

Argyll and Bute Council Carbon Management Programme 2009-2014 Carbon Management Plan Update 2011



Contents

Contents	2
Foreword from Bruce Marshall, Chair of Environment Policy & Performance Group (PPG) and Programme Member Sponsor	4
Preface from the Carbon Trust	5
Executive Summary	6
1. Introduction from Sally Loudon, Chief Executive	12
2. Carbon Management Strategy	13
2.1 Context and Drivers for Carbon Management	13
2.1.1 Corporate Plan 2011-2012	13
2.1.2 National Drivers	14
2.2 Targets and Objectives	15
2.2.1 Targets and Objectives – 2008/2009 Carbon Management Plan	15
2.2.2 Targets and Objectives – Carbon Management Plan Update 2011	16
2.3 Strategic Themes – 2008/2009 Carbon Management Plan	17
2.4 Strategic Themes – Specialist Areas	17
2.4.1 Procurement	18
2.4.2 Information Technology	18
2.4.3 Human Resources	19
2.5 Renewables Development	19
2.5.1 Renewables Sourcing Strategy	19
2.5.2 Argyll and Bute Renewable Energy Action Plan (REAP)	19
2.5.3 Argyll and Bute Renewable Alliance (ABRA)	20
2.6 Carbon Management – The Future	20
3. Emissions Scope and Baseline	21
3.1 Scope	21
3.2 Original Baseline Emissions	23
3.3 Revisions to the Baseline Emissions	25
3.4 Conventions - Carbon Conversion Factors and Costs	26
3.4.1 Carbon Conversion Factors	26
3.4.2 Costs	27
4. Progress to Date	28
4.1 Qualitative Progress	28
4.1.1 Energy in Buildings (Non NPDO)	28
4.1.2 Energy in Buildings (NPDO)	30
4.1.3 Waste	30
4.1.4 Fleet	31
4.1.5 Street-lighting	31
4.1.6 Business Mileage	31
4.2 Quantitative Progress	32
4.2.1 Emissions Reduction using Full Year Data	32
4.2.2 Emissions Reduction using Tangible Project Data	33
4.2.3 Reducing Reliance on Fossil Fuels using Tangible Project Data	33
5. Carbon Management Projects	35
5.1 Rationale for project identification	35
5.2 Delivered Projects	38

5.3	Planned/ Funded Projects	40
5.4	Proposed Projects	41
5.5	Project Areas for Future Investigation	44
5.6	Projected achievement towards target	45
6.	Implementation	46
6.1	Benefits of the Carbon Management Plan	46
6.2	Carbon Management Plan Financing	47
6.2.1	Assumptions	47
6.2.2	Financial Commitment	48
6.3	Staff Resource Commitment	48
6.4	Risk Register	49
6.5	Annual Progress Review	49
6.6	Action Plan	50
7.	Governance for Implementation	53
7.1	Carbon Management Structure	53
7.2	Strategic Ownership and Oversight	54
7.3	Project Delivery	57
7.4	Embedding Carbon Management	57
7.4.1	Corporate Strategy – embedding CO ₂ saving across your organisation	59
7.4.2	Programme Management – bringing it all together effectively	59
7.4.3	Responsibility – being clear that saving CO ₂ is everyone's job	60
7.4.4	Data Management – measuring the difference, measuring the benefit	60
7.4.5	Communications and Training – ensuring everyone is aware	62
7.4.6	Finance and Investment – the money to match the commitment	64
7.4.7	Policy Alignment – saving CO ₂ across our operations	64
	Appendix A - Carbon Management Matrix – Embedding	65
	Appendix B - Communications Plan:	66
	Appendix C – Risk Matrix	73
	Appendix D - Status of the Carbon Management Plan 2009 Projects	74
	Appendix E – Register Of Energy Performance Certificates	78

Cover Photographs:

Left – Toward Primary School, Solar Photovoltaic System

Right – Food Waste Recycling, Helensburgh



Foreword from Bruce Marshall, Chair of Environment Policy & Performance Group (PPG) and Programme Member Sponsor

For Cllr Bruce Marshall input c/w signature, title block and photograph

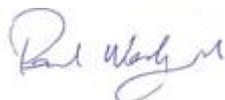
Preface from the Carbon Trust

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.

Argyll and Bute Council was selected to take part in this ambitious programme and partnered with the Carbon Trust in order to realise substantial carbon and cost savings. This Carbon Management Plan continues to commit the organisation to a target of reducing CO₂ by 20% by March 2014 and underpins tremendous potential financial savings to Argyll and Bute Council.

There are those that can and those that do. Public bodies can contribute significantly to reducing CO₂ emissions. The Carbon Trust is proud to support Argyll and Bute Council in the on-going implementation of its carbon management.

A handwritten signature in blue ink, appearing to read 'Paul Wedgwood'.

Paul Wedgwood
Manager, Carbon Trust in Scotland

Executive Summary

Using a baseline year of 2007/08, Argyll and Bute Council calculated an emissions baseline, or carbon footprint, of 26,491 Tonnes CO₂/annum.

Argyll and Bute Council has committed to reducing carbon emissions by 20% (equivalent to 5,298 tonnes CO₂/annum) by March 2014. An interim target of 9.7% within three years was also set (2,570 tonnes CO₂/annum).

This represents a challenging, but achievable, milestone on the journey to a national 42% carbon reduction target by 2020.

When Argyll and Bute Council participated in the Carbon Trust Local Authority Carbon Management throughout 2008/2009, the Carbon Trust encouraged ambitious/aspirational carbon reduction targets. From Day One, Argyll and Bute Council proposed a 20% emissions reduction over 5 years with limited comprehension of the extent of the task ahead or whether the target was at all achievable.

It became clear, when compiling the initial list of carbon reduction projects, that it would need a significant amount of resource and creativity to achieve the target carbon emissions reduction by 2014. Achieving further targets beyond this level would represent an even more daunting challenge.

Now, at the half way point in the five year programme (2009-2014) this view has not changed. The Carbon Management Programme has been buoyed by success in some areas, whilst a number of challenges offer up as reminder the commitment, enthusiasm, investment, and effort that the Council will have to afford to ensure the successful delivery of the programme.

The Carbon Management Plan has always been viewed as a 'live' document which will have to continually adapt to change. **The Carbon Management Plan Update 2011 has therefore been prepared at the mid-point of the existing Carbon Management Programme 2009-2014 to take stock of a range of ever evolving influencing factors and ensure that the associated Work Plan will address the previously identified targets.**

The Carbon Management Plan Update 2011 was developed with the support of the Carbon Trust's "Carbon Management Revisited Programme" and involved key personnel from a wide range of Council Services. This programme offered excellent opportunity to benefit from the Carbon Trust's experience of working with Scottish Local Authorities and inform the Council's carbon management strategy.

The Plan is integral to Argyll and Bute Council's corporate objectives and delivery of the Carbon Management Programme will help to meet the wider objectives of the Climate Change (Scotland) Act 2009 and provide savings through efficiencies and the improved use of resources. It also provides a demonstration of Argyll and Bute Council's continued commitment to reduce carbon emissions and hence its impact on Climate Change.

Further details are provided throughout the plan, but the **key successes** to date can be summarised as follows.

- Ongoing carbon reductions, particularly due to lower waste levels arriving at landfill.
- An overall improvement in the embedding of Carbon Management into Argyll and Bute Council's culture.
- Strong integration with the Asset Management Board and within the capital planning process - including business case development with a scoring system which benefits projects with carbon reduction elements. An investment of circa £1.8Million has been approved on specific carbon reduction projects in 2011/2012 (equivalent to a reduction of 1080 tonnes CO₂/annum) and business cases to slightly higher values are currently being collated for consideration in the 2012/2013 capital process.
- Considered approach to the selection of larger projects to avoid 'eco-bling' and concentrate on projects that ensure the best outcomes against IMPACT, AFFORDABILITY, DELIVERABILITY and RISK. Recent collaborative work with the Carbon Trust on developing a Renewables Sourcing Strategy has provided market intelligence which advocates the best technologies to progress and has corroborated the choices made to date (e.g. biomass projects, solar photovoltaics, larger scale wind).
- Recent re-organisation within Facility Services has resulted in the resources of the Energy Team and Technical Support Team being combined to form a new 'Energy and Building Services Team'. This facilitates a more efficient use of the available staff resource/skills base and it is expected that this new Team will draw out greater opportunity within property maintenance/upgrade programmes to further improve carbon effectiveness and will also inform specification in building services design to the same purpose.
- Complying with the Energy Performance in Buildings Directive, Energy Performance Certificates have been prepared and subsequently displayed in qualifying premises (generally public buildings with floor area over 1000m²).

In delivering the programme to date, the **key challenges** can be summarised as follows.

- There remains considerable scope to address a range of good practice energy conservation measures. Despite difficulties in employing skilled staff, a Mechanical/Energy Engineering Officer was appointed in September 2011. This appointment will enhance the resource required in this area of service delivery
- The inadequacy of energy/fuel data in some areas, as highlighted within section 7.4, has prevented meaningful assessment of the overall current position/performance and restricted benchmarking, thereby hindering identification of areas of greatest potential. Largely affected are/have been

street-lighting electricity, smaller/medium sized buildings electricity, vehicle fleet fuel and waste from public buildings.

- A number of originally identified projects have not progressed. Wind projects (Tiree, Islay where wind resource is good) have been deferred after feasibility work identified significant planning risk. Another project with potentially high carbon reduction prospects, converting Campbeltown Grammar School from oil to biomass heating, has been deferred due to the prospects of a new school build (the planned new school has a government funding condition which requires delivery of a BREEAM “Excellent” rating).
- Energy Performance Certificates (EPC’s) are generally prepared for public buildings over 1000m² floor area on the basis of their theoretical energy performance (as opposed to operational). Akin to other local authorities, the ‘quality’ of the building stock is borne out by the profile in the following table:

Table: Quantities of sites against each EPC rating (Source – Council records)	
Energy Performance Certificate Rating	Quantity of Sites
A	1
B	0
C	3
D	7
E	11
F	12
G	23

Note: ‘A’ Rating represents highest performance banding

The Action Plan located in Section 6.6 is substantially aligned to deal with the Programme challenges, continually seek opportunity and consider the prospects beyond the current Programme end date of March 2014.

Some **subjective assessment** of Carbon Management Plan implementation is carried out within the Council’s Pyramid Performance Management Reporting system and other **qualitative assessments** e.g. embedding matrix (Appendix A) are utilised within the Carbon Management Plan.

Data quality continues to burden the Programme in terms of **quantative assessment**. It is likely that some of the issues will persist within the current time-frame of the Programme.

To enable quantative assessment to be carried out within the current Programme, it is proposed to utilise measured data where quality is assured and utilise a system of tangible project evaluation where quality of information is lacking e.g. savings from a

lighting project will be calculated from project outputs/particulars rather than by comparison of the sites electricity use from one period to the next.

Having consulted with the Carbon Trust on the best approach taken by other Scottish Local Authorities, it was decided to utilise data for waste which is measured i.e. data for all waste arriving at landfill will replace the original methodology which used waste arising from Council buildings as a ratio of waste arriving at landfill – thus all Council waste reduction effort is accounted for and this replaces un-measured building specific waste arising. This change will be reflected in future Pyramid reporting.



Photograph – Glengorm landfill site, Isle of Mull

It is acknowledged that the waste data changes have a positive effect on the performance to target and the Council will therefore strive to deliver carbon reductions in excess of the 20% target. It should be noted that it had been a marginal choice during the development of the original Carbon Management Plan whether to measure all landfill waste or adopt a link to Council buildings. With hindsight, the choice made has presented the Council with a more ambitious target than had the alternative been chosen.

