CLACKMANNANSHIRE COUNCIL

CARBON MANAGEMENT PLAN

CMP 2011 - 2016

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Foreword from Director of Services to Communities

Climate change is one of the most significant issues we face today, and one which will have long-lasting effects for generations to come. When we agreed our first Carbon Management Strategy and Implementation Plan in 2008, we recognised the need to reduce our greenhouse gas emissions and formally committed ourselves to take action.

Working with the Carbon Trust, we identified where we could reduce our energy, fuel and water consumption, avoiding waste, and determining the actions required to reduce our greenhouse gas emissions. I am proud that by doing this we have reduced our greenhouse gas emissions by 6.13% and made significant financial savings.

Now that the time has come to review the Carbon Management Plan, tackling climate change is no longer a choice, but a legal duty. We are fortunate that we can build on our successes, and on the expertise that has grown with the implementation of the original Plan, as well as the foundation laid by our Sustainability and Climate Change Strategy.

Our revised Carbon Management Plan identifies new projects that will ensure the whole Council contributes to its ambitious targets; the actions range from significant changes to our buildings, to small changes to the way we work. It is a big task, but I am confident that we can work together and succeed in reducing our emissions.

Garry Dallas

Director of Services to Communities

Foreword from the Carbon Trust in Scotland

Cutting carbon emissions as part of the fight against climate change should be a key priority for all public bodies - it's all about getting your own house in order and leading by example. The Scottish and UK governments have identified the public sector as key to delivering carbon reduction across Scotland and the UK, in line with Kyoto commitments and the world-leading Scottish and UK Climate Change legislation.

The Carbon Trust's Public Sector Carbon Management programme is designed in response to this. It assists organisations in saving money on energy and putting it to good use in other areas, whilst making a positive contribution to the environment by lowering their carbon emissions.

Clackmannanshire Council was selected to take part in this ambitious programme. Clackmannanshire Council partnered with the Carbon Trust in order to realise substantial carbon and cost savings. This Carbon Management Plan commits the organisation to a target of reducing CO_{2e} by 3% per year and underpins potential financial savings to the organisation of around £1.5 million.

There are those that can and those that do. Public bodies can contribute significantly to reducing CO_{2e} emissions. The Carbon Trust is proud to support Clackmannanshire Council in the on-going implementation of its carbon management.

Paul Wedgwood

Manager, Carbon Trust in Scotland

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EXECUTIVE SUMMARY

This Carbon Management Plan (CMP) for Clackmannanshire Council sets out a five-year plan for the reduction of carbon emissions with the Council's own activities. It has been produced in conjunction with the Carbon Trust in Scotland using the support of accredited consultants.

This CMP will be included in future service plans, Single Outcome Agreements and in Clackmannanshire's Corporate Plan. Overall responsibility for delivery of the CMP will lie with Peter Morrison. He will be supported on a day-to-day basis by Clackmannanshire's Carbon Management Delivery Team, which includes representatives from across all departments. Progress towards the CMP's aims and objectives will be reviewed bi-annually by the Scrutiny Committee, via Stephen Crawford (Head of Service, Facilities Management), and more regularly by the Carbon Management Delivery Team.

Structure of the Plan

The Carbon Management Plan is split into three separate sections:

- **Background and Context:** This section sets out the aims and objectives of the CMP, the drivers behind the CMP, Clackmannanshire's governance structure in relation to carbon management, the original baseline carbon footprint for Clackmannanshire and reduction targets.
- **Progress Review:** This section provides an ongoing review of actual progress towards target carbon emissions.
- **Implementation Plan**: This section provides a list of planned carbon reduction projects, with details of project ownership, estimated reductions and progress. It also provides an overview of how well carbon management is embedded in management structures and our actions to improve this.

Overall Target

Clackmannanshire's overall target for carbon reduction is a **3% year on year annual reduction** (based on a baseline year of 2006/7). This equates to a reduction of around **12,000 tonnes CO_{2e},** and a cost saving of around **£9.5 million**, over the next 5 years. This target is achievable if *all* of the projects identified in the CMP (including those for which funding has not yet been allocated) are carried out.

We consider that this will enable the Council to make a significant contribution to government targets for the reduction of greenhouse gas emissions and to become fully compliant with one of the commitments outlined in Scotland's Climate Change Declaration.

1. BACKGROUND AND CONTEXT

1.1 Our Low Carbon Vision

The vision for this Carbon Management Plan is to:

> **"***establish Clackmannanshire Council as a national leader in reducing the greenhouse gas emissions from its own operations, contributing to a low carbon economy, improved quality of life and an environment that is protected and enhanced for future generations.***"**

This complements the wider aim to develop a 'whole council' approach, where not only council employees, but also all those who live and work within the Clackmannanshire area participate in and continue to experience the benefits of, a more sustainable society.

1.2 Context And Drivers

Carbon management is about reducing our contribution to climate change. In 2007, the Council co-signed Scotland's Climate Change Declaration with the Scottish Government and this sets an initial framework of action for reducing our contribution to climate change. Annual reports are produced setting out our progress towards meeting the Declaration commitments and reducing our greenhouse gas emissions.

Although carbon dioxide is the biggest single contributor to climate change, there is an urgent need to reduce emissions of all the greenhouse gases. National action to achieve this has led to the setting of specific milestone reduction targets, namely:

- At least a 42% reduction in Scotland's greenhouse gas emissions by 2020 (against 1990 levels); and
- At least a 80% reduction in Scotland's greenhouse gas emissions by 2050 (against 1990 levels)

These targets are contained within the Climate Change (Scotland) Act 2009; the 2050 target is aligned with the UK Government's target for reduction in overall UK emissions while the 2020 milestone target is more ambitious than that set for UK emissions (34%).

The Climate Change (Scotland) Act 2009 places new statutory duties on the Council to contribute to the delivery of national greenhouse gas emissions reduction targets, through reducing our greenhouse gas emissions both within the Council and in the wider community, and to report on the actions taken to comply with these duties. The Scottish Government produced a Climate Change Delivery Plan in June 2009 to guide the national effort to meet the climate change targets and this will influence the Council's policy priorities in this area.

In tackling the impacts of climate change the Council recognises that the quality of life it can provide for its residents is dependent upon a mixture of economic, environmental and social factors rather than economics alone. Indeed, under the terms of the Local Government in Scotland Act 2003 the Council is required to discharge its duties in a manner that contributes to the achievement of sustainable development. The Council's Sustainability and Climate Change Strategy, adopted in 2010, provides the basis for fulfilment of this requirement.

The Strategy defines four critical priorities in making Clackmannanshire sustainable, namely:

- Reducing our contribution to climate change and preparing to adapt to its consequences;
- Creating sustainable communities;

- Living within environmental limits; and
- Protecting our natural resources and enhancing our environment.

These priorities are delivered via a range of themed actions, relating both to the operation of the Council and to Clackmannanshire as a whole.

In the specific case of the Council's own operations and activities, the Council adopted a Carbon Management Strategy and Implementation Plan (CMP) in 2008. The CMP set out details of the carbon emissions arising from Council activities along with a reduction target to be achieved via a number of specific projects detailed in the plan.

With the assistance of the Carbon Trust in Scotland, the Council has undertaken a review of progress to date against the targets set out in the original CMP of 2008. This has included a review of ongoing efforts to reduce carbon emissions across Council activities, development of a revised target, and development of an overall revised CMP. In formulating the revised target the Council has looked ahead to 2020 and considered in what areas it can most effectively contribute to fulfilling its public duties as outlined in the Climate Change (Scotland) Act.

The CMP is supported by a number of actions outlined in the Sustainability and Climate Change Strategy, specifically:

- Investigate and report on the scope for the introduction of a carbon accountancy framework;
- Develop a Renewable Energy Strategy which will set actions and targets for increasing the proportion of the Council's energy needs that will be met from renewable sources;
- Continue to investigate the potential to expand on existing renewables use in the schools estate and on council-owned land;
- Prepare a water management strategy for the Council;
- Establish a recording system for fleet fuel costs and establish targets for reduction.

1.3 Aims and Objectives

The ultimate aim of this revised CMP is to make a significant contribution to the overall drive towards greater sustainability within the Council as outlined in the Sustainability and Climate Change Strategy. In doing so there are a number of further objectives:

- To integrate carbon management practices into all the Council's activities;
- To deliver long-term cost savings from carbon emissions reductions;
- To develop links drawing together all outputs from participating groups annually, whereby analysis of results are published and made available to all employees and the community with successes or failures analysed to provide information for all future actions of the programme;
- To inform the community of Clackmannanshire, including all business and community groups or partnerships, of Clackmannanshire's Carbon Management programme and the opportunities arising from and the benefits both in environmental and financial terms;
- To deliver information on the progress of the programme through the local press and the internet.

1.4 Carbon Management Governance and Reporting

Clackmannanshire Council is aware that effective communication with all relevant stakeholders

is key to ensuring the success of the CMP. This is particularly important when considering measures such as awareness programmes and other drives to reduce energy use by employees. To this end, a list of all stakeholders within the Council has been identified and is displayed in Table 1, along with a summary of their roles within the programme and how initiatives will be communicated to them.

Table 1: Stakeholder Group Mapping

Stakeholder Group	Role within Programme	Method of Communication
Council Elected Members	• Maintain awareness of programme and its importance • Integrate vision of carbon emission reduction into all activities	• Briefings to Council members from project leader Peter Morrison
Chief Executive & Directors	• Maintain awareness of programme and its importance • Advertise any savings made through measures associated with the programme • Provide oversight of the programme and its development	• Regular feedback briefings from Action Managers with known savings communicated clearly • Council wide awareness campaign
Department Managers	• Maintain awareness of programme and its importance • Leadership of programme • Provide initiative for further changes	• Project leaders to assign targets to departments • Gather data and compare performance of departments • Provide feedback (simple posters / assessment against KPIs) on a regular basis
All Council Staff	• Develop everyday behaviour that minimises energy consumption and associated carbon emissions • Assess their roles within the Council and provide insight into how they could improve carbon efficiency	• Council wide awareness campaign • Implement energy champions in various departments
Schools	• Raise awareness of pupils with input that will influence at-home behaviour • Operate with highest possible energy efficiency	• Presentations to pupils from the Council Energy Officer • Energy Officer to ensure facilities staff are trained to ensure that plant is operating correctly
Residents	• Change behaviour	• Energy efficiency presentations & displays in Council buildings • Housing team to distribute literature on energy efficiency in the home

The key individuals involved in the delivery of the CMP are outlined in Table 2.

