with the common aim of providing information and identifying projects to reduce emissions; these will be incorporated in to a Carbon Management Programme document with an action plan stating the tonnes of CO2 being saved against each project, initiative or activity etc.

Finance

The implementation of this energy strategy in its fullest will require to be supported through the identification of revenue and capital funding, the latter may well be viewed as being on a spend to save whilst it is expected that revenue costs would be at least offset by efficiencies delivered through a positive approach to energy management across the Council. This will require to be achieved against a backcloth of a reduction in the overall level of funding available to local authorities over the next 5 years.

As such it is imperative that the Council sources as much external funding as possible.

Central Energy Efficiency Fund (CEEF)

All Scottish Councils have a fund, CEEF , which is the Scottish Government's Central Energy Efficiency Fund and is a key vehicle for delivering energy efficiency and small-scale renewable energy measures across the public sector in Scotland. This fund is self financing in that it is paid back through the financial savings generated from the energy efficiency projects. The Council currently has just over £350,000 in this fund. To date the Council has used the fund to finance 15 projects totalling over £200k. The use of the fund is restricted to support projects that provide measureable energy savings.

An example of Council use of the fund was to install low energy lighting at a number of sites including James Hamilton Academy where the projected savings were in the order of almost 65,000 kWh and £4500 annually.

Any application to the fund requires that the savings are calculated up front.

As well as this fund there are other funds to incentivise organisations into deploying renewable technologies. The two schemes at the moment that are offering the most attractive incentives are Feed in Tariffs and the Renewable Heat Incentive.

Feed In Tariff (FIT)

Feed in tariff (FIT) is a scheme that guarantees a minimum payment for all electricity generated by the renewable system, as well as a separate payment for the electricity exported to grid. These payments are in addition to the bill savings made by using the electricity generated on-site. The payments vary depending on the type and size of installation with photo voltaic (PVs) under 4kW earning the greatest return at over 40p per kWh of energy generated. Viable projects will be identified to take advantage of this incentive in both the housing and non-housing stock. Other energy sources that can benefit from FITs include wind, anaerobic digestion, hydro and micro CHP. The payment is guaranteed for 10 - 25 years depending on the system but the tariff will reduce after 31st March 2012 and will be reviewed in 2013.

Note – with the proposed changes to the Feed In Tariff, the economic viability of each proposed project would need to be revisited.

Renewable Heat Incentive (RHI)

The renewable heat incentive (RHI) scheme is the first of its kind in the world to provide long term support for renewable heat technologies, from household solar thermal panels to industrial wood pellet boilers. The scheme has yet to be finalised by the government but the Council is already considering the feasibility of installing retrofit biomass systems at a number of the larger gas consuming sites. When the RHI tariffs are published, the final calculations can be made and presented in a business case.

It will be the role of the Energy Advice Unit to source and apply for funding from the above and any other available income sources accessible by the Council. Projects will be reported on annually.

Carbon costs

As well as sourcing external funding the Council needs to link energy efficiency measures to the capital programme to consider renewable technologies in new builds/refurbishments and also other energy related issues should be accounted for as a core part of options appraisal. All option appraisals should consider life costs of new technology systems compared to fossil fuels with regard to revenue spend over the life of the assets. Consideration of the two funding sources will then have a bearing on the most cost efficient systems to be installed.

In considering the forward capital investment programme for the Council it will be important to consider the net impact on the Council's carbon footprint of any new build and major refurbishment projects and assess whether further more radical decisions are needed in terms of for example co locating services within shared campus facilities to maximise the efficiencies needed. This should be factored into the settlement reviews that are currently underway.

CO2 emissions are now effectively a tax under the CRC scheme revised, as such project managers will have to take account of the cost of CO2 emissions as a financial constraint i.e. during first year of the CRC scheme, CO2 will cost £12/tonne and are predicted to rise via an escalator possibly to £30/tonne by 2020. Carbon allowances will be a commodity for sale on a competitive market basis – this additional cost of purchasing carbon allowances should be built into finance models when costing capital works. In order to achieve its published carbon reduction targets, it is anticipated that the Government will reduce the total number of allowances available to organisations on an annual basis. If organisations fail to reduce their CO2 emissions by the same rate, they will be required to purchase additional allowances on the open market at a price which could be considerably higher than that fixed under the CRC scheme.

Revenue budgets

In order to achieve CO2 reductions across the Council as a whole, the cost of energy has to be clearly conveyed to those paying the bills as well as those consuming the energy. The connection between consumption and cost can become detached particularly with the introduction of group wide statement billing whereby the energy bill is received and paid centrally with recharges to services made thereafter.

Statement billing is a cost effective method of consolidating the high volume of individual bills into a single monthly payment, is however recognised that this can be viewed simply as a fixed central recharge for energy consumption that management has little influence or control over. It is therefore important that steps are taken to improve the overall level of energy and carbon reporting routinely available to budget holders. This requires that those managers are provided not only with periodic financial information but also the related consumption figures in order that the impact of good housekeeping feeds through to the budget management process. Consideration should be given to achieving Council wide energy saving targets of 2 per cent year on year.