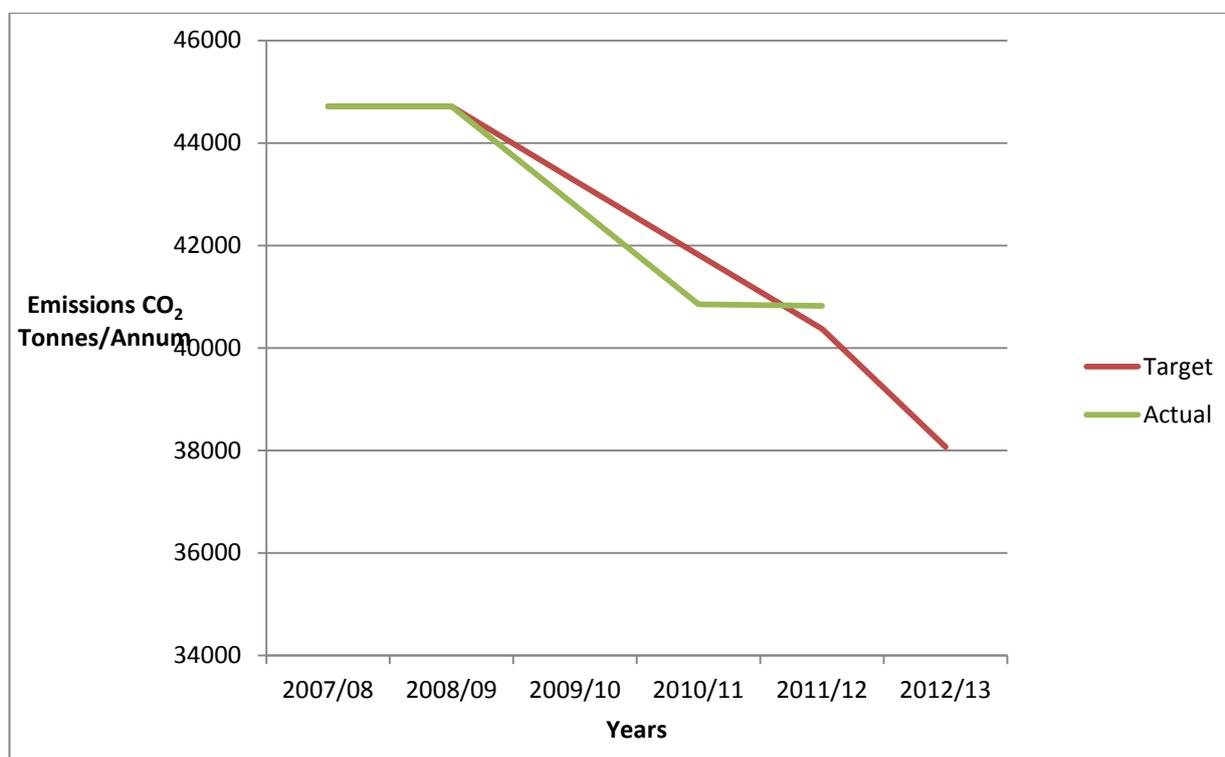
Based on an amended baseline of 44,714 tonnes CO₂/annum, Argyll and Bute Council's five year target to reduce carbon emissions of 20% by March 2014 now equates to a reduction of 8,943 tonnes CO₂/annum). The interim target of 9.7% within three years would equate to 4,337 Tonnes CO₂/annum).

Table A and Figure A below demonstrate progress against the amended baseline figure and projected target reductions.

Table A: Revised emissions baseline with targets and evaluation of tangible projects completed (Source: Council records)

	Baseline Year 2007/08	CMP Preparation 2008/09	Year 1 2009/10	Year 2 2010/11	Year 3 2011/12	Year 4 2012/13	Year 5 2013/14
Emissions CO ₂ (Tonnes)							
Revised Baseline Emissions	44,714	N/A	N/A	N/A	N/A	N/A	N/A
Target Reduction	N/A	N/A	1448	2896	4337	6644	8943
Completed Tangible Projects	N/A	N/A	1928	3857	3890	N/A	N/A
Proposed Tangible Projects	N/A	N/A	N/A	N/A	1086	1342	0
Tangible Projects Gap Analysis			480	961	639		

Figure A: Revised emissions baseline with targets and evaluation of tangible projects completed (Source: Council records)



Largely attributable to a strong waste reduction performance and projections arising from an ambitious capital programme, which has a substantial carbon reduction flavour, execution of the Carbon Management Programme is clearly advancing in an encouraging fashion. It should be noted that Table A and Figure A will not include waste data for 2011/2012 until the start of financial year 2012/2013.

Conclusion and the Way Forward

As had been anticipated, the Carbon Management Programme implementation has been extremely challenging.

Whilst considerable progress has been made in a short space of time, significant effort will need to be afforded to the Programme in the remaining two and a half years to ensure the 20% carbon reduction target is delivered by March 2014.

The Action Plan detailed in Section 6.6 will address the areas requiring greatest attention.

An ambitious and varied list of projects is currently the subject of business case development for the 2012/2013 capital programme and beyond. This provides demonstration of the Council's commitment to the Carbon Management Programme.

The Council is aware of the opportunities that the Government's renewables incentive programmes can offer, namely the Feed-in-tariff (FIT) and Renewable Heat Incentive (RHI). As the terms of these incentive programmes are subject to change, it is recognised that the Council will require to consider how best to take advantage of the most favourable rates and conditions.

With this in mind, the Council has been working in collaboration with the Carbon Trust to develop a Renewables Sourcing Strategy. Ultimately, this will inform the optimum projects to take advantage of the most attractive incentive rates. An initial component of the Strategy has been the preparation of an options appraisal which offers the Council direction on the most appropriate renewable technologies to implement.

In advocating the use of certain renewable technologies in appropriate applications, the Council remains committed to the need for, and importance of, routine best practice carbon reduction activity e.g. energy conservation.

In moving forward, partnership working and shared opportunities in relation to carbon management will be actively investigated with public, private and third sector organisations.

1. Introduction from Sally Loudon, Chief Executive

Argyll and Bute Council is committed to improving environmental performance and reducing carbon emissions. Both the public and our staff have the right to expect that we will act to reduce our impact on the climate/environment.

It was previously recognised by the Carbon Trust nationally that a greater education in, and a more co-ordinated approach to, carbon management was required. In order to achieve this, and to assist in the dissemination of best practice, the Carbon Trust developed the Local Authority Carbon Management (LACM) Programme.

Argyll and Bute Council participated in LACM6 (the sixth annual programme, which included the balance of Scottish Local Authorities who had yet to participate in the programme) throughout the course of 2008/2009. One of the key outputs from LACM6 participation was the creation of a Carbon Management Plan which was subsequently approved and adopted by the Council.

Since then, there have been a number of programme developments including policy changes and Service re-organisation. In addition there have been a number of lessons learned throughout all the participating authorities through work undertaken by the Carbon Trust. The Carbon Management Plan Update 2011 was developed with the support of the Carbon Trust's "Carbon Management Revisited Programme" and involved key personnel from a wide range of Council Services. This programme offered excellent opportunity to further benefit from the Carbon Trust's experience and inform the Council's carbon management strategy.

The Carbon Management Plan has always been viewed as a 'live' document which will have to continually adapt to change. The Carbon Management Plan Update 2011 has therefore been prepared at the mid-point of the existing Carbon Management Programme 2009-2014 to take stock of a range of ever evolving influencing factors and ensure that the associated Work Plan will meet the previously identified targets.

In moving forward the Council consider the following areas worthy of particular development

- **Renewables Implementation** – The Council will seek to take best advantage of government incentives such as Feed-in-tariffs (FIT) and the Renewable Heat Incentive (RHI). A renewables sourcing strategy is currently being prepared to ensure the implementation of the most appropriate technologies and delivery vehicles.
- **Shared Services** – The Council will continue to explore opportunities for common initiatives, partnership working and the sharing of best practice.

Argyll and Bute Council is extremely grateful for the valuable support that partnership working with the Carbon Trust continues to offer.

Sally Loudon
Chief Executive

PHOTO

2. Carbon Management Strategy

The Corporate Plan 2011-2012 was approved by Council in February 2011. Within the Plan, the Council has recognised the importance of climate change and carbon reduction by specifically seeking to achieve the corporate outcomes

- We have reduced the carbon footprint of Argyll and Bute Council
- We have 'reduced, re-used and recycled' more

Our vision is to “Reduce the Council’s greenhouse gas emissions by harnessing the imagination, commitment and innovation of our staff and deploy smart, well researched and reliable technologies which complement and maximise the fantastic opportunities afforded by our weather, landscape and seascape within Argyll and Bute”.

Through the delivery of the Corporate Outcomes, Argyll and Bute Council will derive a range of benefits including a reduction in revenue costs, mitigating future financial risk from rising energy costs, reducing dependency on diminishing fossil fuels, controlling environmental risk exposure and ensuring compliance with all statutory obligations in force.

2.1 Context and Drivers for Carbon Management

2.1.1 Corporate Plan 2011-2012

There have been updates to the Council’s Corporate Plan since the Carbon Management Plan was originally adopted, though the need to tackle climate change and environmental issues generally remains integral to the Council’s planning. The Council’s Corporate Plan 2011-2012 is set out below:

There are four Corporate Objectives with a number of associated Corporate Outcomes:

Corporate Objective 1 – Working together to improve the potential of our people

Corporate Objective 2 – Working together to improve the potential of our community

Corporate Objective 3 – Working together to improve the potential of our area

Corporate Objective 4 – Working together to improve the potential of our

The following outcomes specifically relate to carbon management within Corporate Objective 3:

- We have reduced the carbon footprint of Argyll and Bute Council.
- We have “reduced, reused and recycled” more.

2.1.2 National Drivers

Since the original plan was created there have been a number of changes to the policy landscape which provide further impetus for the Council to act. These are summarised as follows:

Table 2.1 - Summaries of policy landscape changes

Policy	Summary	Requirements
Climate Change Act (Scotland) section 44	Duties of Public Bodies relating to climate change	In exercising its functions public bodies must act: <ul style="list-style-type: none"> • in the way best calculated to contribute to delivery of the Act's emissions reduction targets (80% by 2050 with Interim Target of 42% by 2020; 1990 baseline); • in the way best calculated to help deliver any statutory adaptation programme; and • In a way that it considers most sustainable.
Climate Change Act (Scotland) Section 46	Reporting on Climate Change duties	Provision may be made for Public bodies to prepare reports on compliance with climate change duties How the following areas have contributed to compliance with climate change duties will be particularly relevant: <ul style="list-style-type: none"> • Procurement policies • Procurement activities
Scottish Climate Change Declaration	In signing the Declaration, Argyll and Bute Council is acknowledging climate change issues and is committed to:	<ul style="list-style-type: none"> • Provide effective leadership, governance and management on climate change • Reducing Council greenhouse gas emissions • Take action to reduce emissions from LA area • Assessing the risk of climate change impact and working with others to adapt to climate change • Creating effective climate change communications and partnerships including producing an annual statement of plans, activities and achievements
CRC (Carbon Reduction Commitment) Energy Efficiency Scheme	A mandatory reporting and carbon trading scheme for all organisations consuming over 6,000MWh through HH meters in 2008	<ul style="list-style-type: none"> • Participating organisations must report on emissions covered from 2010-11 • Participating organisations must purchase Carbon Allowances for emissions covered from 2012, valued at £12 per tonne of CO₂ emitted • Participating organisations performance will be visible in a Performance League Table available to the public • Participating organisations are required to keep an up-to-date evidence pack and undertake internal QA processes.