Table 2: Carbon Management Delivery Team

Role in Carbon Management Programme	Name	Position
Overall Responsibility	Angela Leitch	Chief Executive
Programme Manager	Peter Morrison	FM Service Manager
Council Buildings	Richard Scobie	Energy Officer
Fleet Transport	Graeme Cunningham	Environment Manager
Employee Business Travel	Richard Scobie	Energy Officer
Waste	Graeme Cunningham	Environment Manager
Street lighting	Charlie Norman	Team Leader - Roads
Housing	Lawrence Hunter	Housing Officer
Procurement	Derek Barr	
Sustainability	Rebecca Bell	Sustainability Officer

There may be a need to bring in additional departmental representatives to the Carbon Management Delivery Team, depending upon the nature of future reduction projects. This may include representatives from IT, finance, corporate services and the sustainability team.

1.5 Monitoring and Reporting

In order to gauge the success of the CMP it is essential that the Council's performance is monitored effectively. The Council will continue to gather relevant data on an annual basis in order to monitor how carbon emissions are progressing.

By using the same standard of monitoring as is present in the baseline calculation it will become evident over time not only how successful the practical and quantifiable projects are, but also the level of effectiveness of other less quantifiable measures, such as the energy awareness campaign and the Travel Plan.

It will be the responsibility of the Area Manager to ensure that the relevant emissions data for each area is gathered on an annual basis.

The outcomes of evaluation of the gathered data will feed into the ongoing evolution of the CMP to incorporate new measures and thus help meet the 3% year on year reduction target over the next five years.

1.6 Emissions Baseline and Projections

This section provides details of the Council's carbon emissions baseline and projections through to 2015/16. There are two scenarios used in the projections:

- **Business as Usual (BAU).** This scenario assumes no additional actions are taken to reduce carbon emissions and shows the amount of carbon emitted by the Council through to 2015/16;
- **Reduced Emissions Scenario (RES).** This scenario assumes that all actions outlined in this CMP are carried out to reduce carbon emissions.

1.7 Scope

The scope of the baseline study was cast as wide as possible in order to give a comprehensive

representation of the overall carbon emissions from Council operations. All the categories are listed below and are taken into account in baseline calculations.

- Council Buildings – Derived from billed data from the Council's comprehensive records for electricity and heating fuels. Consistently and accurately recorded by the Council's energy officer.
- Fleet Transport – Derived from collated data from Council records for mileage and fuel consumption.
- Employee business travel – Derived from collated data from Council records of miles travelled by staff on business.
- Street lighting – Derived from billed data of energy consumed by all street lights bollards and signs.
- Waste to Landfill – Derived from Council recorded mass of waste arisings sent to landfill as recorded for SEPA quarterly data returns.
- Council Housing – Derived from data amassed from the Housing Energy Conservation Act (HECA) report from 2005. The HECA reports are based on SAP methodology and so can be considered a good indicator of emissions from housing given that only generic information regarding building size, etc is available.

Staff commuting is specifically excluded from the scope of reported emissions due to inherent limitations in data acquisition and analysis. However, ongoing initiatives to encourage all staff to travel sustainably will continue to be undertaken.

1.8 Baseline Footprint

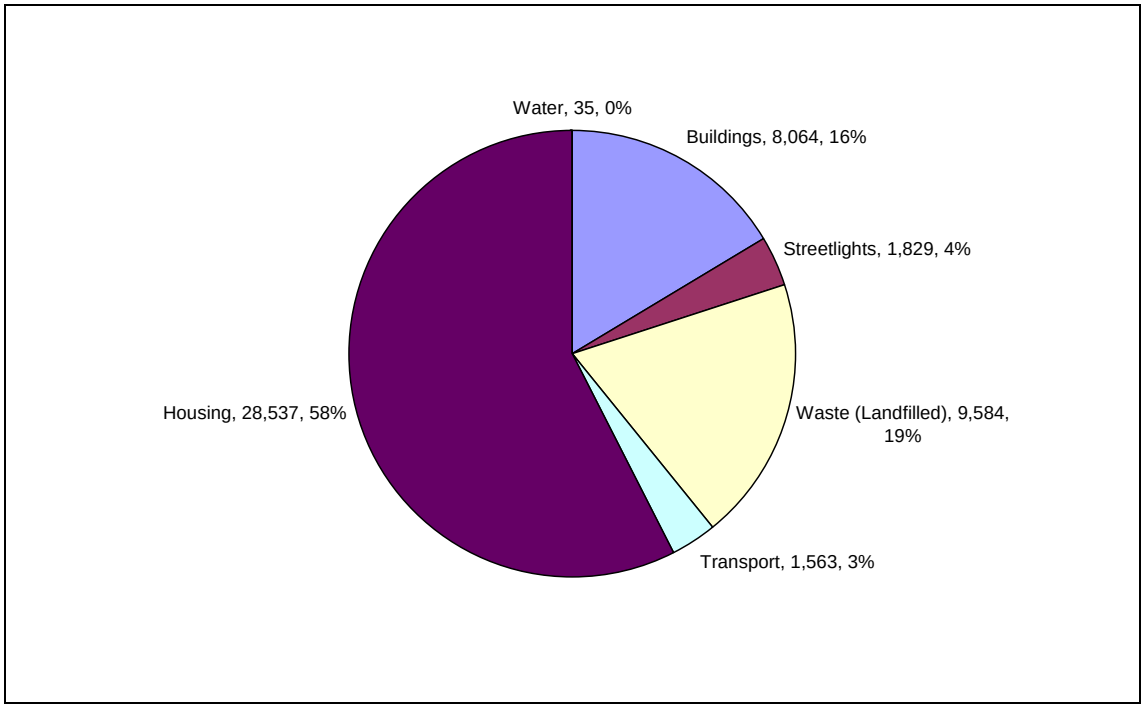
The baseline year is 2006/07. Total carbon emissions amount to 49,613 tCO_{2e}.

A breakdown of these emissions by category is provided here.

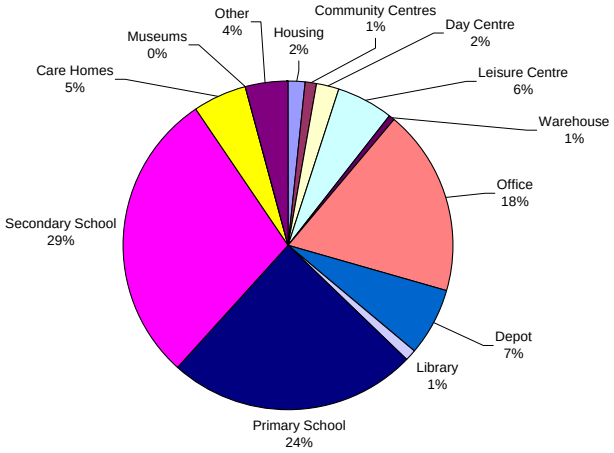
Table 3: Carbon Baseline 2006/07 by Emission Category

Category	Total Carbon Emissions (tCO_{2e})
Buildings *of which:*	**8,064**
Electricity	*4,354*
Fossil Fuel	*3,710*
Transport *of which:*	**1,563**
Fleet Fuel	*1,240*
Employee Business Travel	*323*
Municipal Waste – Landfilled	**9,584**
Street lighting	**1,829**
Council Housing *of which:*	**28,537**
Electricity	*10,757*
Fossil Fuel	*17,780*
Water	**35**
TOTAL	**49,613**

Figure 1: Breakdown of Clackmannanshire Council's Carbon Emissions 2006/7 (baseline year)



Note: all figures in tonnes CO_{2e}

Category	Commentary
Housing	Emissions from Council Housing account for 58% of the baseline total. As stated above, these emissions are estimated based on HECA data, since precise billing details for each dwelling are not available to the Council. Provision of such housing is seen as an important aspect of Council activity, involving significant programmes of work and associated capital investment in maintaining the general standard of the building stock.
Waste (Landfilled)	As part of mandatory annual reporting to SEPA figures are collated for the amount of waste being recycled and the waste being sent to landfill. For the purposes of reporting here the waste to landfill tonnage is used as the baseline figure from which carbon emissions are calculated (based on an assumed biodegradable waste fraction). These emissions make up 19% of the carbon baseline total.
Buildings	Emissions from across the Council's buildings portfolio accounts for 16% of the total baseline. Schools make up over 50% of the total buildings emissions, split almost equally between Primary and Secondary Schools. A further 18% of emissions arise from Council office buildings. **Figure 2: Baseline emissions from Buildings by Building Type** 
Streetlighting	Emissions from street lighting account for 4% of total emissions.
Transport	Transport emissions account for 3% of total emissions, the majority of which relates to fuel consumption in fleet vehicles.
Water	Emissions attributable to water consumption account for less than 1% of total baseline emissions. While in carbon terms this is a small fraction, the Council is committed to minimising water consumption across its operations in line with wider sustainability targets.

1.9 Projected Emissions and Value at Stake

Projected CO_{2e} emissions for the Business as Usual (BAU) scenario have been calculated. The BAU scenario assumes that the Council does nothing to reduce the increasing trends in energy use within the Council and incorporates only existing measures already underway i.e. no additional actions are carried out. Conversely the Reduced Emissions Scenario (RES) assumes that all actions identified in this CMP are carried out. The Value at Stake (VAS) is the difference between the two scenarios.

Carbon emissions are predicted in the BAU scenario to rise from 46,810 tCO_{2e} in 2010/11 to 47,224 tCO_{2e} in 2015/16. In the RES case, a 3% year-on-year reduction target is achieved (relative to the baseline year of 2006/07). Over the same period this would reduce the carbon emissions to around 37,700 tCO_{2e}. The accumulated carbon savings of the CMP are shown in Table 4. Through delivery of the reduction target the Council will save an aggregate total of almost 35,000 tCO_{2e} through to the end of 2015/16.