Action Plan

Action ID	Action	Linked to	Responsible	Date
Whole document				
0.1	Create Energy Strategy and Carbon Management Programme	Community Plan Workstream 7.1 action a.	Head of Corporate Infrastructure	2011/12
0.2	Subject draft Energy Strategy and Carbon Management Programme to Strategic Environmental Assessment (SEA)	The Environmental Assessment (Scotland) Act 2005 East Ayrshire Council Cabinet – 20 April 2011 Sustainable Development & Scottish Climate Change Declaration	Head of Corporate Infrastructure	April 2012
0.3	Appoint an Energy Champion	Best practice guidance from Carbon Trust.	Corporate Management Team	Malcolm Roulston
0.4	Adopt Energy Strategy and Carbon Management Programme after SEA	N/A	Cabinet	June 2012
0.5	Review strategy and associated documents annually	N/A	Head of Corporate Infrastructure	April annually
0.6	Sign finalised Energy Strategy and Carbon Management Programme	N/A	Chief Executive Council Leader Energy Champion	May / June 2012
0.7	Publish a copy of the Energy Strategy and Carbon Management Programme on the Council's website.	N/A	Head of Corporate Infrastructure	May / June 2012

Action ID	Action	Linked to	Responsible	Date
Carbon Reduction Energy Efficiency Scheme (CRC)				
0.8	Submit Footprint Report	N/A	Energy Team	Completed 29th July 2011. Updated annually
0.9	Submit annual report	N/A	Energy Team	Completed 29th July 2011. Updated annually
0.10	Report cost of carbon allowances to finance for budget purposes	N/A	Energy Team	Completed August 2011 Updated annually
0.11	Ensure compliance with scheme requirements	N/A	Energy Team / Internal Audit	Completed August 2011 Updated annually
Energy Management				
Objective 1 - Reduce energy use in the buildings we operate from				
1.1	Undertake energy audits (initially do top 25 energy consuming sites)	Community Plan Workstream 7.1 Action a.	Head of Corporate Infrastructure	On appointment of Senior Energy Officer
1.2	Integrate recommendations from energy audits into property maintenance regimes and capital projects	N/A	Head of Corporate Infrastructure	On appointment of Senior Energy Officer
1.3	Premises Managers will be responsible for energy management as part of the revised job descriptions	N/A	Head of Corporate Infrastructure	Complete
1.4	Produce good housekeeping pack	N/A	Head of Corporate Infrastructure	On appointment of Senior Energy Officer
1.5	Include energy advice as part of design teams	N/A	Head of Corporate Infrastructure	closer working partnership with project boards required
1.6	Record planned maintenance of energy plant and equipment in Technology Forge to create programmes of work ensuring compliance where statutory requirement	N/A	Head of Corporate Infrastructure	Tasked to Corporate Infrastructure – Property Maintenance

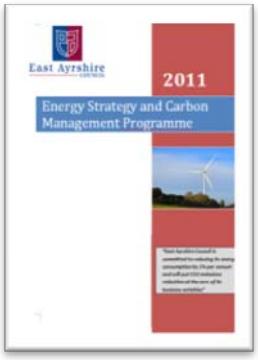
Action ID	Action	Linked to	Responsible	Date
1.7	Develop a renewable energy strategy	N/A	Head of Corporate Infrastructure	on-going discussion with The Carbon Trust to develop a desktop exercise across the Council (non domestic property) estate

Action ID	Action	Linked to	Responsible	Date
Objective 2 - Reduce energy use in our housing stock				
2.1	Provide energy advice through Helpline, surgeries, community talks, home energy visits. • 12 surgeries • 12 community talks	Community Plan Workstream 7.1 action b.	Head of Corporate Infrastructure Head of Corporate Infrastructure	Annually Annually
2.2	Report on activities such as Universal Home Insulation Scheme	N/A	Head of Corporate Infrastructure	Annually
2.3	Work with partner organisations to deliver energy efficiency measures and report on outcomes	N/A	Head of Corporate Infrastructure	Annually
Objective 3 - Contribute to the aspirations of the "Zero Waste Plan"				
3.1	Meet EC Landfill Directive 1999/31/EC with regard to Biodegradable Municipal Waste (BMW) allowed to landfill (from 1995 baseline) • 50% of 1995 levels by 2013; • 35% of 1995 levels by 2020.	Community Plan Workstream 7.1 action a.	Commercial Waste and Recycling Manager	As prescribed
3.2	Meet recycling/composting targets as set by Scottish Government • 50% Recycling/Composting of MSW by 2013 • 60% Recycling/Composting of MSW by 2020 • 75% Recycling/Composting of MSW by 2025 MSW – Municipal Solid Waste	N/A	Commercial Waste and Recycling Manager	As prescribed
3.3	Report progress against above targets	N/A	Commercial Waste and Recycling Manager	Annually
Objective 4 - Reduce the energy requirements of our street lighting				
4.1	Install "white light" technology in new street lighting projects	N/A	Street Lighting Manager	Ongoing as of April 2010
4.2	Introduce dimming where feasible	N/A	Street Lighting Manager	Ongoing as of April 2010