Scotland's Waste Plan	Zero	Its goal is to achieve the best overall outcome for Scotland's environment through good resource and waste management.	<ul style="list-style-type: none">• Target of 70% recycling and maximum 5% to landfill by 2025• Source segregation and separate collection of specific waste types• Landfill bans for specific waste types• Restrictions on inputs to energy from waste facilities
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- *Note that Argyll and Bute Council is not currently a participant in the CRC Energy Efficiency Scheme as its electricity consumption currently has fallen below the initial qualifying levels. It is considered prudent to assume that the Council will be drawn into the scheme at the next phase (believed 2013).*

2.2 Targets and Objectives

2.2.1 Targets and Objectives – 2008/2009 Carbon Management Plan

The baseline year for Argyll and Bute Council carbon emissions is 2007/08. Our carbon emission statistics for that year were gathered with the help of the Carbon Management Project Team and amounted to 26,491 tonnes of CO₂.

Using a baseline year of 2007/08, Argyll and Bute Council has committed to a challenging, but achievable, target to reduce its carbon emissions by 20% by March 2014.

In establishing the Carbon Management Plan, the Council set the following targets and objectives:

- Reduce Argyll and Bute Council's total CO₂ emissions by 20% by March 2014, using financial year 2007/2008 as a base-line. Thereafter, reduce the Council's total CO₂ emissions year on year.
- Reduce Argyll and Bute Council's dependence on fossil fuels, whether by energy efficiency efforts or renewables implementation, by 12% by March 2014; using financial year 2007/2008 as a base-line.
- For an investment of approximately £2.5M of capital and revenue, deliver a projected annual reduction of 2,500 tonnes of carbon emissions; equivalent to a reduction of 10% in the Council's carbon footprint, within the first 3 years of the carbon management programme.
- Embed the principles of carbon management into the Council's procedures, practices and decision making processes, particularly in terms of Asset Management, future capital decision making and procurement.
- Embed the process of annual project identification and development through options appraisal to business case development.

- Develop, in conjunction with Strategic Finance a set of evaluative criteria reflective of the Council's commitment to reducing carbon emissions which will be incorporated within future capital planning and business case guidance.
- Encourage workforce involvement in the identification of opportunities for carbon reduction projects and the implementation of actions.
- Raise the environmental profile of the Council.
- Lead by example and encourage partners and the wider community to make changes to reduce carbon emissions.

2.2.2 Targets and Objectives – Carbon Management Plan Update 2011

In re-visiting the Carbon Management Plan, the Council has reviewed and retains or sets the following targets and objectives, some of which are already implemented:

- Reduce Argyll and Bute Council's total CO₂ emissions by 20% by March 2014, using financial year 2007/2008 as a base-line. Thereafter, reduce the Council's total CO₂ emissions year on year.
- Reduce Argyll and Bute Council's dependence on fossil fuels, whether by energy efficiency efforts or renewables implementation, by 12% by March 2014; using financial year 2007/2008 as a base-line (clarification – fossil fuels relate to direct use of oil and gas in buildings).
- For an investment of approximately £4.2M of capital and revenue in financial years 2011/2012 and 2012/2013, deliver a projected annual reduction of 2,422 tonnes of carbon emissions; equivalent to a reduction of 27% of the Council's carbon reduction target.
- Embed the principles of carbon management into the Council's procedures, practices and decision making processes, particularly in terms of Asset Management, future capital decision making and procurement.
- Embed the process of annual project identification and development through options appraisal to business case development.
- Develop a set of evaluative criteria reflective of the Council's commitment to reducing carbon emissions which will be incorporated within future capital planning and business case guidance.
- Encourage workforce involvement in the identification of opportunities for carbon reduction projects and the implementation of actions.
- Raise the environmental profile of the Council.
- Lead by example and encourage partners and the wider community to make changes to reduce carbon emissions.
- Make provision for national drivers.
- Conclude the development and implementation of a Renewables Sourcing Strategy which will derive solutions to maximise Renewable Heat Incentive and Feed in Tariff income opportunities.

2.3 Strategic Themes – 2008/2009 Carbon Management Plan

The Strategic themes identified in the original Carbon Management Plan (08/09) were:

- Political & managerial commitment, zeal and will to work over the long term to reduce greenhouse gas emissions.
- The procurement, development and the retention of:
 - Engineering and technical skills which can deliver energy saving and renewable energy projects and solutions.
 - Project Development, Business Case Development and Project Management skills to deliver the Carbon Management Programme.
 - Organisational behaviour and change management skills:
 - Communications skills which effectively engage with staff at an appropriate level and which positively alter staff perception and behaviour in favour of reducing green house gas emissions.
 - Communications Campaigns must be consistent, sustained but remain fresh over the Long Term.
 - ‘Carrot and Stick’ – management processes to shape and change behaviour, and the commitment to manage effective change with interventions as required.
- Building in ‘Best Practice’ within new build property construction and/or property upgrade projects to minimise future green house gas emissions and utility costs in line with the Council’s Asset Management Strategy and Service Asset Management Plans.
- The development of effective partnerships with stakeholders within the private and public sector (e.g. NHS Highland) and within our communities who can lever in finance, resources, community vigour & commitment and expertise to assist with the delivery of our strategic aims.
- The establishment of “Flag Ship“ areas of the Council operations where it can achieve a “Zero Carbon” footprint; such as on island communities – Islay. These areas can be used to galvanise community involvement and to help engender and sustain momentum elsewhere within the Council’s sphere of operations.
- The rejection of “token” projects which provide “Eco Bling” but do not deliver meaningful reductions in carbon emissions or energy savings.
- Supporting the Curriculum for Excellence within Argyll & Bute schools.

In updating the Carbon Management Plan 2011, the review process has demonstrated that these themes remain valid.

2.4 Strategic Themes – Specialist Areas

The original strategic themes are believed to cover the most prominent sources of emissions and also those in which the Council can exert greatest influence.

In addition, there are other specialist areas of activity which can influence emissions reduction which also fall within the scope of the Carbon Management Programme. These include:

- Procurement
- Information Technology
- Human Resources

2.4.1 Procurement

The Council has an obligation to procure sustainably and understand the potential environmental, social and economic impacts that are a result of our purchasing decisions. The Council shall ensure that all relevant procurement contracts and tenders consider sustainability issues, as appropriate. The Council shall achieve this by:

- Considering sustainability when writing sourcing strategies, specifications and evaluating tender submissions.
- Undertaking a basic life cycle analysis of goods, works and services to minimise the adverse effects on the environment. Where it is possible to establish the amount of CO₂ associated with the procurement then this should be monitored and any reductions reported upon.
- Examining if the supplier is acting in a sustainable manner.
- Establishing whether the supplier has ISO 14001 or other management systems to ensure emissions are being managed appropriately.
- Seeking evidence from the supplier and/or its supply chain of innovative solutions to reducing the carbon footprint.

2.4.2 Information Technology

From personal computers & laptops to printers & servers, information technology is a large consumer of energy. Areas of more intensive information technology use may also require the introduction of cooling (often operational 24/7) to avoid excessive temperatures.

Opportunities for carbon reduction include:

- Replacement of old PC's/laptops with modern, less energy intensive equivalents.
- Replacement of other old ICT equipment with modern, less energy intensive equivalents.
- Limit the use of air conditioning where possible; maximise free cooling; consider locations, room layouts etc.
- Adoption of best practice air conditioning maintenance/control regimes.
- Computer auto-shutdown software.
- Server virtualisation.
- Improved communications technology (impact on business travel).

2.4.3 Human Resources

Human resources can support the Carbon Management Plan as follows:

- ensure those staff involved in carbon reduction have appropriate job descriptions and personal objectives identified to help motivate them to meet their targets,
- consider all staff inductions as an opportunity to educate new staff on carbon reduction, and
- promote e-learning or other training options; ensure that carbon reduction isn't purely the domain of specialist or sustainability teams i.e. 'being clear that saving CO₂ is everyone's job'.

2.5 Renewables Development

2.5.1 Renewables Sourcing Strategy

A Renewables Sourcing Strategy is currently being developed in collaboration with the Carbon Trust. Early options appraisal work has highlighted the fact that biomass projects, photovoltaic panels and larger scale wind projects currently offer the most attractive investment and/or carbon return opportunities. Whilst specific applications may suit heat pumps, small scale wind and/or solar thermal installations, the options appraisal work suggests that these technologies be afforded lower priority for the time being – this is mainly due to the fact that these technologies offer less attractive financial returns.

The Action Plan in Section 6.6 considers the completion and implementation of the Strategy.

2.5.2 Argyll and Bute Renewable Energy Action Plan (REAP)

The Renewable Energy sector is increasingly being recognised as a key sector within Scotland and a significant driver of its future economic success. Argyll and Bute offers an abundant indigenous renewable resource with the potential to contribute towards this success, and most importantly transform the economy and communities of Argyll and Bute, and contribute to substantial future sustainable economic development.

The Argyll and Bute Renewable Energy Action Plan (REAP) 2010-2013 was approved in 2010. The REAP provides a framework to facilitate a co-ordinated partnership approach to renewable development in Argyll and Bute.

The vision for the Renewable Energy Action Plan seeks to ensure: "Argyll and Bute will be at the heart of renewable energy development in Scotland by taking full advantage of its unique and significant mix of indigenous renewable resources and maximising the opportunities for sustainable economic growth for the benefit of its communities and Scotland."

With the potential for significant renewable developments within Argyll and Bute, particularly offshore wind and marine (wave and tidal), the REAP aims to ensure that through this approach we are well placed to understand the implications of, and respond to the opportunities presented by, the development of this industry.

2.5.3 Argyll and Bute Renewable Alliance (ABRA)

The Argyll and Bute Renewables Alliance (ABRA) was developed from a key action identified in the REAP to facilitate a co-ordinated partnership approach to the development of the renewables sector in Argyll and Bute. The alliance meet three times per annum.

ABRA brings together key partners, including Argyll and Bute Council, Highlands and Islands Enterprise, Scottish Government, Marine Scotland, Scottish Power Renewables, Scottish and Southern Energy, the Crown Estate, Scottish Natural Heritage and Skills Development Scotland. The alliance will ensure a strategic overview of renewable development, and aim to develop a greater awareness of all the issues relating to this development, across Argyll and Bute and Scotland, as well as assist with the implementation of the REAP.

2.6 Carbon Management – The Future

The Carbon Management Programme currently benefits from a prominent status within the Council's Corporate Plan and the 'spend to save' opportunities that exist. The Programme will however, especially in the context of capital funding provision, always be considered within/against the wider framework of public services that the Council deliver. It is recognised that priority will be determined in a structured fashion having regard to Impact/Affordability/Deliverability/Risk. Although the knock on effects of ever increasing fuel prices, carbon reduction legislation, fossil fuel depletion etc are likely to result in carbon management retaining a high level of relative importance, this will be determined within the overall context of Council priorities.

In moving forward, partnership working and shared opportunities in relation to carbon management will be actively investigated with both public, private and third sector organisations.

3. Emissions Scope and Baseline

3.1 Scope

The scope of this carbon management plan includes gas, oil and electricity usage at all sites, street-lighting electricity use, fleet vehicle fuel use, business travel and all landfill waste.

The following areas represented the sources of emissions which originally formed the basis of the Argyll and Bute Council carbon emissions baseline:

- Energy Consumption in Council occupied buildings (arising from Council owned and tenanted premises).
- Energy consumption by street-lighting.
- Fleet vehicle fuel consumption.
- Employee business travel.
- Waste Management (arising from Council owned and tenanted premises).