Table 4: Projected Carbon Value at Stake

	UOM	***2010/11***	***2011/12***	***2012/13***	***2013/14***	***2014/15***	***2015/16***
BAU Emissions	tCO_{2e}	46,810	46,892	46,974	47,057	47,140	47,224
Reduced Emissions Scenario	tCO_{2e}	46,810	42,604	41,326	40,086	38,884	37,717
Value at Stake	tCO_{2e}	0	4,288	5,648	6,971	8,257	9,507
Cumulative Value at Stake	tCO_{2e}	0	4,288	9,936	16,906	25,163	34,670

Notes for Table 4

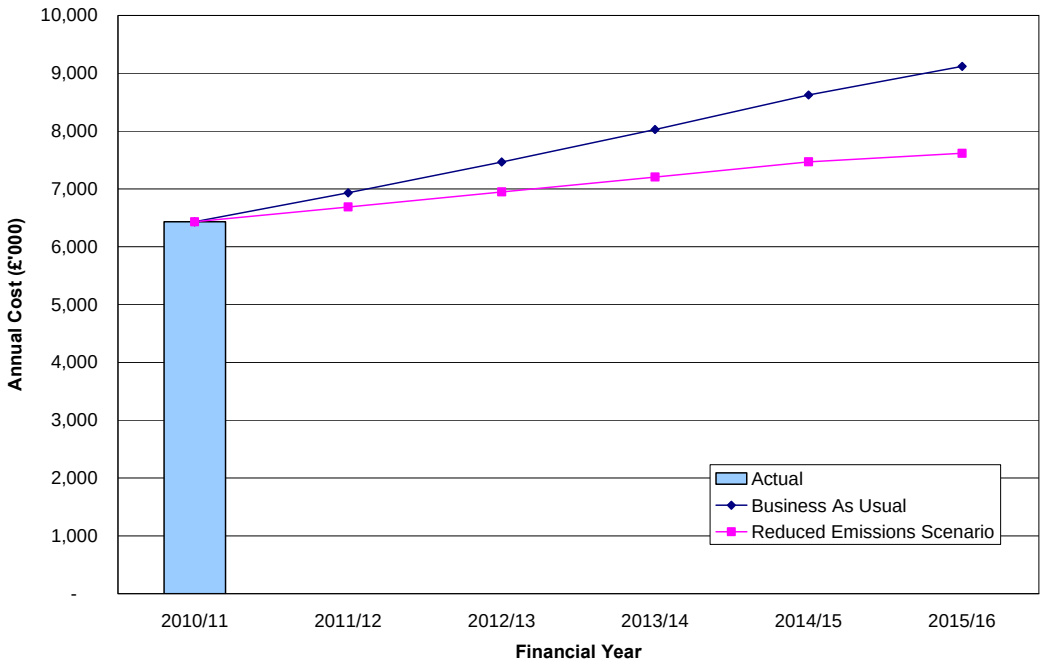
1. In the BAU Scenario an annual growth in emissions of 0.7% per annum is assumed in the case of buildings, transport, water and street lighting emissions. This is in line with DECC (Department of Energy and Climate Change) projections
2. In the BAU Scenario a net zero change in Housing and Waste emissions is assumed. In the case of Housing the net impact of ongoing investment on behalf of the Council and national requirements for energy performance standards across the housing stock are assumed to limit further growth in emissions. In the case of waste national targets for reduction in the amount of waste being sent to landfill mean that ongoing service initiatives will prevent any rise in landfilled waste tonnages (and therefore associated emissions)
3. 2010/11 emissions are aligned with reported 2009/10 figures

In addition to the carbon savings, there are also associated financial savings. These financial savings (shown by the gap between the BAU and RES scenarios) are made up of a number of sources, specifically:

- Energy Consumption – Reduced utility costs (including reduced exposure to price inflation) and reduced climate change levy
- Transport – Reduced fuel costs (including reduced exposure to price inflation)
- Waste – Reduced costs of landfill (landfill tax and gate fees)

Figure 3 shows the two scenarios – the BAU and the RES – in terms of the financial costs to the Council and is discussed in more detail in Section 3. As in the case of the carbon value at stake calculations above, it is assumed in the RES that a 3% year-on-year reduction target is achieved (relative to the baseline year of 2006/07).

Figure 3: Projected Financial Value at Stake



2. PROGRESS REVIEW

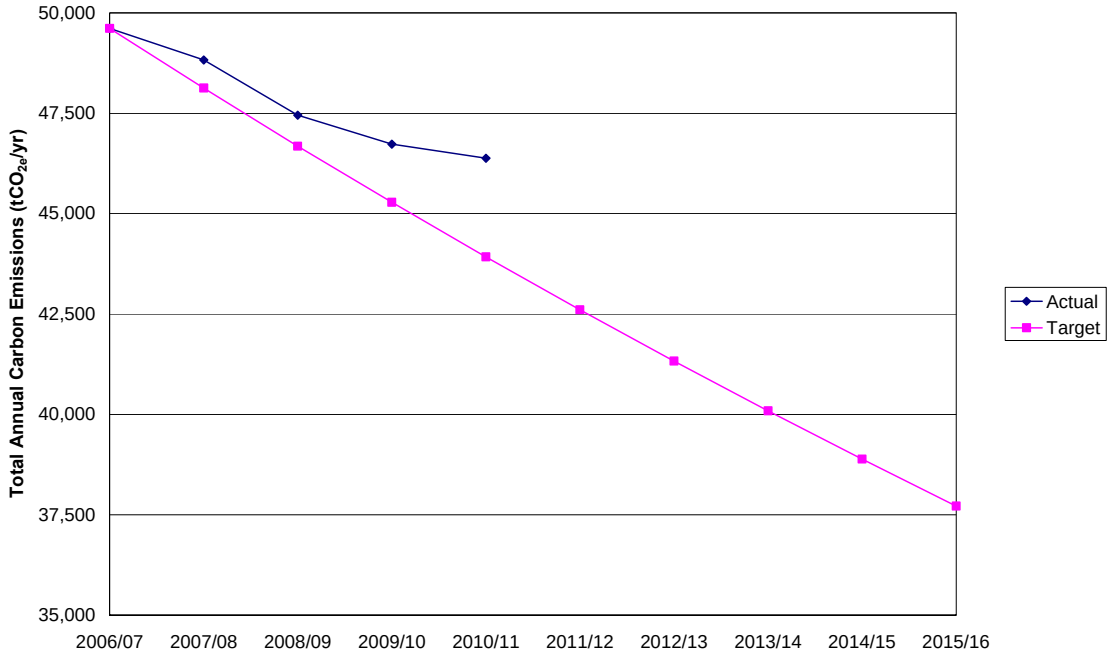
This progress report includes information on actual CO_{2e} emissions for Clackmannanshire Council through to end March 2011.

Table 5: Clackmannanshire Council Reported Carbon Emissions

Category	*Financial Year*										
	2006/07	*2007/08*	*2008/09*	*2009/10*	*2010/11*	*2011/12*	*2012/13*	*2013/14*	*2014/15*	*2015/16*	
Housing	28,537	27,992	27,771	27,571	26,968						
Building Energy Consumption	8,064	8,075	7,802	7,720	8,799						
Waste (Landfill)	9,584	9,192	8,261	7,575	7,106						
Street lighting	1,829	1,832	1,898	1,895	1,921						
Transport	1,563	1,698	1,687	1,942	1,551						
Water	35	35	34	26	33						
TOTAL	49,613	48,824	47,453	46,729	46,377						
Target Emissions	49,613	48,124	46,681	45,280	43,922	42,604	41,326	40,086	38,884	37,717	
Variance	**0**	**699**	**772**	**1,449**	**2,455**						
% Change from baseline		-1.6%	-4.4%	-5.8%	-6.5%						
% Annual Change		-1.6%	-2.8%	-1.5%	-0.8%						
% Annual Change (by category)											
Housing		-1.9%	-0.8%	-0.7%	-2.2%						
Building Energy Consumption		0.1%	-3.4%	-1.0%	14.0%						
Waste (Landfill)		-4.1%	-10.1%	-8.3%	-6.2%						
Street lighting		0.2%	3.6%	-0.2%	1.4%						
Transport		8.6%	-0.7%	15.1%	-20.2%						
Water		-0.7%	-1.3%	-23.9%	26.5%						

Note: All units in tonnes CO_{2e}

Figure 4: Clackmannanshire Council Carbon Emissions



Commentary

Housing – In 2009/10 Clackmannanshire Council invested £4.3 million in improving the condition of Council houses to ensure that we comply with the Scottish Housing Quality Standard by 2015. These improvements will help minimise greenhouse gas emissions by improving central heating systems and insulating the properties. The majority of this work was financed via Council capital programme funds, with limited additional funding from the Community Energy Saving Programme (CESP) and the Home Insulation Scheme (HIS).

Building Energy – A programme of smart meter installation across the buildings portfolio has been rolled out during 2010/11 to assist in improved monitoring of both electricity and gas consumption. Further programmes of work across the schools portfolio, as well as ongoing improvements to the Council's own corporate offices and a number of major refurbishment projects are in place and will directly address building energy emissions reduction over the next reporting period. In addition, the Council's Property Asset Management Plan, approved in September 2010, will assess all individual properties within the Plan against a number of sustainability criteria (including measures relating to energy use). The targets within the Plan include a reduction of 15% both in the floor area occupied by Council activities and the carbon emissions per unit floor area of those activities.

Waste – Clackmannanshire's present recycling rate of 46% is ahead of the national target rate of 40% by 2010. Ongoing work to reduce the amount of waste going to landfill includes extension of recycling capacity (e.g. bulky plastic) and enhanced sorting facilities at the Forthbank Recycling Centre. There has also been work undertaken to rationalisation of vehicle routes for waste collection, in order to minimise fuel use, and ongoing feasibility work considering the installation of a flare for methane gas at the redundant Blackdevon Landfill site. A number of campaigns and activities have been undertaken to complement these actions by maintaining public awareness of waste recycling efforts. This includes zero waste public roadshows in Alloa and the publication of a Waste Prevention Guide for households.