Action ID	Action	Linked to	Responsible	Date
4.3	Install LED lighting	N/A	Street Lighting Manager	Ongoing as of April 2011
4.4	Report on projects – costs savings and CO2 savings	N/A	Street Lighting Manager	Reported annually in line with Carbon Management Programme
Objective 5 - Reduce emissions from transport fleet				
5.1	Reduce fuel consumption across the Council's fleet by • Specification • Procurement • Maintenance • Driver training	N/A	Transport Manager	Ongoing
5.2	Report on overall fuel consumption and CO2 emissions	N/A	Transport Manager	Annually - May
Objective 6 - Raise energy awareness				
6.1	Develop and deliver energy awareness campaign	N/A	Head of Corporate Infrastructure	3 year campaign 2012-2015 Launch February 2012
6.2	Maintain the momentum of campaign Create programme of workshops and awareness initiatives	N/A	Head of Corporate Infrastructure	Ongoing over 2012-2015
6.3	Create energy awareness pack to be included in staff induction	N/A	Head of Corporate Infrastructure	Ongoing over 2012-2015
6.4	Premises Managers are appointed as energy representative for each building	N/A	Head of Corporate Infrastructure	February / March 2012
6.5	Formalise ECO School support pack	N/A	Head of Corporate Infrastructure	Ongoing over 2012-2015
Objective 7 - Ensure that we procure services that are energy efficient				
7.1	Whole life costs of energy consuming products should form part of procurement process	N/A	Head of Corporate Infrastructure	On appointment of Senior Energy Officer

Action ID	Action	Linked to	Responsible	Date
7.2	Acquire products that are energy efficient	N/A	Head of Corporate Infrastructure	On appointment of Senior Energy Officer
7.3	Tenders to reward sustainable bidders	N/A	Head of Corporate Infrastructure	On appointment of Senior Energy Officer
Objective 8 - Monitor, report and review energy consumption				
8.1	Install automated meter readers to provide accurate energy consumption	N/A	Head of Corporate Infrastructure	2012
8.2	Report energy consumption at top 25 consuming sites and top 25 energy intensive sites (SRRB2)	Community Plan Workstream 7.1 action a.	Head of Corporate Infrastructure	March 2012 then quarterly thereafter
8.3	Create CRC baseline as at 1/4/2011	N/A	Head of Corporate Infrastructure	July 2011, report annually thereafter
8.4	Benchmark East Ayrshire Council energy use internally and externally with established partners	N/A	Head of Corporate Infrastructure	On-going
8.5	Set up cross Council Carbon Reduction team	N/A	Head of Corporate Infrastructure	December 2011
Finance				
9.1	Review funding options for energy efficiency	N/A	Head of Corporate Infrastructure	On-going
9.2	Report on all funding successfully sourced	N/A	Head of Corporate Infrastructure	On-going

EAST AYRSHIRE COUNCIL ENERGY POLICY



Improvement in energy efficiency: *East Ayrshire Council is committed to* reducing carbon emissions by continuing to improve energy efficiency in the design, maintenance and management of Council owned properties and by providing clear leadership in these matters to the population of East Ayrshire.

Scope and boundaries:

This policy covers all uses of energy in our buildings, processes, and transport operations.

Objectives and targets:

Carbon Emissions will be reduced by at least 20% by 2020 with an annual action plan and performance report being produced

Energy consumption will be reduced year on year with clear annual targets and performance reports being produced

*The proportion of energy generated by renewable sources will be increased****Compliance:***

An improvement action plan designed to achieve these objectives will be managed and championed by the Head of Corporate Infrastructure

Availability of information:

We will ensure the public availability of all the information and resources necessary:

- *to achieve our objectives and targets;*
- *to plan and supervise the necessary projects and programmes;*
- *to maintain an energy management system compliant with EN 16001 and any subsequent standard which supersedes it;*
- *to monitor and publicly report on energy performance; and*
- *subject to justification on reasonable criteria, to fund physical improvement projects.*

East Ayrshire Council undertakes to carry out such awareness raising, training, and maintenance optimisation programmes as may be required in pursuit of improved energy efficiency and reduced losses.

Publication: *this policy is available to the public.*

Review: *this policy is due to be reviewed and updated by 31st March 2012 and annually thereafter.*

Chief Executive	Leader of the Council	Energy Champion
Fiona Lees	Councillor Douglas Reid	To be appointed

Date: 31st March 2011