The carbon emissions baseline (or carbon footprint) is effectively the amount of carbon created (26,491 tonnes CO₂) from the defined emission sources over a defined period in time. This was calculated in 2007/08, the baseline year.

It is proposed to alter the scope slightly for the Carbon Management Plan Update 2011 to the following:

- ***Energy Consumption in Council occupied buildings (arising from Council owned and tenanted premises).***
- ***Energy consumption by street-lighting.***
- ***Fleet vehicle fuel consumption.***
- ***Employee business travel.***
- ***Waste Management (all landfill waste).***

The only difference proposed is to re-calculate the emissions baseline using all landfilled waste instead of an arbitrary percentage attributed to waste arising from Council owned and tenanted premises. This approach is being adopted after consultation with the Carbon Trust as it reflects workable practice within other Local authorities.

The rationale for this change is largely linked to the difficulties being encountered with the quality of emissions data streams. Waste from buildings is not weighed and whilst using a percentage (7.6% adopted by Argyll and Bute Council) of waste arriving at landfill seems reasonable to establish a baseline for buildings waste, there is then no robust way to measure the success or otherwise of any direct waste reduction measures taken in premises.

The issues of data quality are generally covered elsewhere in the Plan, but given the extent of the issues, it makes some sense to improve the overall

position and move from unmeasured sources to measured sources where possible (i.e. accurate information of waste arriving at landfill is available). Furthermore, a significantly greater Council resource and effort is afforded to the overall processing of waste as opposed to reducing waste purely from Council premises – this should be recognised.

The implications of this revised approach are as follows:

- baseline emissions (CO₂ tonnes/annum) will increase significantly (from 26,491 to 44,714 CO₂ tonnes/annum),
- targeted 20% carbon reduction by 2014 does not change,
- targeted emissions reduction increase significantly (from 5,298 to 8,943 CO₂ tonnes/annum), and
- strong waste reduction performance to date will skew figures to present a more positive looking overall carbon reduction performance.

Within the Carbon Trust Local Authority Carbon Management Programme (LACM) there does not seem to have been a consistent approach to handling of waste. Some Councils had originally decided to use all landfill waste in their emissions baseline but others who made similar choices to Argyll and Bute Council are now facing similar issues.

The following areas represent the sources of emissions which were not initially proposed to be covered within the scope of the Carbon Management Plan. These areas remain possibilities for future inclusion in the Carbon Management Programme but until likely data streams have greater maturity, they will remain outside the scope of the Plan:

- **Employee commuting.** Despite excluding staff commuting from the scope of this phase of carbon planning, Argyll and Bute Council remain committed to more carbon friendly commuting by:
 - **Encouraging car sharing** – The Council are part of the www.IfYouCareShare.com car sharing scheme.
 - **Promoting cycle to work** – Salary sacrifice scheme for employees to make savings on bicycles for travel to work.
 - **Improving Cycling Infrastructure** – Developing the network of routes (both National Cycle Network and short community links), provision of bicycle parking, raising awareness of cycle and walking facilities throughout the area and the health, social and environmental benefits of using them.
 - **Encouraging uptake of national initiatives** – Walk to Work Week, Cycle to Work Week etc.
- **Water consumption**
- **Ferry / Air business travel**

3.2 Original Baseline Emissions

In the original 2008/2009 Carbon Management Plan, Argyll and Bute Council baseline emissions were calculated to be 26,491 tonnes CO₂ per annum, with baseline cost of £7,111,422 per annum.

Table 3.2.1 and Figure 3.2.1 below detail the baseline emissions (CO₂ tonnes/annum) and baseline cost (£/annum) attributable to those sources identified within the original Carbon Management Plan scope.

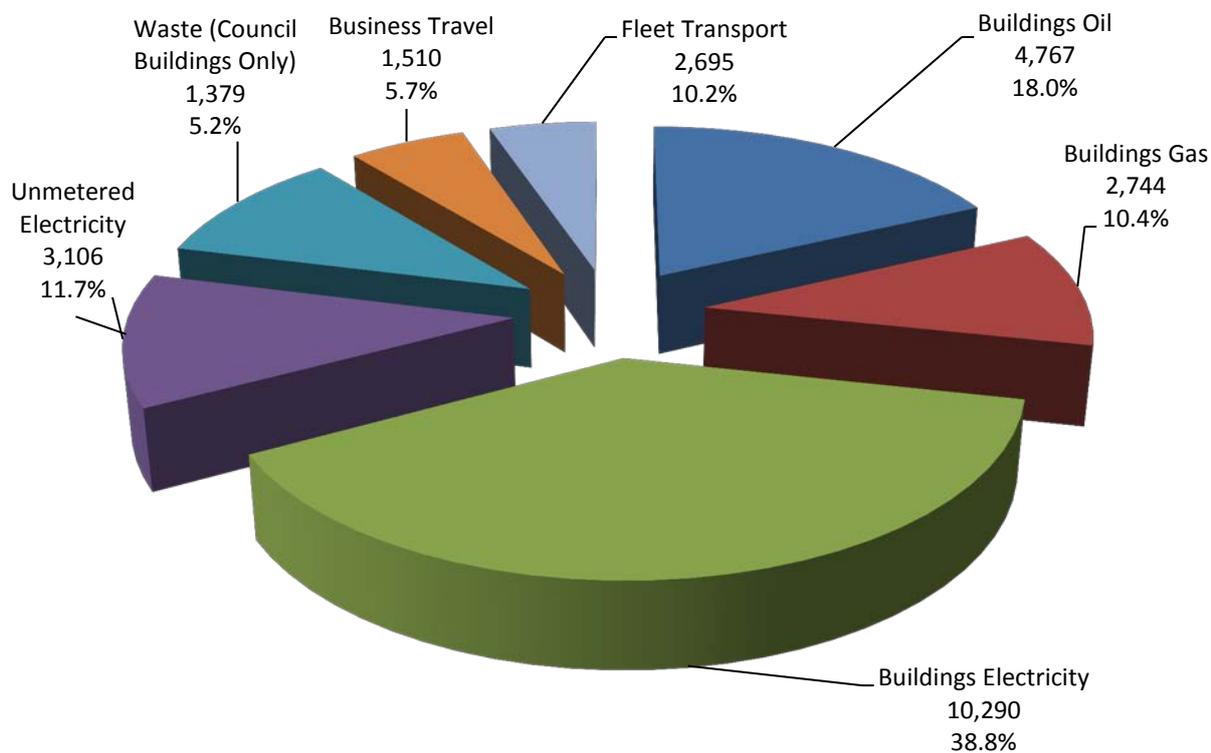
Table 3.2.1 - Summary table of Argyll and Bute Council carbon emissions with associated costs (source: Carbon Management Plan 2008/2009)

Source	Baseline Cost £	% Cost	Baseline Emissions CO ₂ Tonnes	CO ₂ %
Buildings Oil	853,090	12.0	4,767	18.0
Buildings Gas	445,062	6.3	2,744	10.4
Buildings Electricity	2,361,171	33.2	10,290	38.8
Unmetered Electricity*	653,245	9.2	3,106	11.7
Fleet Transport	871,012	12.2	2,695	10.2
Business Travel	1,588,326	22.3	1,510	5.7
Waste (Council Buildings Only)	339,516	4.8	1,379	5.2
TOTAL BASELINE	7,111,422	100.0	26,491	100.0

* Unmetered electricity generally consists of street-lighting, but can include other unmetered supplies.

When determining the most appropriate projects to reduce carbon emissions it is vital to identify where the greatest savings may be made and to target these areas accordingly. Figure 3.2.1 below gives an overview of the carbon emissions from our original baseline year.

Figure 3.2.1 - Carbon emissions by source



Section 3.3 considers a revised baseline emissions value.

3.3 Revisions to the Baseline Emissions

In the Carbon Management Plan Update 2011, Argyll and Bute Council baseline emissions and costs for 2007/2008 have been revised. They are now calculated to be 44,714 tonnes CO₂ per annum, with baseline cost of £10,028,148 per annum.

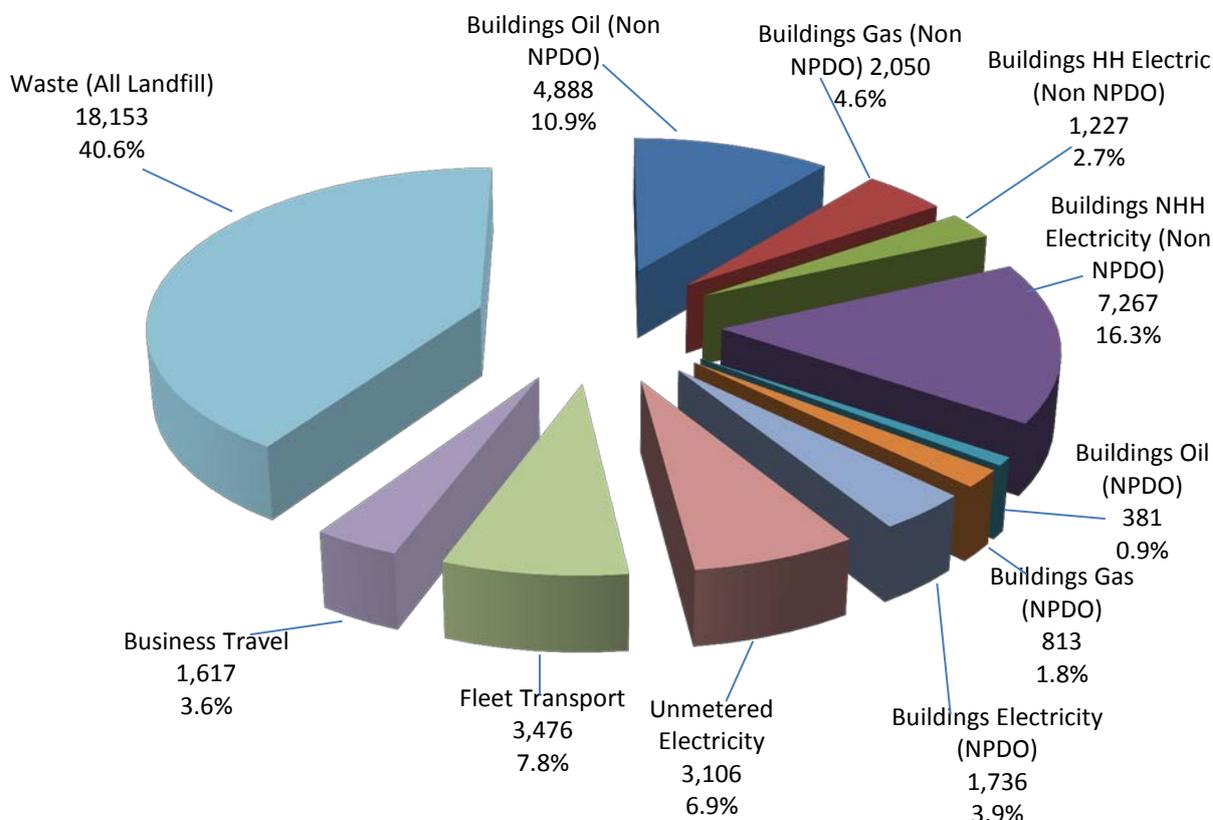
Table 3.3.1 below details the revised baseline emissions (CO₂ tonnes/annum) and baseline cost (£/annum) attributable to those sources identified within the revised Carbon Management scope (refer to Section 3.1). NPDO schools have been separated from the main Council property portfolio as these sites are governed differently and half hourly electric (excellent data quality) and non half hourly electricity (mixed data quality) are shown separately.