Street lighting – The Council continues to replace older 70W SOX lamps with a standard fitting 45W white light, providing dual benefits in terms of reduced energy consumption and improved

performance. Overall consumption, however, is liable to rise as the Council adopts lighting from developers which was installed to previous standards. The initial cost of supplying new lamps is around four times that of the old lamps, which means that only gradual change is possible within existing budget constraints.

Transport – In terms of fleet vehicles fuel usage sheets are issued monthly to assist services in monitoring their fuel consumption. Ongoing training programmes in 2010 focussed on fuel efficient driving and eco-driving skills. The vehicle replacement policy now reviews the need for any existing vehicle with a view to reducing the fleet size where at all practicable. In general, vehicles are utilised across services where at all possible.

Water – Ongoing review of water consumption across the Council buildings portfolio looks to minimise demand where at all possible. The installation of items such as percussion taps has assisted in identifying savings at a number of sites.

Date of next progress report: June 2012

3. IMPLEMENTATION PLAN

3.1 Governance

As stated in the Context and Background section, the Council recognises that embedding carbon management good practice across the organisation is a pre-requisite for delivery of the target emissions savings outlined in this CMP.

In measuring the extent to which carbon management practices are embedded within an organisation's management structure and operation, the Carbon Trust have produced a series of matrices known collectively as the Carbon Management Assessment Tool (CMAT). Collectively, while not intended to be a precise quantitative tool, these matrices provide a qualitative means of assessing how effectively governance, strategy and policy procedures support ongoing delivery of objectives within an organisation's CMP. As a general rule of thumb, high CMAT scores correlate directly with the achievement of higher volumes of carbon savings.

The CMAT matrices were used to generate a self-assessment by the Council of its general Carbon Management performance. The scores for each category and the overall performance score are summarised in Table 6.

Table 6: CMAT Score Assessment

	CMAT 1	CMAT 2	CMAT 3	CMAT 4	CMAT 5	CMAT 6	TOTAL	Performance Score
Clackmannanshire Council	10	8	9	10	12	11	60	50.0
Previous Assessment Scores	NA	NA	NA	NA	NA	NA	NA	NA
Maximum Potential Score	20	20	20	20	20	20	120	100.0

The Council recognises the value of the CMAT in demonstrating areas of strength/weakness in carbon management governance. This in turn provides a direct means of identifying enabling actions in improving overall performance.

The Council therefore intends to carry out a re-assessment of the CMAT scores on an annual basis with a view to generating a cycle of continuous improvement in how carbon management is achieved throughout the organisation.

The full details of the latest assessment are provided in Table 7 - Table 12. These details will be updated as and when revised assessments are carried out.

Table 7: Assessment Matrix (CMAT 1) – Vision and Strategic Direction Assessor: P Morrison Date 01/07/10

	Reduction Targets	Management Plans	Carbon reduction contributions	Near term planning	Communications Strategy
TOTAL =10	Score = 1	Score = 2	Score = 2	Score = 2	Score = 3
LEVEL ↓ **4**	Organisation has a clear view of it's desired long term (2050) and interim (2020 & 2030) carbon footprint, and how it will deliver its share of national reduction targets through strategic decision making	Organisation has a long term management plans that quantify and schedule carbon reduction implications / opportunities arising from 100% of its carbon footprint [1] linking to carbon management plan and long term targets	Organisation understands the relative contribution of energy efficiency and on-site renewables and has calculated the potential carbon reduction from each to help meet interim and long term carbon reduction targets and has factored in implications of decarbonised energy supplies[2]	Organisation has quantified and funded (with sign off by finance manager and corporate management team) 1 & 2 year plans within the overall short term plan (5 yrs) which contains sufficient projects to deliver 125% of the stated reduction target	Organisation has a robust carbon reduction communication's strategy, for all parts of the organisation and the wider area, which has components to enable the effectiveness of awareness raising measures and communications to be quantified
3	Organisation has a clear view of its desired interim (2020 & 2030) carbon footprint, and how it will deliver its share of national reduction targets through strategic decision making	Organisation has a long term management plans that quantify and schedule carbon reduction implications / opportunities arising from 75% of its carbon footprint [1]	Organisation understands the relative contribution of energy efficiency & on-site renewables and has calculated the carbon reduction gains potential from each to meet interim and long term carbon reduction targets	Organisation has quantified and funded 1 & 2 year plans within the overall short term plan (4 -5 years) which has sufficient projects to deliver 100% of the stated reduction target	Organisation has a robust carbon reduction communication's strategy, for all parts of the organisation which has components to enable the effectiveness of awareness raising measures and communications to be quantified
2	Organisation has a clear view of it's desired carbon footprint, over the next 10 years and how it will deliver its share of national reduction targets through strategic decision making	Organisation has a long term asset management plan that quantifies and schedules carbon reduction implications / opportunities arising from renewal and refurbishment of buildings.	Organisation understands the relative contribution of energy efficiency & on-site renewables but has not calculated the carbon reduction potential from each to meet interim and long term carbon reduction targets	Organisation has quantified and funded short term plan (4 -5 years) that has sufficient projects to deliver over 75% of the stated reduction target	Organisation has a robust carbon reduction communication's strategy but no formal measure of effectiveness is undertaken
1	Organisation has 5 year carbon reduction target but has not considered how it will deliver its share of national reduction targets.	Organisation has a long term building asset management plan without quantified carbon reduction implications / opportunities.	Organisation has plans to assess the relative contribution of energy efficiency and on-site renewables and calculate the carbon reduction potential from each	Organisation has short term plan (4 -5 years) that has sufficient projects to deliver over 75% of the stated reduction target but lacks detail & not quantified.	Organisation communicates carbon reduction issues to employees but this is done on an ad hoc basis.
0	Organisation has no carbon reduction target	Organisation has no long term asset (building) management plan	Organisation has **not** considered the relative contribution of energy efficiency & on-site renewables	Organisations short term plan has insufficient projects to meet 50% of started target.	Organisation has no an ad hoc system for communication of carbon reduction issues

1 – Energy use, transport, waste and water management // **2** – Decarbonisation of electricity, gas and road fuel over time as technology develops.

Table 8: Assessment Matrix (CMAT 2) – Performance Management and Improvement **Assessor** **P Morrison** **Date** **01/07/10**

	Emission data collection	Emissions reporting	Operational management	Performance Reporting	Improvement
TOTAL = 8	Score =2	Score =1	Score =1	Score =2	Score =2
LEVEL ↓ **4**	Organisation has externally verifiable data collection regime that allows 'best practice' collation[1] of 100% (including scope 3, embedded and outsourced) of organisations carbon emissions on a monthly basis	Organisation issues detailed individual monitoring reports covering 100% (energy, waste and transport) of carbon footprint to all Departments and Lead Carbon Sources[2] on a monthly basis.	Service Directors and Operational Managers have designated carbon reduction targets relating to their operational area as one of their key performance indicators with documented evidence of ongoing actions being taken to ensure short term carbon reduction targets are met.	Carbon Management performance report with detailed emission data and project updates reported to: Full Council Annually Staff/Stakeholders Half Yearly SMT[3] Quarterly	Carbon Manager or equivalent reviews carbon performance against CO_2reduction targets and following consultation with specialist agencies develops a carbon management improvement programme of actions supported and signed off by Corporate Management Team
3	Organisation has externally verifiable data collection regime that allows routine 'best practice' collation [1] of 100% of organisation's carbon emissions quarterly.	Organisation issues detailed individual monitoring reports on energy use in buildings to all Departments and Lead Carbon Sources on a monthly basis.	Service Directors and Operational Managers have designated carbon reduction targets relating to their operational area as one of their key performance indicators	Carbon Management performance report with detailed emission data and project updates reported to: Staff/Stakeholders Annually SMT [3] Half Yearly	Carbon Manager or equivalent reviews carbon performance against CO_2reduction targets develops a carbon management improvement programme of actions supported and signed off by Corporate Management Team
2	Organisation has data collection regime that allows quarterly collation of 75% of organisation's in scope carbon emissions on a monthly basis	Organisation issues detailed individual monitoring reports on energy use in buildings to all Departments on a bi - monthly basis.	Service Directors have designated energy reduction targets relating to their operational area.	Carbon Management performance report and project updates reported at least annually to senior management, staff and stakeholders.	Carbon Manager or equivalent reviews carbon performance against CO_2reduction targets develops a carbon management improvement programme of actions
1	Organisation has data collection regime that allows quarterly collation of 75% of organisation's in scope carbon emissions	Organisation issues detailed individual monitoring reports on energy use in buildings to all Departments on a quarterly basis.	Organisation has a documented energy reduction target	Carbon Management performance report with emission data and project updates reported to on an ad hoc basis	Carbon Manager or equivalent reviews carbon performance against CO_2reduction targets takes actions to improve performance on an ad hoc basis
0	Emission data produced and available on an ad hoc basis	Detailed monitoring report issued annually.	Organisation has no documented energy reduction target	Carbon Management Reports produced on an ad hoc basis	No review of performance against targets take place

1 – http://www.defra.gov.uk/environment/business/reporting/conversion-factors.htm * 2 - Including Fleet, Lighting and Waste Managers. * 3 Senior Management Teams

Table 9: Assessment Matrix (CMAT 3) – Governance and Accountability Assessor P Morrison Date 01/07/10

	Political Commitment	Chief Executive Accountability	Senior Management Accountability	Devolution of responsibility	Scrutiny & Audit
TOTAL =9	Score =1	Score =2	Score =1	Score =3	Score =2
LEVEL ↓ **4**	Elected Members have placed emission reduction at the core of the organisations key objectives and hold officials to account for carbon reductions against stated targets in Council Plan, Departmental Service Plans and specific Key Performance Indicators of managers	Chief Executive accepts overall accountability for carbon reduction targets in the organisation and chairs quarterly meeting to review progress against targets, project updates and future plans	Service Directors accept overall accountability for carbon reduction targets in their department and chairs quarterly meeting on data review, projects update and future plans of their department to show clear commitment / leadership to employees	Carbon budgets are devolved to Departmental Directors, Group Managers and Team Leaders. All have designated emission reduction responsibilities and control over the emissions in their operational area / network	Carbon Management performance reports detailing progress against target formally audited by an external qualified body and reviewed by the organisation's Executive Committee quarterly
3	Elected Members have placed emission reduction at the core of the organisations key objectives and hold officials to account for carbon reductions against stated targets in Council Service Plan and Departmental Service Plans	Chief Executive accepts overall accountability for carbon reduction targets in the organisation and twice annually chairs meeting to review progress against targets, project updates and future plans	Service Directors accepts overall accountability for carbon reduction targets in their department and twice annually chairs meeting on data review, projects update and future plans of their department to show clear commitment / leadership to employees	Carbon budgets are devolved to Departmental Directors and Group Managers who have designated emission reduction responsibilities and control over emissions in their operational area / network	Carbon Management performance reports detailing progress against target formally audited by an external qualified body and reviewed by the organisation's Executive Committee twice a year
2	Elected Members have placed emission reduction at the core of the organisations key objectives and hold officials to account for carbon reductions against stated targets in Council Plan	Chief Executive has overall accountability for carbon reduction targets and has signed climate change declaration	Service Directors accepts overall accountability for energy / carbon reduction targets in their department and data review, and projects update are covered at management tram meetings	Carbon / energy budgets are devolved to Departmental Directors and Group Managers who have designated emission reduction responsibilities but limited opportunities to actually control these emissions.	Carbon Management performance reports detailing progress against target formally scrutinised by the appropriate scrutiny committee/s of the organisation at least annually.
1	Elected Members have placed emission reduction at the core of the organisations key objectives	Chief Executive has formally committed to carbon reduction through signing climate change declaration	Service Directors accepts overall accountability for energy / carbon reduction targets in their department	Plans are in place to estimate individual departments carbon / energy budgets and to devolve these to Service Directors	Carbon Management performance reports detailing progress against target scrutinised on an ad hoc basis.
0	Elected members have not placed emissions at the core of the organisations objectives	Chief Executive has not engaged in any way with carbon management.	Service Directors not accountability for energy / carbon reduction targets	No plans to devolve Carbon budgets	No formal scrutiny or audit takes place

Table 10: Assessment Matrix (CMAT 4) – Embedded within Organisation Assessor P Morrison Date 01/07/10

	Carbon Appraisal	Procurement	Embedded in outcome commitments	Embedded in strategies, policies & procedures	Staff competencies
TOTAL = 10	Score =2	Score =2	Score =3	Score =2	Score =1
LEVEL ↓ **4**	100% of projects that are subject to financial appraisal are subject to carbon appraisal - including whole life costing and consideration of alternative low carbon methods of project delivery	Consideration of both embedded and ongoing operational CO_2 emissions is standard practice during procurement processes for 100% of goods, services and contracts[1] through whole life costing & consideration of alternatives	Carbon reduction targets and actions are contained in the Community Plan, Single Outcome Agreement, the Council Plan, Departmental Service Plans and Group Work Plans show clear vision and strategic direction throughout the organisation.	All new plans, policies, procedures strategies and committee reports are checked for compliance with carbon management plans by qualified specialist to assess any potential impact on both short and long term CO_2reduction targets	CO_2reduction part of competency requirements of 100% of employees job descriptions with specific responsibilities designated to staff appropriate to the carbon intensity of their job function
3	75% of projects that are subject to financial appraisal are subject to carbon appraisal - including whole life costing and consideration of alternative low carbon methods of project delivery	Consideration of both embedded and ongoing operational CO_2 emissions is standard practice during procurement processes for 75% of goods/services through whole life costing & consideration of alternatives	Carbon reduction targets and actions are contained in the Community Plan, Single Outcome Agreement, the Council Plan and Departmental Service Plans	All committee reports are routinely scrutinised for compliance with carbon management strategies & plans by qualified specialist to assess any potential impact on both short and long term CO_2 targets	CO_2reduction part of competency requirements of 75% of employees job descriptions with specific responsibilities designated to staff appropriate to the carbon intensity of their job function
2	Selected capital projects contain an assessment of carbon emissions associated with the project. Plans in place to introduce more robust whole life costing	Whole life costing and / or consideration of low carbon alternatives for selected goods and service that are determined to have high carbon impact / implications	Carbon reduction targets and actions are contained in the Community Plan and the Council Plan.	All committee reports contain an requirement to consider environmental implications of new proposals but reviewers have limited knowledge of carbon / environmental management issues	Formal plans are in place to introduce CO_2reduction as part of competency requirements for selected staff with high carbon intensity job function
1	Carbon assessment only carried out for large building projects with no plans to introduce more robust whole life costing	Procurement strategy contains commitment to consider more sustainable options but no documented evidence of being action actually being taken	Carbon reduction targets and actions are contained in the Council Plan.	Selected committee reports consider environmental implications of new proposals but this is done on an informal and ad hoc basis	Informal plans are in place to introduce CO_2 reduction as part of competency requirements for selected staff with high carbon intensity job function
0	No carbon assessment takes place	No consideration of low carbon options / alternatives	CO_2 reduction objectives **not** contained in the Council Plan.	Committee reports do not cover environmental considerations	CO_2 reduction not determined to be appropriate for competencies

1 – Contractors required to include proposals for minimising carbon emissions during tender stage and to provide a report on total emissions on conclusion of contract.

Table 11: Assessment Matrix (CMAT 5) – Use of Resources Assessor P Morrison Date 01/07/10

	Low Carbon Funding Policy	Designated Responsibility	Energy management capability	Site champions	Employee Training
TOTAL = 12	Score =4	Score =2	Score =4	Score =2	Score =0
LEVEL ↓ **4**	Additional funding is routinely made available and embedded as business as usual policy for low carbon building specifications and carbon reduction projects through linkage of capital costs and longer term running costs	Organisations has a designated carbon manager to monitor, and recommend, CO_2 reduction measures who is supported by a network of departmental & technical champions who have adequate time available to provide support across the organisation	Minimum of one full time Energy Manager / Officer per 2 million pounds spent annually on energy to provide technical support and advice across the organisation.	Site / network champions appointed at all large premises (with half hourly data) or service delivery networks and given sufficient time, training and control to disseminate / embed low carbon policies and practices across their own site and nearby smaller premises / networks.	100% of staff training / induction packages reviewed to consider CO_2 implications & where these are identified (building / fleet managers, janitors etc) training is provided to enable emission reduction projects to be delivered and info' disseminated to others
3	Additional funding is made available for low carbon specifications and carbon reduction projects but only those with 10 yr financial paybacks	Organisations has a designated carbon manager to monitor, and recommend, CO_2 reduction measures who is supported by a network technical champions who have adequate time available to provide support across the organisation	Minimum of one full time Energy Manager / Officer per 4 million pounds spent annually on energy to provide technical support and advice across the organisation.	Site / network champions appointed at all large premises (with half hourly data) or service delivery networks and given sufficient time, training and control to disseminate / embed low carbon policies and practices. across their site or operation.	50% of staff training packages reviewed to consider CO_2 implications & where these are identified (building / fleet managers, janitors etc) training is provided to enable emission reduction projects to be delivered and info' disseminated to others
2	Additional funding is occasionally made available for low carbon specifications and carbon reduction projects but only those with 5 yr financial paybacks	Nominated senior manager in charge of emission reduction across organisation with an identified team to provide support but with limited authority and time.	Minimum of one full time Energy Manager / Officer per 6 million pounds spent annually on energy to provide technical support and advice across the organisation.	Informal group of site / network champions exists for most large premises (with half hourly data) but limited by time & training to disseminate / embed low carbon policies and practices	Selected staff training packages reviewed to considerCO_2 implications and appropriate CO_2 reduction awareness training has been introduced
1	Additional funding is only made available for low carbon specifications where 5 yr paybacks	Nominated officer in charge of emission reduction across organisation with ad hoc support and limited authority and time available	Minimum of one full time Energy Manager / Officer per 8 million pounds spent annually on energy to provide technical support and advice across the organisation.	Plans to establish site / network champions at all large premises (with half hourly data) or service delivery networks to disseminate / embed low carbon policies and practices	Staff Induction contains information of energy reduction measures but no other formal training packages cover energy / fuel reduction.
0	No linkage of capital and review budgets	No nominated officer in charge of carbon management across organisation	Insufficient energy management expertise available to provide technical advice across the organisation.	No plans to establish site / network champions to disseminate / embed low carbon policies and practices	No staff training packages include information or guidance on energy use or carbon reduction

5 – Previously 1 energy manager per million pounds of energy spend prior to significant price increases. // 6- Lead Carbon Sources would include Fleet, Lighting and Waste Managers

Table 12: Assessment Matrix (CMAT 6) – Short term Projects Register Assessor P Morrison Date 01/07/10

	Project cost	Quantified Emissions	Project implementation date	Project Finance	Regular review of project register
TOTAL = 11	Score =2	Score =2	Score =1	Score =3	Score =3
LEVEL ↓					
4	Project register has portfolio of practical projects, 100% of which are fully costed though discussion with suppliers / service providers & financial paybacks calculated using best available projections of changes in utility charges and other costs	100% of projects within the project register have firm estimated emission reduction figure using best specialist data available.	100% of projects within the short term carbon management plan have a firm implementation date that has been established thorough consideration of procurement, staff resourcing and other relevant factors.	100% of required finance has been formally committed and signed off by Finance Manager to allow fulfilment of plan objectives over course of short term (4-5 years) programme.	Short term project register updated every year with review & update approved by Executive Committee and Corporate Management Team. Designated manager / officer identified for each project to ensure accountability
3	Project register has portfolio of practical projects, 75% of which are fully costed though discussion with suppliers / service providers and financial paybacks calculated using best available projections of changes in utility charges and other costs	75% of projects within the project register have firm estimated emission reduction figure using best specialist data available.	75% of projects within the short term carbon management plan have a firm implementation date that has been established thorough consideration of procurement, staff resourcing and other relevant factors.	75% of required finance has been formally committed and signed off by Finance Manager to allow fulfilment of plan objectives over course of short term (4-5 years) programme.	Short term project register updated every year with review & update approved by Executive Committee and Corporate Management Team.
2	Project register has portfolio of practical projects but these have all been costed through informal review of suppliers / service providers.	50% of projects within the project register have firm estimated emission reduction figure using best specialist data available.	50% of projects within the short term carbon management plan have a firm implementation date that has been established thorough consideration of procurement and other factors	50% of required finance has been formally committed to allow fulfilment of plan objectives over course of short term (4-5 years) programme.	Current short term project register available with stated intention to develop update and get sign of from Corporate Management Team
1	Short-term carbon management plan has limited portfolio of practical projects with plans to formally cost them in the future and work out exact payback periods	25% of projects within the project register have firm estimated emission reduction figure using best specialist data available.	25% of projects within the short term carbon management plan have a firm implementation date that has been established thorough consideration of procurement and other factors	25% of required finance has been formally committed to allow fulfilment of plan objectives over course of short term (4-5 years) programme.	Current short term project register available with no firm intention to develop new / updated plan in final year of existing plan
0	Short term plan has portfolio of projects but they have been costed	No emission reduction figures have been calculated using best specialist data available	No projects within the short term carbon management plan have a firm implementation date.	No funding has been formally committed to allow fulfilment of plan objectives.	Current short term project register out of date with no review planned

3.2 Summary Of Major Individual Target Projects

3.2.1 Existing Projects

These projects have been either fully or part-implemented.