Table 3.3.1 - Summary table of Argyll and Bute Council carbon emissions with associated costs (source: Council records)

Source	Baseline Cost £	Cost %	Baseline Emissions CO ₂ Tonnes	CO ₂ %
Buildings Oil (non NPDO)	1,360,751	13.6%	4,888	10.9%
Buildings Gas (non NPDO)	304,776	3.0%	2,050	4.6%
Buildings HH Electricity (non NPDO)	222,955	2.2%	1,227	2.7%
Buildings NHH Electricity (non NPDO)	1,320,059	13.2%	7,267	16.3%
Buildings Oil (NPDO)	106,001	1.1%	381	0.9%
Buildings Gas (NPDO)	120,927	1.2%	813	1.8%
Buildings Electricity (NPDO)	315,278	3.1%	1,736	3.9%
Unmetered Electricity*	415,701	4.1%	3,106	6.9%
Fleet Transport	1,408,783	14.0%	3,476	7.8%
Business Travel	2,178,701	21.7%	1,617	3.6%
Waste (All Landfill)	2,274,216	22.7%	18,153	40.6%
TOTAL BASELINE	10,028,148	100%	44,714	100%

When determining the most appropriate projects to reduce carbon emissions it is vital to identify where the greatest savings may be made and to target these areas accordingly. Figure 3.3.1 below gives an overview of the carbon revised emissions for our baseline year.

Figure 3.3.1 – Revised carbon emissions by source



3.4 Conventions - Carbon Conversion Factors and Costs

3.4.1 Carbon Conversion Factors

Current advice from the Carbon Trust to Scottish Local Authorities is that Department for Energy and Rural Affairs (DEFRA) carbon conversion factors are used within Carbon Management Plans.

The targets adopted by Argyll and Bute Council within the Carbon Management Plan are voluntary and targets/performance are not specifically measured against any external benchmarks. Different Councils will have different scope in establishing a baseline position and will have different target reductions over varying timeframes.

Given that there is no mandatory convention utilised for carbon management plans and the carbon conversion factors used, it is deemed an appropriate choice for the Council to be consistent with the majority of Scottish Local Authorities. Refer to table 3.4.1 below for the convention used within this Plan.

Although DEFRA update carbon emission factors regularly there seems little to be gained by altering the figures utilised at the outset of the Programme over the course of the Programme (2009-2014). These factors are outwith the control of the Council and would confuse matters when trying to evaluate direct Council performance.

For the future, Argyll and Bute Council will utilise any conventions advocated by regulation/directive or will otherwise strive to be consistent with the majority of Scottish Local Authorities – this may or may not include conversion factors that consider Scotland and the UK independently.

Table 3.4.1 - Conventions - Carbon Conversion Factors and Costs

Source	Baseline Cost – Rates Utilised 2007/08	Baseline Cost – Rates Utilised 2011/12	Baseline Emissions – Factors Utilised	Source of Emissions Factors
Buildings Oil	£0.48/litre	£0.70/litre	0.251kg CO ₂ /kWh	www.defra.gov.uk
Buildings Gas	£0.03/kWh	£0.0275/kWh	0.185kg CO ₂ /kWh	www.defra.gov.uk
Buildings Electricity	£0.12/kWh	£0.095/kWh	0.523kg CO ₂ /kWh	www.defra.gov.uk
Unmetered Electricity*	£0.11/kWh	£0.07/kWh	0.523kg CO ₂ /kWh	www.defra.gov.uk
Fleet Transport	£0.85/litre	£1.07/litre	2.63kg CO ₂ /litre	www.defra.gov.uk
Business Travel	£0.218/km	£0.279/km	0.21kg CO ₂ /km	www.defra.gov.uk
Waste	£110/tonne	£56/tonne	447kg CO ₂ /tonne	www.defra.gov.uk

*Unmetered electricity generally consists of street lighting.

3.4.2 Costs

Energy/fuel and waste rates utilised in the revised emissions baseline have been altered to reflect current financial markets. Refer to table 3.4.1 above.

The cost to the Council for waste going to land fill is dictated by the terms of the Shanks PPP waste contract. Therefore a significant change is that the waste rate now used only reflects the value of the landfill tax element.

4. Progress to Date

Argyll and Bute Council has already carried out a number of measures which will have a real impact on its carbon footprint:

4.1 Qualitative Progress

4.1.1 Energy in Buildings (Non NPDO)

The main focus to date has been the development of large property based projects which are likely to offer higher impact in terms of achieving targets:

- Argyll and Bute Council was successful in securing Carbon Trust assistance through their Biomass Heat Accelerator (BHA) Programme which offered part funded consultancy assistance in taking the following three Oil to Biomass Heating Fuel Conversion Projects to the Outline Business Case (OBC) and Design Stage (for Kilmory Castle). The three sites involved are amongst Argyll and Bute Council's highest users of heating oil:
 - Oban High School (includes joint scheme with West Highland Housing Association (WHHA))
 - Islay High School (including Bowmore Primary School)
 - Kilmory Castle (including Nursery)

Under the BHA programme, initial feasibility work informed the preparation of Outline Business Cases which have been assessed by the Asset Management Board and were subsequently sanctioned for Capital funding in 2011/2012.

Plans to include Campbeltown Grammar School in the above list have been deferred due to the prospects of a new school build (the planned new school has a government funding condition which requires the new school to achieve a BREEAM "Excellent" rating).

- Argyll and Bute Council secured Carbon Trust assistance to fully fund consultancy services to prepare feasibility reports for the installation of a number of wind turbines at Council sites on the Isles of Tiree and Islay. The sites initially considered were:
 - Port Charlotte Primary School
 - Islay High School (including Bowmore Primary School)
 - Port Ellen Primary School
 - Keills Primary School
 - Gartbreck Waste Site
 - Tiree Primary/High School
 - Tigh a Rudha

These sites were selected because of a strong and reliable wind resource, but plans have been deferred for now because of potential planning risk. The projects will receive further consideration through the capital planning business case

process with priorities being appraised relative to other projects. This process will be further informed from the emerging Renewables Sourcing Strategy.

- Protocols have been developed to ensure that all building lighting/lamping is procured/installed to ensure good energy efficiency, long lamp life, correct comfort and design levels and achieve cost controls. This relates not only to replacement of lamps upon expiry, but also to programmed lamping replacements where existing arrangements can be improved.
- Argyll and Bute Council has had a large selection of energy audits conducted over a wide range of sites. Along with outputs from the preparation of Energy Performance Certificates (refer to Appendix E), recommendations arising offer the Council a suite of actions to reduce energy consumption.
- A range of heating projects, including the oil to gas conversions listed in Section 5, have been approved within the 2011/2012 capital programme, some already implemented.
- A number of lighting design projects, including Kilmory Castle, have been approved within the 2011/2012 capital programme.
- Staff training has been provided in conjunction with the Energy Savings Trust.

Argyll and Bute Council has supported WWF Earth Hour through publicity and the switching off of the flood lighting at the iconic McCaigs Tower in Oban.

- There are now over forty sites with building management systems (BMS) installed. This allows remote telecommunications with site heating systems enabling greater controls on fuel use. This is achieved by ensuring heating is switched off during holidays, time programmes match actual building occupancy times, temperature levels are kept within reasonable limits and seasonal heating shutdowns are implemented efficiently.
- A case for the installation of advanced meter reading (AMR) is currently the subject of an approvals process. AMR data returns will be analysed to identify and act upon inefficiencies. Customer meter readings are being encouraged and read frequencies are much improved to assist with data cleansing.
- Argyll and Bute Council continue to develop working relationships with external partners including The Carbon Trust, CARES, Islay Energy Trust, Towards Zero Carbon Bute, AliEnergy, West Highland Housing Association, Health Service, ABRA, Strathclyde University etc. A Pan Highland group has also been established and acts as a forum for like-minded organisations, including Highland Council and NHS Highland, to share carbon reduction best practice and collaborate on future joint working prospects.
- ICT initiatives reducing electricity consumption include the roll out of PC shutdown software, the ongoing procurement of less energy intensive replacement IT equipment and the programme to rationalise servers with the possibilities to reduce air conditioning needs.

- A Renewables Sourcing Strategy is currently being developed in collaboration with the Carbon Trust. Early options appraisal work has highlighted the fact that biomass projects, photovoltaic panels and larger scale wind projects currently offer the most attractive investment and/or carbon return opportunities.
- Recent re-organisation within Property Services has resulted in the resources of the Energy Team and Technical Support Team being combined to form a new 'Energy and Building Services Team'. This facilitates a more efficient use of the available staff resource/skills base and it is expected that this new Team will draw out greater opportunity within property maintenance/upgrade programmes to improve carbon effectiveness and will also drive specification in building services design to the same purpose.
- Argyll and Bute Council has set a target to reduce reliance on fossil fuels (gas and oil use in buildings) by 12% by March 2014. The planned biomass projects and a concerted effort on best practice energy efficiency projects/initiatives are expected to deliver the target reduction.

4.1.2 Energy in Buildings (NPDO)

The NPDO project is currently within the contractual 'benchmarking' period where the baseline energy consumption for the project facilities is being established. This period will end within the next year when the average energy consumption for the schools will be fixed and the Council's partner ABC Schools will take the risk on increases in energy consumption beyond the baseline level. The Council and ABC Schools are in the process of finalising an Energy Management Strategy to cover the NPDO schools in order to demonstrate their efficient operation and this strategy will include an audit of energy use at the schools and actions for reducing such use. It is expected that this Strategy will be completed and operating early in 2012.

4.1.3 Waste

There have been continued reductions in waste being landfilled over recent years.

A range of Recycling Schemes have been introduced since 2008. The landfill reductions in recent years are mainly attributed to the implementation of new recycling schemes in the Helensburgh and Lomond area and on the islands of Mull, Iona and Tiree.

The recycling schemes in the Helensburgh and Lomond area in particular have seen sharp reductions in landfill tonnages. The schemes have involved the introduction of a weekly food waste recycling service as well as the blue bin being used to recycle more waste (i.e. paper, card, plastics and cans). A bin for monthly glass collection has also been rolled out giving a wide range of kerbside recycling services in the Helensburgh and Lomond area.

On the islands of Mull, Iona and Tiree the 'blue bin' which also takes paper, card, plastic bottles and cans (plastic bottles and cans in separate bags within blue bin) also alternates each week with the mixed waste bin. These islands also have a separate smaller wheeled bin for a monthly glass collection.

4.1.4 Fleet

A new Vechtech system has improved data collection and reporting through the remote monitoring of oil tank consumption/levels. This has eliminated the use of fuels cards (data relating to Esso cards and diesel link cards could previously not be captured).

A Telematics tracking system was introduced 5 years ago, though options for the future are under consideration. There is an opportunity to build in additional monitoring for true idling (currently difficult to measure), speeding, etc. Other measures could also be incorporated to help identify fuel waste, etc. Telematic reports are currently sent to departments for their perusal and action as required.

Argyll and Bute Council expects to take delivery of a new 'Bin Lorry', with carbon benefits through the use of an electric ramp, before the end of 2011. In addition, HGV driver training was carried out in 2010. Fuel efficient driving is expected to be a positive outcome.

4.1.5 Street-lighting

The need to adopt new street-lighting installations and ensure compliance generally impacts on carbon reduction.

Initiatives to date include a small dimming trial at Dewar Avenue, Lochgilphead and some small scale projects utilising LED (light emitting diode) lamping technology to replace SON (high pressure sodium) types. Business cases are also being prepared for solar powered school traffic control signage with remote control of timings etc.

4.1.6 Business Mileage

Particularly arising from the economic climate, budgetary controls are being imposed to reduce travel expense, including staff business mileage.

Flexible working opportunities through the Workforce Deployment programme and ever expanding ICT provision of video conferencing and the use of MicroSoft Lync will reap increasing more benefits as staff become more familiar with the technology.

4.2 Quantitative Progress

4.2.1 Emissions Reduction using Full Year Data

The following table has been prepared by collating the best available data for the source sites quoted. It presents a view on emissions trends over the Carbon Management Programme. Data quality work-a-rounds have had to be adopted to allow an overall picture to be provided e.g. three scope items show no change in emissions as data availability does not permit a detailed annual breakdown.

Table 4.2.1 – CO₂ emissions to date set against required baseline target (Source: Council records)

Source	Baseline Year 2007/08		CMP Preparation 2008/09		Year 1 2009/10		Year 2 2010/11		Year 3 2011/12		Year 4 2012/13		Year 5 2013/14	
	Baseline Emissions CO ₂ Tonnes	CO ₂ %	Baseline Emissions CO ₂ Tonnes	CO ₂ %	Baseline Emissions CO ₂ Tonnes	CO ₂ %	Baseline Emissions CO ₂ Tonnes	CO ₂ %	Baseline Emissions CO ₂ Tonnes	CO ₂ %	Baseline Emissions CO ₂ Tonnes	CO ₂ %	Baseline Emissions CO ₂ Tonnes	CO ₂ %
Buildings Oil (non NPDO)	4,888	11%	5,233	12%	5,146	12%	4,582	11%	N/A	N/A	N/A	N/A	N/A	N/A
Buildings Gas (non NPDO)	2,050	5%	2,043	5%	2,136	5%	2,473	6%	N/A	N/A	N/A	N/A	N/A	N/A
Buildings NHH Electricity (non NPDO)	7,267	16%	7,267	17%	7,267	17%	7,267	18%	N/A	N/A	N/A	N/A	N/A	N/A
Buildings HH Electricity (non NPDO)	1,227	3%	1,242	3%	1,252	3%	1,262	3%	N/A	N/A	N/A	N/A	N/A	N/A
Buildings Oil (NPDO)	381	1%	381	1%	341	1%	376	1%	N/A	N/A	N/A	N/A	N/A	N/A
Buildings Gas (NPDO)	813	2%	813	2%	887	2%	855	2%	N/A	N/A	N/A	N/A	N/A	N/A
Buildings Electricity (NPDO)	1,736	4%	1,736	4%	1,790	4%	1,848	4%	N/A	N/A	N/A	N/A	N/A	N/A
Unmetered Electricity*	3,106	7%	3,106	7%	3,106	7%	3,106	8%	N/A	N/A	N/A	N/A	N/A	N/A
Fleet Transport	3,476	8%	3,476	8%	3,476	8%	3,476	8%	N/A	N/A	N/A	N/A	N/A	N/A
Business Travel	1,617	4%	1,643	4%	1,573	4%	1,442	4%	N/A	N/A	N/A	N/A	N/A	N/A
Waste (All landfill)**	18,153	41%	17,016	39%	15,080	36%	14,415	35%	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL BASELINE	44,714	100%	43,956	100%	42,054	100%	41,102	100%	N/A	N/A	N/A	N/A	N/A	N/A
REQUIRED BASELINE TARGET	N/A		N/A		43,266		41,818		40,377		38,070		35,771	

4.2.2 Emissions Reduction using Tangible Project Data

The tangible savings attributed to individual projects and initiatives delivered to date are detailed in Section 5.2. The use of tangible savings is a means of demonstrating positive activity within the Carbon Management Programme which might otherwise be obscured by poor data quality issues. A combination of specifically measured data or business case calculated data are used to evaluate tangible savings.

The tangible savings forecasted for planned/funded and proposed projects are detailed in Sections 5.3 and 5.4.

Table 4.2.2 below has been prepared to offer demonstration of the tangible carbon savings secured to date. These savings are shown against projected interim carbon reduction targets to ensure 2014 targets are achieved.

Table 4.2.2 – CO₂ emissions targets compared to implementation of tangible Projects (Source: Council records)

	Baseline Year 2007/08	CMP Preparation 2008/09	Year 1 2009/10	Year 2 2010/11	Year 3 2011/12	Year 4 2012/13	Year 5 2013/14
Emissions CO ₂ (Tonnes)							
Revised Baseline Emissions	44,714	N/A	N/A	N/A	N/A	N/A	N/A
Target Reduction	N/A	N/A	1448	2896	4337	6644	8943
Completed Tangible Projects	N/A	N/A	1928	3857	3890	N/A	N/A
Proposed Tangible Projects	N/A	N/A	N/A	N/A	1086	1342	0
Tangible Projects Gap Analysis			480	961	639		

4.2.3 Reducing Reliance on Fossil Fuels using Tangible Project Data

Argyll and Bute Council has set a target to reduce reliance on fossil fuels (gas and oil use in buildings) by 12% by March 2014. The availability of renewable heat provision from the planned biomass projects and a concerted effort on best practice energy efficiency projects/initiatives are expected to deliver the target reduction.

Table 4.2.3 has been prepared to demonstrate the tangible fossil fuel reductions secured to date. These reductions are shown against projected interim fossil fuel reduction targets to ensure 2014 targets are achieved.

Table 4.2.3 – Fossil fuel reduction targets compared to implementation of tangible Projects (Source: Council records)

	Baseline Year 2007/08	CMP Preparation 2008/09	Year 1 2009/10	Year 2 2010/11	Year 3 2011/12	Year 4 2012/13	Year 5 2013/14
	kWh						
Revised Baseline kWh - Fossil Fuels	36,433,721	N/A	N/A	N/A	N/A	N/A	N/A
Target Reduction	N/A	N/A	874,409	1,748,819	2,623,228	3,497,637	4,372,047
Completed Tangible Projects	N/A	N/A	99,602	99,602	99,602	N/A	N/A
Proposed Tangible Projects	N/A	N/A	N/A	N/A	4,004,409	2,944,359	0
Tangible Projects Gap Analysis			-774,807	-1,649,217	1,480,783		

5. Carbon Management Projects

This section contains a summary of those projects which will contribute to Argyll and Bute Council carbon reduction targets over the lifetime of the current Carbon Management Plan. It includes projects which are complete, underway or planned and those with future prospects.

5.1 Rationale for project identification

The following points offer a summary of the key points arising from an assessment of the revised emissions baseline (refer to Table 3.3.1 and Figure 3.3.1):

- Building energy use accounts for 42% of the baseline CO₂ emissions.
- Building heating systems represent a large portion of buildings energy use.
- Heating oil represents 12% of the emissions baseline.
- Electricity use in Buildings accounts for 23% of the emissions baseline and when added to electric use by street-lighting, this figure rises to 30%.
- **Business mileage accounts for only about 4% of the emissions baseline, but accounts for 22% of the overall baseline financial cost.**
- Fleet fuel use accounts for only about 8% of the emissions baseline, but accounts for 14% of the overall baseline financial cost.
- Municipal waste accounts for 41% of the emissions baseline

In project terms, this suggests the following items focus the Council's attention:

- Conduct assortment of building energy efficiency projects.
- Focus on efficient control of heating systems
- Focus on energy efficient heating plant and equipment
- Reduce heat losses from pipes and building fabric
- Convert wet heating systems fuel type from oil/electric to Biomass/gas.
- Consider electric generation opportunities.
- Reduce business mileage (financial case strong).
- Initiatives to reduce fleet fuel use
- Waste reduction initiatives

Furthermore, the issue of security of fuel supply is considered to be important. Continued use of fossil fuels maintains a reliance on a diminishing resource and the basic economics of supply and demand will presumably drive pricing levels to uneconomic (or unsustainable) levels.

For Argyll and Bute Council, this focuses attention on our ongoing use of heating oil and gas. Oil to gas fuel conversions have already been undertaken and continue to remain viable as these fairly straightforward projects offer a carbon saving of around 25% and a quick return on investment. Although electricity generation on the National Grid is heavily reliant on fossil fuels, it is believed that the Grid electricity mix could gradually move to alternative fuel sources e.g. greater reliance on hydro, renewable and nuclear power.

As can be concluded from the government's investment programmes, biomass is clearly regarded to be a 'fuel for the future'. The creation of the Renewable Heat Incentive (RHI) programme by the UK government and the Carbon Trust's substantial investment in their Biomass Heat Accelerator programme serve as example of the importance of biomass solutions. The geography of Argyll and Bute suits biomass because of the presence of large numbers of convertible oil fired sites (offering a move from an expensive, 'dirty' fuel) and because it is a cheap, plentiful, locally sourced and sustainable option, which also provides the local economy with economic, social and environmental benefit.

The financial and staffing resource required to deliver the Carbon Management Programme is considerable. In terms of project priorities, it is important to try to identify those projects that offer both a solid reduction in carbon emissions whilst offering as short a payback as possible. Likewise, staffing resources are finite and it will be necessary to identify those projects that offer a solid reduction in carbon emissions that can be delivered by the human resources available.

Therefore, the projects within the Plan have generally involved 'economies of scale'.

Additional considerations which can influence the priority of any particular project include the following:

- Where short term capital investment would be required in any event, due to plant/equipment etc approaching the end of their natural/useful life cycle.
- To address key drivers associated with the CRC Energy Efficiency Scheme or other appropriate legislation if extended to include Argyll & Bute Council.
- Availability and accessing of grant funding or other incentives e.g. many projects could conceivably benefit from 100% feasibility funding from organisations such as the Carbon Trust. **Government incentive programmes such as Feed in Tariffs (FIT) and the Renewable Heat Incentive (RHI) present opportunities to recover project investment costs on account of incentive income streams over a period of up to 25 years.** Windows of opportunity can sometimes be time limited and so ability to react quickly is important.
- Opportunity to design in long term energy saving and carbon reduction solutions within "new build" and property upgrade projects.

While there will be a few exceptions to the rule e.g. experimentation with new technologies to offer learning/curricular opportunities and to inform future business cases, the fundamental criteria which will be used to determine project priority are: Impact, Affordability, and Deliverability & Risk.

In terms of IBC and OBC evaluation, the availability of supportive funding will significantly affect the viability of projects.

Sections 5.2 through 5.5 contain summaries of those projects which will help us meet our carbon reduction targets over the lifetime of our plan (to March 2014). It includes projects which are delivered, planned/funded, proposed or merely notional. As the document shall be 'live', further projects will be added over the life of the plan.