Table 13: Clackmannanshire Council Existing Projects

Project				Estimated Annual Savings		Costs (£)		Payback period	Start Date	Completion Date
Reference	Title	Area	Person Responsible	tCO_{2e}	Financial (£)	Capex	Opex	Years		
CLA001	Business travel initiatives	Transport	Service Manager	530	195,000	0		NA	Q1, FY 2010/11	Q4 FY 2011/12
CLA006	Ban Staff bringing in own heating	Buildings	Energy Officer	1	219	0		NA	Q1, FY 2009/10	Ongoing
CLA009	Improvements in IT	Buildings	Service Manager	223	41,600	140,000		3.4	Q1, FY 2009/10	Q3, FY 2011/12
CLA011	Introduce a monitoring and targeting programme throughout the Council's buildings	Buildings	Service Manager	758	138,971	150,000		1.1	Q1, FY 2010/11	Ongoing
CLA012	Carry out an investigation into the further use of small scale renewable energy devices in Clackmannanshire	Buildings	Service Manager	13	2,400	32,000		13.3	Q1, FY 2009/10	Ongoing
CLA013	Carry out widespread building fabric improvements across Council stock	Buildings	Service Manager	503	67,825	251,266		3.7	Q1, FY 2006/07	Ongoing
CLA014	Rationalisation of building stock	Buildings	Service Manager	314	52,082	0		0.0	Q1, FY 2009/10	Ongoing
CLA016	Phased upgrade of street lighting	Streetlighting	Service Manager	32	5,822	44,000		7.6	Q1, FY 2009/10	Ongoing
CLA017	Improvements to lighting and other electrical works across Council building stock	Buildings	Service Manager	274	50,190	136,823		2.7	Q1, FY 2007/08	Ongoing
CLA019	Installation of Gas AMR (various sites)	Buildings	Service Manager	91	12,317	0		0.0	Q1, FY 2010/11	Ongoing
CLA020	Heating controls upgrade (various sites)	Buildings	Service Manager	15	2,076	9,640		4.6	Q1, FY 2010/11	Ongoing
TOTAL				**2,754**	**568,502**	**763,729**				

Note: All capex figures refer to estimated cost of saving measure rather than total capex for given project.

3.2.2 Funded Projects

These projects are planned and funded, but have not yet been implemented.

At this stage, no projects are listed under this category. This is subject to annual review.

Table 14: Clackmannanshire Council Funded Projects

Project				Estimated Annual Savings		Costs (£)		Payback period	Start Date	Completion Date
Reference	Title	Area	Person Responsible	tO_{2e}	Financial (£)	Capex	Opex	Years		
CLA										
TOTAL				0	0	0				

Note: All capex figures refer to estimated cost of saving measure rather than total capex for given project.

3.2.3 Planned Projects

These projects are planned, but funding is not yet confirmed.

Table 15: Clackmannanshire Council Planned Projects

Project				Estimated Annual Savings		Costs (£)		Payback period	Start Date	Completion Date
Reference	Title	Area	Person Responsible	tCO_{2e}	Financial (£)	Capex	Opex	Years		
CLA008	Reduce miles accrued by plant and vehicles	Transport	Service Manager	343	145,000	171,500		1.2	Q3, FY 2010/11	Q4, FY 2011/12
CLA010	Implement an ongoing Energy awareness campaign	Buildings	Service Manager	197	36,189	0		0.00	Q1, FY 2011/12	Q4, 2011/12
CLA015	Carbon capture from redundant landfill sites	Waste	Service Manager	NK	NK	NK		NA	Q1, FY 2011/12	Q4, FY 2012/13
CLA018	Further rationalisation of building stock (2011/12 onwards)	Buildings	Service Manager	329	55,561	0		0	Q1, FY 2011/12	Q4, FY 2012/13
CLA022	Lighting Upgrades (Schools)	Buildings	Service Manager	6	1,083	2,952		2.7	Q1, FY 2010/11	Q4, 2011/12
TOTAL				**875**	**237,833**	**174,452**				

Note: All capex figures refer to estimated cost of saving measure rather than total capex for given project

3.2.4 Identified Projects

These projects have been identified, but savings have yet to be quantified in full and/or funding is not confirmed.

Table 16: Clackmannanshire Council Identified Projects

Project				Estimated Annual Savings		Costs (£)		Payback period	Start Date	Completion Date
Reference	Title	Area	Person Responsible	tCO_{2e}	Financial (£)	Capex	Opex	Years		
CLA005	Identify buildings with the potential to be heated by Biomass	Buildings	Service Manager		NK	NK	NK	NA	Identified	Identified
CLA021	Installation of Voltage optimisation (2 sites)	Buildings	Service Manager	70	12,900	48,000		3.7	Identified	Identified
TOTAL				**70**	**12,900**	**48,000**				

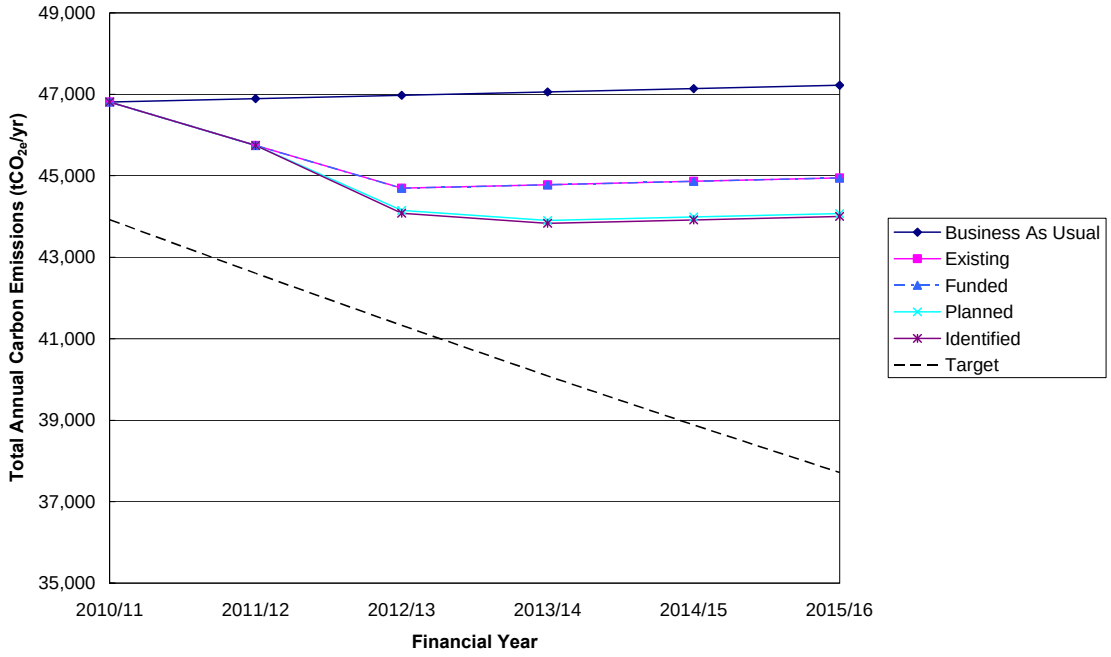
3.3 Projection of Progress Towards Target

Table 17 summarises the impact of the projects listed above on overall progress towards Clackmannanshire Council's CO_2 reduction target.

Table 17: Projected Annual Carbon Savings (tCO_{2e}/yr)

Yr			1	2	3	4	5
	UOM	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Business As Usual	tCO_{2e}	46,810	46,892	46,974	47,057	47,140	47,224
Reduced Emission Scenario	tCO_{2e}	46,810	45,746	44,081	43,835	43,918	44,002
Existing Projects	tCO_{2e}		1,146	2,277	2,277	2,277	2,277
Funded Projects	tCO_{2e}		0	0	0	0	0
Planned Projects	tCO_{2e}		0	546	875	875	875
Identified Projects	tCO_{2e}		0	70	70	70	70
Target Reduction	tCO_{2e}	43,922	42,604	41,326	40,086	38,884	37,717

Figure 5: Projected Annual Carbon Savings (tCO_{2e}/yr)



This chart shows that the emissions reduction target can only be met if *all* projects identified in this CMP (including those for which funding has not yet been allocated) are carried out.

In determining projected savings only full annual savings have been accounted for. In other words, if a project is implemented halfway through a financial year then the net carbon benefit is counted from the next full financial year onwards. This avoids over-estimation related to part year savings and, as such, can be seen as a prudent approach.

3.4 Financing

This section details the costs and benefits associated with implementing the CMP.

Table 18 provides an assessment of costs to the Council relating to building energy consumption, fleet fuel and business travel as well as the costs associated with landfilled waste. These costs amount to around £6.4 million in 2010/11. Achievement of a 3% year-on-year reduction in carbon emissions (relative to the 2006/07 baseline) is projected to deliver annual cost savings of £1.5 million by 2015/16. Table 18 also demonstrates that the aggregated savings to the Council of year on year savings is in the region of £4.2 million through to 2015/16. Clearly the financial benefits to the Council from implementing the CMP are hugely significant and could be more so if energy and fuel costs continue to increase.