5.2 Delivered Projects

Table 5.2 Delivered Projects (source: Council records)

Ref	Project	Lead	Funding Source	Cost £		Annual Saving		Payback Years	% CO ₂ of Target	Year
				Capital	Revenue	Financial £	CO ₂			
BC66	Waste – improved recycling schemes on Mull, Iona and Tiree including improved kerbside collections.	Alan Millar	tbc			tbc	3738	tbc	41.80%	Ongoing
BC67	Waste – improved recycling schemes in the Helensburgh and Lomond area – including food waste recycling and improved kerbside collections.	Alan Millar	tbc			tbc	Included Above	Included Above	Included Above	Ongoing
BC1	Rothesay Pool – Oil to gas fuel conversion	Paul Gillies	CEEF		38,922	5,658	33	6.9	0.37%	2009/10
BC2	Thomson Home – Oil to gas conversion with condition upgrade and improved zoning	Paul Gillies	Capital	130,000		7,000	40	18.6	0.45%	2010/11
BC50	Dalintober Primary School - Oil to gas conversion with boiler upgrades	Paul Gillies	Capital	85,000		4,866	23	17.5	0.26%	2011/12
BC30	Street-Lighting dimming trial (Dewar Avenue, Lochgilphead)	Ryan McGlynn	tbc			tbc	2	tbc	0.02%	tbc
BC60	Rothesay Community Education Centre – Electric to Gas Heating Conversion	Willie Luke	Capital	9,000		1,200	7	7.5	0.08%	2009/10

Table 5.2 Delivered Projects Continued

Ref	Project	Lead	Funding Source	Cost £		Annual Saving		Payback Years	% CO ₂ of Target	Year
				Capital	Revenue	Financial £	CO ₂			
BC61	Toward Primary School – Installation of pv system*	Paul Gillies	Utility Fund		1,000	825	4	1.2	0.04%	2009/10
BC62	Drumlemble Primary School – Installation of pv system*	Paul Gillies	Utility Fund		1,000	825	4	1.2	0.04%	2008/09
BC63	Castlehill PS – Installation of TRV's	Paul Gillies	CEEF		8,300	648	12	12.8	0.13%	2009/10
BC63	Drumlemble PS - Installation of TRV's	Paul Gillies	CEEF		1,400	108	2	13.0	0.02%	2009/10
BC63	Hermitage PS - Installation of TRV's	Paul Gillies	CEEF		7,400	595	11	12.4	0.12%	2009/10
BC64	Rothesay Campus – Installation of pv system*	David Logan	NPDO		1,000	825	4	1.2	0.04%	2009/10
BC65	Campbeltown Former Registrars Office - Electric to gas heating fuel conversion	Paul Gillies	Capital	30,000		3,000	10	10.0	0.11%	2011/12
	TOTAL DELIVERED PROJECTS			254,000	59,022	25,550	3,890		43.50%	

*photo-voltaic projects substantially grant funded

Key:

- *Reference – a unique reference for reporting purposes that corresponds to the project.*
- *Project - short title for the project.*
- *Lead – the individual or team that will lead/own the project.*
- *Cost £ – total implementation cost (includes project fees if applicable).*
- *Funding Source – details the funding source which then determines whether capital or revenue investment.*
- *Annual savings – financial (£) and CO₂ (tonnes)*
- *Payback (years) – the overall implementation cost divided by the annual saving.*
- *% of target – the percentage of your CO₂ saving target that this project will annually contribute.*
- *Year – the first financial year this project will begin to deliver a CO₂ saving.*

5.3 Planned/ Funded Projects

Table 5.3 Planned/Funded Projects (source: Council records)

Ref	Project	Lead	Funding Source	Cost £		Annual Saving		Payback Years	% of CO ₂ Target	Year
				Capital	Revenue	Financial £	CO ₂			
	Argyll House, Dunoon - Oil to gas heating fuel conversion	Paul Gillies	Capital	55,000		6,782	10	8.1	0.11%	2011/12
	Lorn House, Oban - Oil to gas heating fuel conversion	Paul Gillies	Capital	35,000		3,175	5	11.0	0.06%	2011/12
	Kintyre CEC, Campbeltown - Oil to gas heating fuel conversion	Paul Gillies	Capital	100,000		9,500	15	10.5	0.17%	2011/12
	Riverside Pool, Dunoon - Replacement of pool air handling unit	Paul Miller	Capital	90,000		15,980	103	5.6	1.15%	2011/12
	Oban High School - Oil to biomass heating fuel conversion	Paul Miller	Capital	481,455		74,480	330	6.5	3.69%	2011/12
	Islay HS/Bowmore PS - Oil/Electric to biomass heating fuel conversion	Paul Gillies	Capital	510,370		66,741	300	7.6	3.35%	2011/12
	Kilmory Castle/Nursery - Oil to biomass heating fuel conversion	Paul Gillies	Capital	483,000		46,891	219	10.3	2.45%	2011/12
	Argyll House, Dunoon - Lighting Upgrade	Colin MacDonald	Capital	25,000		1,500	8	16.7	0.09%	2011/12
	Kilmory Castle - Lighting Upgrade	Colin MacDonald	Capital	40,000		3,000	16	13.3	0.18%	2011/12
	Installation of Solar Photovoltaic Panels - Unspecified sites	Paul Gillies	Utility Fund		200,000	20,000	80	10.0	0.89%	2011/12
	TOTAL PLANNED/FUNDED PROJECTS			1,819,825	200,000	248,049	1,086		12%	

5.4 Proposed Projects

Table 5.4 Proposed Projects - Information provided subject to options appraisal/business case development (source: Council records)

Ref	Project	Lead	Funding Source	Cost £		Annual Saving		Payback Years	% of CO ₂ Target	Year
				Capital	Revenue	Financial £	CO ₂			
	Improved BMS and controls monitoring (range of premises); consider use of alarms for exceptions		CEEF		20,000	20,000	50	1.0	0.56%	2012/13
	Aqualibrium, Campbeltown - Installation of Pool Cover		Capital	30,000		3,000	10	10.0	0.11%	2012/13
	Aqualibrium, Campbeltown - Improvements to operation of biomass/gas heating system		Capital	75,000		5,000	10	15.0	0.11%	2012/13
	Tarbert Academy - Oil to biomass heating fuel conversion		Capital	400,000		26,500	136	15.1	1.52%	2012/13
	Lochgilphead Campus (NPDO) - Oil to biomass heating fuel conversion		Capital	450,000		56,250	376	8.0	4.20%	2012/13
	Queens Hall, Dunoon - Oil to gas heating fuel conversion		Capital	40,000		4,000	24	10.0	0.27%	2012/13
	Hermitage PS, Helensburgh - Oil to gas heating fuel conversion		Capital	40,000		4,000	24	10.0	0.27%	2012/13
	John Logie Baird PS, Helensburgh - Oil to gas heating fuel conversion		Capital	40,000		4,000	24	10.0	0.27%	2012/13
	Rothesay SW Office - Oil to gas heating fuel conversion		Capital	30,000		3,000	10	10.0	0.11%	2012/13

Table 5.4 Proposed Projects Continued

Ref	Project	Lead	Funding Source	Cost £		Annual Saving		Payback Years	% of CO ₂ Target	Year
				Capital	Revenue	Financial £	CO ₂			
	Sandbank PS, Dunoon - Oil to gas heating fuel conversion and DHW improvements		Capital	50,000		5,000	15	10.0	0.17%	2012/13
	Struan Lodge HFE, Dunoon - Oil to gas heating fuel conversion		Capital	50,000		7,000	40	7.1	0.45%	2012/13
	Public Toilet - Best Practice Design Pilot		Capital	15,000		500	1	30.0	0.01%	2012/13
	Range of Energy Conservation Measures; includes lighting/lamping, conventional controls etc		Capital	100,000		10,000	100	10.0	1.12%	2012/13
	Range of Electric Heating control solutions		Capital	50,000		5,000	50	10.0	0.56%	2012/13
	Insulation programme; radiator reflectors; pipework insulation; review controls		Capital	100,000		10,000	100	10.0	1.12%	2012/13
	Insulation programme; building fabric; review controls		Capital	100,000		10,000	100	10.0	1.12%	2012/13
	Installation of Solar Photovoltaic Panels - Unspecified sites		Capital	200,000		20,000	80	10.0	0.89%	2012/13
	200kW Packaged Oil to Biomass Project - Best Practice Design Pilot		Capital	250,000		30,000	150	8.3	1.68%	2012/13
	Innellan PS, Dunoon - Wind turbine		Capital	40,000		3,000	14	13.3	0.16%	2012/13

Table 5.4 Proposed Projects Continued

Ref	Project	Lead	Funding Source	Cost £		Annual Saving		Payback Years	% of CO ₂ Target	Year
				Capital	Revenue	Financial £	CO ₂			
	Achahoish PS, Lochgilphead - Wind turbine		Capital	40,000		3,000	14	13.3	0.16%	2012/13
	Lochnell PS, Oban - Wind turbine		Capital	40,000		3,000	14	13.3	0.16%	2012/13
	AMR Implementation		tbc			tbc	tbc	tbc	tbc	2012/13
	Staff Awareness and Training Programme		tbc			tbc	tbc	tbc	tbc	2012/13
	Increase range of recycling materials that can be placed in "blue bin" (Shanks Contract)		tbc			tbc	tbc	tbc	tbc	2013/14
	TOTAL PROPOSED PROJECTS			2,140,000	20,000	232,250	1,342		15.01%	

5.5 Project Areas for Future Investigation

This table provides an area for you to include any blue sky projects which you would like to take forward but where there is currently a lack of information to give a clearer indication of the potential savings. You should instead detail the actions you need to undertake to make clear decisions in the future.

Table 5.5 Proposed Future Projects – information provided subject to options appraisal/business case development

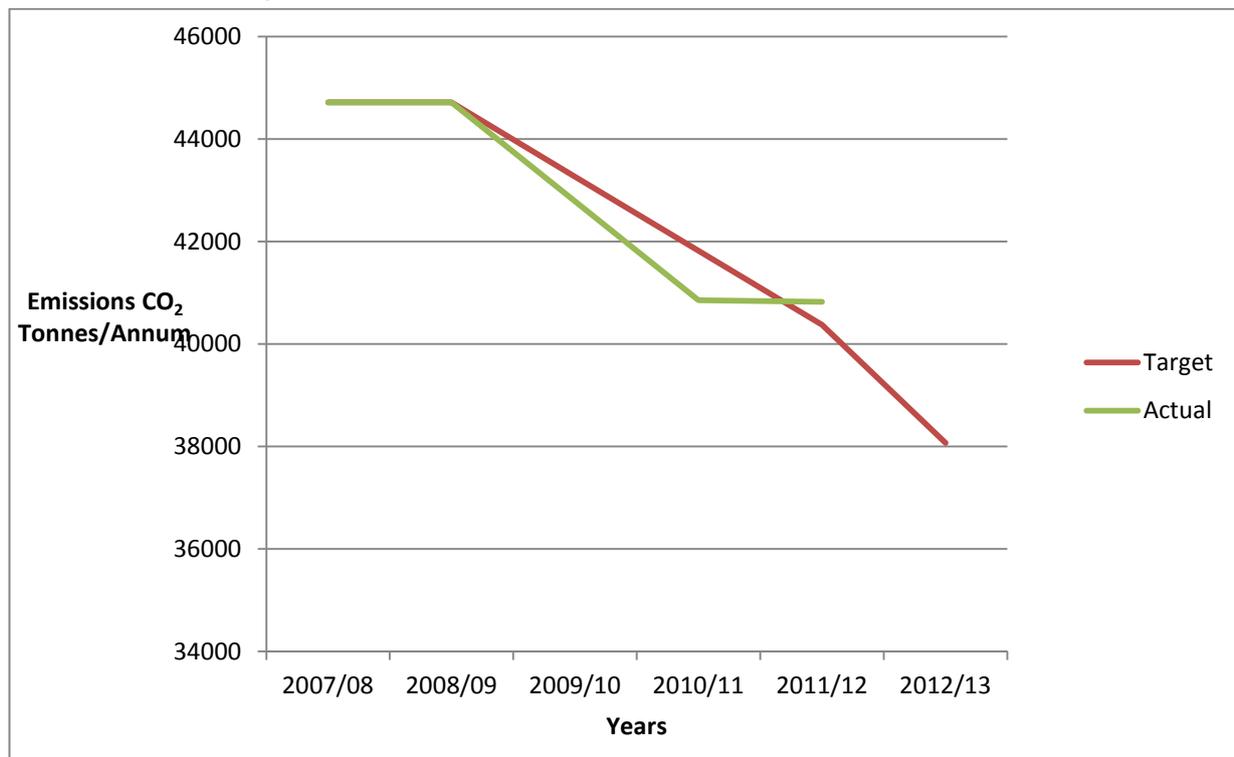
Ref	Project
	Implement food waste re-cycling schemes on Isles of Islay and Mull
	Develop package of potential biomass sites based on proposed 200kW 2012/2013 pilot scheme
	Mini/micro hydro scheme at Bishops Glen, Dunoon
	Develop options for medium scale wind projects at the undernoted waste disposal sites: <ul style="list-style-type: none"> • Glengorm, Isle of Mull • Moleigh, Oban • Dalinlongart, Dunoon
	Other opportunities across Argyll and Bute arising from development of the Renewables Sourcing Strategy

5.6 Projected achievement towards target

One of the aims of the Carbon Management Revisited Programme was to consider the gap between the savings identified and those required to meet the target for 2014.