Table 18: Clackmannanshire Council Projected Financial Value at Stake

	UOM	***2010/11***	***2011/12***	***2012/13***	***2013/14***	***2014/15***	***2015/16***
BAU	£ m	6.43	6.93	7.47	8.03	8.62	9.12
Reduced Emissions	£ m	6.43	6.69	6.95	7.21	7.47	7.62
Value at Stake	£ m		0.25	0.52	0.82	1.16	1.50
Cumulative Value at Stake	£ m		0.25	0.76	1.59	2.74	4.24

There are a number of sources of funding that can be considered for funding the CMP including:

- The CEEF fund: This is the Central Energy Efficiency Fund provided by the Scottish Government and allocated to Scottish Councils. Clackmannanshire Council has received funding for a range of energy efficiency projects in Council buildings.
- Capital Funding: The Council has a capital fund for major asset development.
- Spend to Save: The Council has, over several years, ring fenced monies under a Spend to Save approach for projects which can deliver savings.

Further sources of funding have been available, for example, the Scottish Government's Low Carbon Vehicle Procurement Support Scheme.

The combination of funding sources outlined here will help in providing the means of delivery of the planned carbon reductions. However, the CMP will be subject to annual assessment to ensure that sufficient funding is made available in order to maintain implemented savings.

Table 19 provides a summary of the predicted carbon reductions and the financial savings.

Table 19: Summary of Projected Cost and Carbon Savings

Total Projected Annual Cost Savings							
	UOM	***2010/11***	***2011/12***	***2012/13***	***2013/14***	***2014/15***	***2015/16***
Annual Savings	£ m	0	0.25	0.52	0.82	1.16	1.50
Total Projected Annual Carbon Savings							
Value at Stake	tCO_{2e}	0	4,288	5,648	6,971	8,257	9,507

3.4.1 Financial costs and sources of funding

The current estimated additional cost of delivering this CMP from 2010/11 to the end of financial year 2015/16 is summarised in Table 20.

This expenditure will be reviewed regularly to ensure that programme retains sufficient funding for delivery.

Table 20: Clackmannanshire Council Project Funding Summary

	UOM	
Existing Projects	£ m	0.76
Funded Projects	£ m	0
Planned Projects	£ m	0.17
Identified Projects	£ m	0.05
TOTAL		0.98

3.5 Individual Project Information

This section contains further information on the projects summarised above, including information on project progress and details of assumptions around estimates of carbon and cost savings.

Project: **Reference:**	***Business Travel Initiatives*** *CLA001*
Owner (person)	*Service Managers*
Department	*All Departments*
Description	*Targeted reduction (10%) in employee car use for business travel. Initiatives include phasing out of essential car users allowance and not paying for short/local journeys. Also promoting the use of public transport and active travel.*
Benefits	CO_2 Emissions reduction: 530 tonnes of CO_2
Funding	Project cost - NA Operational costs – NA Source of funding: Existing budgets Funding Decision: Funding secured
Resources	Existing resources sufficient to deliver savings
Ensuring Success	Continued monitoring of business travel and travel requirements for service delivery.
Measuring Success	Ongoing monitoring of distances travelled on business and individual travel allowance claims from staff
Timing	*Milestones / key dates* • *start date: Q1, FY 2010/11* • *completion date: Q4, 2011/12*
Notes	*Key Assumptions* *1.* *2.*

Project: **Reference:**	***Ban staff bringing in own heating*** *CLA006*
Owner (person)	*Energy Officer*
Department	*Facilities Management*
Description	*Production of a Council Energy Policy to ban use of heating units brought onto premises by staff.*
Benefits	CO_2 Emissions reduction: 1 tonnes of CO_2
Funding	Project cost – No cost measure Operational costs – NA Source of funding: NA Funding Decision: NA
Resources	
Ensuring Success	Promote Energy Policy across all staff in order to raise awareness of ban on heating units.
Measuring Success	Monitor office areas to identify any remaining portable heating units. Monitor electricity consumption at main offices to determine any significant change in demand.
Timing	*Milestones / key dates* • *start date: Q1, FY 2009/10* • *completion date: Ongoing*
Notes	*Key Assumptions* *1. All heating units brought into workplaces are electrically powered* *2.*

Project: **Reference:**	***Actions for reducing the amount of miles accrued by plant and vehicles*** *CLA008*
Owner (person)	*Environment Manager*
Department	*Community & Regulatory Services*
Description	*Continued review of fleet performance and service requirements to minimise overall emissions. Staff driver training included in this work. Also, establish a recording system for fleet fuel costs and establish targets for reduction.*
Benefits	CO_2 Emissions reduction: 343 tonnes of CO_2
Funding	Project cost: TBC Operational costs: TBC Source of funding: Spend to Save / CEEF Funding Decision: Funding for driver training secured
Resources	
Ensuring Success	
Measuring Success	
Timing	*Milestones / key dates* • *start date: Q3, FY 2010/11* • *completion date: Q4, 2011/12*
Notes	*Key Assumptions* *1.* *2.*

Project: **Reference:**	***Improvements in I.T.*** *CLA009*
Owner (person)	*IT Services Manager*
Department	*Support Services*
Description	*Programme of upgrading old PCs with thin client terminals. Additional enhancement to management software to enable centralised switch off / shut down of individual terminals when not in use.*
Benefits	CO_2 Emissions reduction: 223 tonnes of CO_2
Funding	Project cost: TBC Operational costs: TBC Source of funding: Capital funding / Existing contract provision Funding Decision: Funding secured
Resources	Existing resources sufficient to deliver project
Ensuring Success	Maintain accurate asset register of IT equipment to ensure phase out of old PCs is effective.
Measuring Success	Ongoing monitoring of asset register and estimated electricity consumption resulting from IT equipment within Council buildings
Timing	*Milestones / key dates* • *start date: Q1, FY 2009/10* • *completion date: Q3, FY 2011/12*
Notes	*Key Assumptions* 1. *Assume 1,000 units are replaced* 2. *Assume average PC consumes 200 W in full power mode*

Project: **Reference:**	***Implement an ongoing energy awareness campaign*** *CLA010*
Owner (person)	*Energy Officer*
Department	*Facilities Management*
Description	*Development of energy awareness programme for all existing staff and consideration of induction material for new staff moving forward.*
Benefits	CO_2 Emissions reduction: 197 tonnes of CO_2
Funding	Project cost - NA Operational costs – Staff time in maintaining awareness materials Source of funding: NA Funding Decision: NA
Resources	Support for launching and running campaign sought from the Carbon Trust.
Ensuring Success	Maintain regular updates for all staff to encourage ongoing buy-in for good practice in energy use
Measuring Success	Ongoing monitoring of energy consumption at individual sites.
Timing	*Milestones / key dates* • *start date: Q1, FY 2011/12* • *completion date: Q4, 2011/12*
Notes	*Key Assumptions* 1. *Impact of initial awareness campaign actions will be sustained for 3 years. Follow up work to maintain momentum to be carried out in subsequent years to ensure that savings persist* 2.

Project: **Reference:**	***Introduce a monitoring and targeting programme throughout the Council buildings*** *CLA011*
Owner (person)	*Energy Officer*
Department	*Facilities Management*
Description	*Installation of AMR and web-enabled data collation enabling accurate review of electricity consumption across all major buildings in the Council portfolio*
Benefits	CO_2 Emissions reduction: 758 tonnes of CO_2
Funding	Project cost: TBC Operational costs: TBC Source of funding: Capital funding / Existing utility contract Funding Decision: Funding secured
Resources	Third party contractor to install individual meters and enable data management software system.
Ensuring Success	Resource ongoing monitoring of consumption across major buildings and review of demand profiles to benchmark performance. Set target reductions against these benchmarks.
Measuring Success	Ongoing monitoring of electricity consumption data.
Timing	*Milestones / key dates* • *start date: Q1, FY 2010/11* • *completion date: Ongoing*
Notes	*Key Assumptions* 1. *Real time access to meter data enables closer scrutiny of demand patterns and swifter investigation of anomalous behaviour* 2.

Project: **Reference:**	***Carry out an investigation into the further use of small scale renewable energy devices in Clackmannanshire*** *CLA012*
Owner (person)	*Energy Officer*
Department	*Facilities Management*
Description	*Pilot projects to be undertaken including installation of small scale wind turbines and solar photovoltaics. Ongoing feasibility work to consider renewables options at individual sites on a case by case basis.*
Benefits	CO_2 Emissions reduction: 13 tonnes of CO_2
Funding	Project cost: TBC Operational costs: TBC Source of funding: Capital funding / CEEF Funding Decision: Funding secured
Resources	Third party contractors to install low/zero carbon generating technologies.
Ensuring Success	Initial feasibility work to ensure choice of technology most suited to existing and projected energy demand pattern at given site.
Measuring Success	Ongoing monitoring of technology to ensure continued performance. Monitoring of meter data to verify outputs from given devices.
Timing	*Milestones / key dates* • *start date: Q1, FY 2009/10* • *completion date: Ongoing*
Notes	*Key Assumptions* 1. *Savings assume that actions are taken as a result of the feasibility investigations.* 2. *Savings calculated on basis of output from existing 6 kW wind turbines (Muchart and Menstrie Primary Schools) and 5 kWp solar PV array at Menstrie Primary School* 3. *Savings persist over operational lifetime of assets* 4. *Further savings to be evaluated on an individual building basis*

Project:	***Carry out widespread building fabric improvements across Council stock***
Reference:	*CLA013*
Owner (person)	*Facilities Manager*
Department	*Facilities Management*
Description	*Range of measures implemented across Council Estate including heating control upgrades, insulation works and boiler replacement*
Benefits	CO_2 Emissions reduction: 503 tonnes of CO_2
Funding	Project cost: TBC Operational costs: TBC Source of funding: Capital funding / CEEF Funding Decision: Funding secured
Resources	Third party contractors as required to assist in implementing actions
Ensuring Success	Review of individual thermal performance of buildings across portfolio and targeting of specific sites for energy improvement works
Measuring Success	Ongoing monitoring of gas consumption at individual sites pre and post works to identify any changes in end user consumption
Timing	*Milestones / key dates* • *start date: Q1, FY 2006/07* • *completion date: Ongoing*
Notes	*Key Assumptions* 1. *40% of reduction in total gas consumption between 2006/07 and 2009/10 is attributable directly to works undertaken.* 2. *Average cost of measures assumed at £500/tCO_{2e} saved (Carbon Trust RAP tool figure)*

Project: **Reference:**	***Rationalisation of building stock*** *CLA014*
Owner (person)	*Service Manage – Facilities Management*
Department	*Strategy & Customer Services*
Description	*Closure and disposal of a number of buildings from within the Council buildings portfolio. Closures: Fairfield Special School, Dalmore Centre, 6 Marshill and District Court. Sales: Clackmannan Road Sports Barn, Devonvale Hall, Beam Engine House, Alloa Centre, Claremont Workshops and Alloa CHISP office*
Benefits	CO_2 Emissions reduction: 314 tonnes of CO_2
Funding	Project cost - NA Operational costs – NA Source of funding: NA Funding Decision: NA
Resources	NA
Ensuring Success	Ongoing review of service provision requirements and identification of surplus assets.
Measuring Success	Ongoing monitoring of energy provision and costs across buildings portfolio
Timing	*Milestones / key dates* • *start date: Q1, FY 2009/10* • *completion date: Ongoing*
Notes	*Key Assumptions* 1. *Energy savings based on last available consumption figures at each site* 2.

Project:	***Phased upgrading of streetlighting***
Reference:	*CLA016*
Owner (person)	*Team Leader (Roads)*
Department	*Roads*
Description	*Ongoing upgrade of existing streetlight fittings with more efficient alternative fittings (primarily COSMO lighting)*
Benefits	CO_2 Emissions reduction: 32 tonnes of CO_2
Funding	Project cost: TBC Operational costs: TBC Source of funding: Capital funding Funding Decision: Funding of 200 fittings secured. Funding for future fittings to be secured.
Resources	
Ensuring Success	Streetlighting team to ensure that upgraded light fittings meet all British Standard requirements and energy efficiency is considered in the case of the design of any new developments
Measuring Success	Ongoing monitoring of energy consumption attributable to streetlights
Timing	*Milestones / key dates* • *start date: Q1, FY 2009/10* • *completion date: Ongoing*
Notes	*Key Assumptions* 1. *Carbon savings calculated to date based on replace of 200 fittings* 2. *Lighting assumed to be operating for 4,100 burning hours per year without part dimming* 3. *Unit cost of each replacement fitting assumed at £220*

Project: **Reference:**	***Improvements to lighting and other electrical works across Council building stock*** *CLA017*
Owner (person)	*Energy Officer*
Department	*Facilities Management*
Description	*Lighting upgrades and other electrical works including small number of electrical heating replacement with wet systems. Specific works:* *Partial lighting upgrade - Ladywell Nursery School, Abercrombie P.S, Alva P.S, Coalsnaughton P.S, Craigbank P.S, Muckhart P.S, Park P. S, St Serfs P.S, Tillicoultry P.S, The Johnstone Centre, Dumyat Leisure Centre, Sauchie Central Production Kitchen and Gartmorn Dam Visitors Centre* *Lighting upgrades - Clackmannan P.S, Claremont P.S, Menstrie P.S, Fishcross P.S. (LEDs), Speirs Centre (Main hall lighting upgrade), Cochrane Hall (Compact fluorescent lamps fitted in main hall), Sauchie Hall (Compact fluorescent lamps fitted in main hall), Ludgate House OPH, Menstrie House OPH, Cochrane Park Public Conveniences, Greenfield House, Alloa Housing Office (as part of wider building refurbishment), Click Centre (as part of wider building refurbishment)* *Lighting Controls - St Bernadettes P.S (including partial lighting upgrade), Sunnyside P.S, Tullibody Public Conveniences* *Convert Electric heating to LPG wet system - Muckhart P.S*
Benefits	CO_2 Emissions reduction: 274 tonnes of CO_2
Funding	Project cost: TBC Operational costs: TBC Source of funding: Capital funding / CEEF Funding Decision: Funding secured
Resources	Third party contractors required to assist implementation at specific sites.
Ensuring Success	Ongoing asset register to assist in targeting potential measures at specific sites
Measuring Success	Ongoing monitoring of electricity consumption at individual sites to determine pre and post installation demand patterns and net impact of implemented works
Timing	*Milestones / key dates* • *start date: Q1, FY 2007/08* • *completion date: Ongoing*

Notes	*Key Assumptions* 1. *20% of net change in total electricity consumption across Council assumed to be directly attributable to works* 2. *Average cost estimated at £500/tCO_{2e} saved (Carbon Trust RAP Tool figure)*

Project: **Reference:**	***Further rationalisation of building stock (2011/12 onwards)*** *CLA018*
Owner (person)	*Service Manager, Facilities Management*
Department	*Strategy & Customer Services*
Description	*Proposed disposal of 34 sites over period 2010 -2015 as per Property Asset Management Plan*
Benefits	CO_2 Emissions reduction: 329 tonnes of CO_2
Funding	Project cost - NA Operational costs – NA Source of funding: Funding Decision:
Resources	
Ensuring Success	Property Asset Management Plan considers sustainability performance of existing buildings in rationalisation process thereby increasing the average energy efficiency of the remaining stock
Measuring Success	Ongoing monitoring of energy performance within buildings portfolio. Update and maintenance of asset register to assess ongoing energy performance of individual buildings
Timing	*Milestones / key dates* • *start date: Q1, FY 2011/12* • *completion date: Q4, FY 2012/13*
Notes	*Key Assumptions* 1. *Estimated energy savings based on 2009/10 energy consumption figures for individual sites.* 2. *Buildings closed are assumed to have minimal energy consumption requirements (e.g. heating for frost protection) pending further action (sale, demolition etc.)*

Project:	***Installation of Gas AMR (various sites)***
Reference:	*CLA019*
Owner (person)	*Energy Officer*
Department	*Facilities Management*
Description	*Installation of 69 gas AMRs across building portfolio at no cost*
Benefits	CO_2 Emissions reduction: 91 tonnes of CO_2
Funding	Project cost: TBC Operational costs: TBC Source of funding: Procured via existing contract Funding Decision: NA
Resources	Third party contractor to carry out install across specific sites
Ensuring Success	Largest gas consuming sites to be covered by AMR as a matter of priority
Measuring Success	Ongoing monitoring of gas demand profiles at specific sites
Timing	*Milestones / key dates* • *start date: Q1, FY 2010/11* • *completion date: Ongoing*
Notes	*Key Assumptions* 1. *At least 75% of total gas consumption across Council activities assumed to be captured by installed AMR* 2. *Closer scrutiny of individual site consumption assumed to assist in swifter action relating to anomalous behavioural patterns. Maximum of 5% saving considered achievable relative to 2009/10 performance*

Project: **Reference:**	***Heating Control Upgrades (various sites)*** *CLA020*
Owner (person)	*Energy Officer*
Department	*Facilities Management*
Description	*Heating control upgrades at 3 School sites*
Benefits	CO_2 Emissions reduction: 15 tonnes of CO_2
Funding	Project cost: TBC Operational costs:TBC Source of funding: Capital funding / CEEF Funding Decision: Funding secured
Resources	Third party contractors deployed as required.
Ensuring Success	Accurate maintenance records to enable assessment of control system upgrade requirements
Measuring Success	Ongoing monitoring of heating energy consumption pre and post installation to track demand patterns and savings
Timing	*Milestones / key dates* • *start date: Q1, FY 2010/11* • *completion date: Ongoing*
Notes	*Key Assumptions* 1. *Savings based on average primary school gas consumption in 2009/10* 2. *Control upgrades contribute to 12% saving in gas consumption*

Project: **Reference:**	***Installation of Voltage Optimisation*** *CLA021*
Owner (person)	*Energy Officer*
Department	*Facilities Management*
Description	*Tender for two sites*
Benefits	CO_2 Emissions reduction: 70 tonnes of CO_2
Funding	Project cost: TBC Operational costs: TBC Source of funding: Capital funding / CEEF Funding Decision: Funding yet to be secured
Resources	Third party contractor to carry out installation at each site
Ensuring Success	Consider nature of electrical load at candidate sites and identify those with greatest potential for savings
Measuring Success	Monitor electricity consumption pre and post installation to monitor impact of install
Timing	*Milestones / key dates* • *start date: Q4, FY 2010/11* • *completion date: Q3, FY 2012/13*
Notes	*Key Assumptions* 1. *Estimated annual savings total 129,000 kWh (57,000 kWh at DLO Kelliebank site; 72,000 kWh for Sauchie CPU)* 2. *Install costs estimated at £48,000*

Project: **Reference:**	***Lighting Upgrades (Schools)*** *CLA022*
Owner (person)	*Energy Officer*
Department	*Facilities Management*
Description	*Lighting upgrades at a number of primary schools - Tillicoultry P.S, Abercromby P.S, Fishcross P.S, Muckhart P.S, St Bernadettes P.S and Clackmannan P.S*
Benefits	CO_2 Emissions reduction: 6 tonnes of CO_2
Funding	Project cost: TBC Operational costs: TBC Source of funding: Capital funding / CEEF Funding Decision:
Resources	
Ensuring Success	
Measuring Success	Ongoing monitoring of electricity consumption at individual sites in order to compare pre- and post-implementation demand patterns.
Timing	*Milestones / key dates* • *start date: Q1, FY 2010/11* • *completion date: Q4, 2011/12*
Notes	*Key Assumptions* 1. *Savings based on 2009/10 electricity consumption figures* 2. *Assume 30% of electricity consumption is attributable to lighting use at each site* 3. *Assume 8% saving in consumption is achievable via lighting fitting upgrade at each site* 4. *Implementation cost estimated at £500/tCO_{2e} saving (Carbon Trust RAP Tool figure)*