Assessment of tables 5.2 to 5.4 suggest that the 20% target will be achieved subject to adoption and delivery of the projects quoted. This position will be further reviewed at the next Annual Progress Review in May 2012.

Figure 5.6 - the challenge of meeting the 2014 20% reduction target (Source Council Records)



It should be noted that Figure 5.6 will not include waste data for 2011/2012 until the start of financial year 2012/2013.

6. Implementation

The benefits from implementation of the Carbon Management Plan are included within this section.

Financial and staff resources are considered.

This section contains the Action Plan which will deal with the challenges that have been identified within the implementation of the Carbon Management Programme.

The success of the Carbon Management Programme will be largely related to the commitment that Argyll and Bute Council makes to the programme – in particular to the allocation of financial and staff resources underpinning the programme. The benefits of the Programme do however offer compelling reason to allocate sufficient resource to support/deliver the Programme.

6.1 Benefits of the Carbon Management Plan

The benefits are broadly listed as follows:

- Meeting the requirements of the Climate Change (Scotland) Act 2009
- Demonstrating our commitment towards protecting the environment to our staff, the public and our partners
- Widening our appeal to potential employees; demonstrating the organisation as a sustainable employer
- Reducing our potential CRC Energy Efficiency Scheme liabilities (future)
 - financial savings of a reduction in the number of allowances the organisation will need to purchase
 - Improvement in league table performance and the associated positive brand and image benefits which come with this
- Reducing revenue/overhead costs, allowing more funds to be spent on frontline services
- Management of climate change risk within the organisation

6.2 Carbon Management Plan Financing

6.2.1 Assumptions

It has been necessary to make a number of assumptions in the preparation of the Carbon Management Plan. Specific to financing of the Plan, the following assumptions should be borne in mind:

- Energy/Fuel costs are volatile. As such, the financial component of a business case can be rendered obsolete in a short space of time. The greater the project payback, then the greater the exposure will be to the risk of fluctuating prices beyond that of the energy/fuel already procured. However as prices are trending upwards (refer to the heating oil price trend in Figure 6.2.1), the long-term cost savings are likely to be maintained.

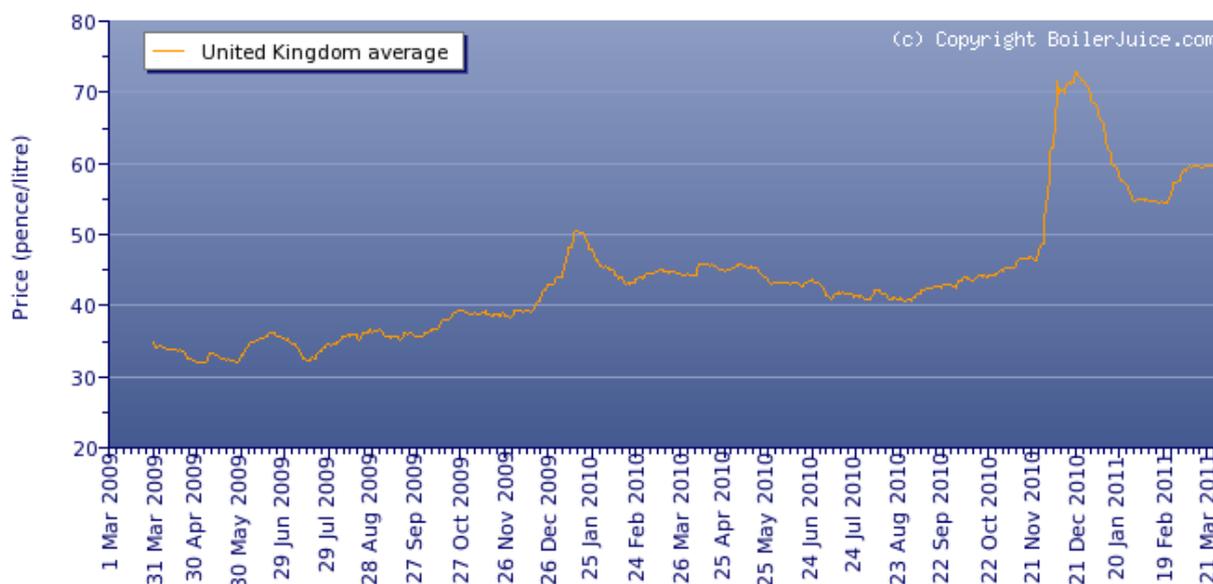


Figure 6.2.1. - Trends in heating oil prices

- For the purpose of business case evaluations, energy/fuel costs that are current at the time of the business case preparation will be used. No attempt will be made to forecast future energy trends although it is expected that the trend will continue upwards (assisting the business case).
- A number of fuel conversion projects are contained within the Carbon Management Plan. Where oil to gas conversions are proposed it is assumed that, in the longer term, oil prices will continue to exceed that of gas by an attractive margin. It should be noted that although market prices for different fuels tend to follow similar trends, situations could arise whereby both unfavourable, or favourable differentials could arise.
- Not all projects quoted within this plan will be viable. All will be subject to business case development and approvals.

- Argyll and Bute Council will be able to access Feed-in-tariffs (FIT's) and Renewable Heat Incentive (RHI) for the duration of the current scheme proposals (i.e. up to 25 years depending on technology types) in order that project financial benefits can be realised.
- Argyll and Bute Council current capital funding mechanisms remain in place with little or no reduction in the financial allocation.
- The plan is expected to be largely self-financing in the earlier stages of implementation.
- It is presumed that energy costs will rise significantly above inflation over the life of the plan.

6.2.2 Financial Commitment

Carbon reduction initiatives can be financed from both revenue and capital funding streams.

Larger projects will generally require a capital funding allocation. Argyll and Bute Council cannot guarantee specific sums that should be allocated to carbon reduction projects, but can offer assurances that project proposals will all be given due consideration within the capital approvals process.

For each initiative a business case must be produced which demonstrates an acceptable return on the investment made, based on a whole lifecycle approach. Initiatives will be prioritised based on the content of business cases and the funding available.

6.3 Staff Resource Commitment

Based on the original Plan it was suggested that two to three members of professional staff time would be required to deliver the specific projects within the programme.

Existing personnel may be able to absorb project works into their existing activity, but it is recognised that the Council will have to procure technical skills and resource capacity.

As the Council does not possess the full extent of the requisite experience, technical expertise and staff capacity required, it is envisaged that the Council must establish what external Technical and Project Management resource it will require to assist with the development of projects from Feasibility through to IBC/OBC stage, and then if approved, through the construction phase to project handover.

The success with which the Programme is being delivered will likely be indicative of any requirement for additional staff time to be allocated.

6.4 Risk Register

The Carbon Management Project Team will maintain a Programme Risk Register and Issues Log which will be updated within the Annual Progress Review. The Programme Risk Register for 2011 is at Appendix C.

6.5 Annual Progress Review

The Carbon Management Project Team will produce an Annual Progress Review for consideration by the Asset Management Board, SMT. Environment PPG as set out within the Governance, Planning and Budget Cycle identified at Section 7.2.

6.6 Action Plan

The Action Plan below pinpoints the **key** challenges currently needing addressed within the overall Carbon Management Programme. It is not intended to be demonstrative of all the project tasks.

Action Plan - Carbon Management Plan Update 2011

Ref	Outcome	Actions to achieve outcome	Success measures	Key dates	Lead
Data Quality					
1.	Improvements to non half hourly (NHH) buildings electric data quality	<ul style="list-style-type: none"> Place control measures on Utility Supplier(s) including Action Plan and monitoring regime; review service level(s) etc. Conduct remaining site surveys of electric metering including photographs. Energy Assistant key objective until position resolved (largest consuming sites to be prioritised) Installation of AMR (subject to approvals) 	<ul style="list-style-type: none"> 75% of consumption is data verified. 95% of consumption is data verified. 	<ul style="list-style-type: none"> March 2012 March 2013 	Paul Gillies
2.	Improvements to street lighting electric data	Update unmetered inventory with annual revision	Unmetered inventory 100% complete	March 2014	Ryan McGlynn

Action Plan Continued

Ref	Outcome	Actions to achieve outcome	Success measures	Key dates	Lead
Embedding					
3.	Behavioural change platform established	<ul style="list-style-type: none"> • Collaboration with Carbon Trust raising awareness programme(s) • Establish behavioural working group. • Establish Communication strategy (including raising awareness etc campaign) 	<ul style="list-style-type: none"> • Behavioural working group established • Communications Strategy (including Training, Awareness Raising Campaign etc) prepared and approved • Graduation from Carbon Trust programme(s) 	March 2013	Paul Gillies; Communications; HR; Audrey Martin (AliEnergy)
4.	Informed and engaged workforce	<ul style="list-style-type: none"> • Implement Communication Strategy 	<ul style="list-style-type: none"> • Customer survey • General utility consumption trends dropping, recycling trends increasing etc 	Ongoing	Paul Gillies; Communications; HR; Audrey Martin (AliEnergy)
Shared Working					
5.	Identification of joint working opportunities (e.g. biomass heat map, common Carbon Management Plan, behavioural change programme)	<ul style="list-style-type: none"> • Identify and make contact with potential partners • Share intentions/plans 	<ul style="list-style-type: none"> • Network established for information sharing/integration • Agree list of potential shared projects or initiatives 	<ul style="list-style-type: none"> • August 2012 • Ongoing 	Paul Gillies
Succession Planning					
6.	Preparation of Carbon Management Plan/programme beyond 2014 (ref also shared working)	<ul style="list-style-type: none"> • Repeat preparation cycle of previous plans with additional consideration to shared working • Confirm modifications to emission baseline scope and conversion factors to be used. 	Completion of Carbon Management Plan (2014+)	April 2014	Paul Gillies
7.	Awareness of new national policy/directives or amendments to existing; with a view to compliance and forward planning	<ul style="list-style-type: none"> • Research relevant legislation • Report findings and offer recommendations 	Reports submitted	Ongoing	Paul Gillies

Action Plan Continued

Ref	Outcome	Actions to achieve outcome	Success measures	Key dates	Lead
8.	CRC Energy Efficiency Scheme preparation/readiness.	<ul style="list-style-type: none"> Research relevant legislation Report findings and offer recommendations 	Reports submitted	March 2012 or as required	Paul Gillies
Resource					
9.	Waste reduced from Public Buildings; ref also embedding.	<ul style="list-style-type: none"> Appoint responsibilities. Identify and implement waste reduction initiatives 	<ul style="list-style-type: none"> Before/after waste audits measured implemented. Waste collection reductions (cost savings) 	March 2012	Malcolm MacFadyen/SMT
10.	Reduce Business Mileage (including Ferry, Air, etc. travel expense); ref also embedding.	<ul style="list-style-type: none"> Appoint responsibilities. Budget controls to be set and communicated. 	Reduce staff mileage and travel expenses (factoring in increasing costs of travel).	March 2012	Malcolm MacFadyen/SMT
11.	Sufficient staff resource engaged to deliver energy conservation projects and initiatives.	Energy and Building Services Team Staff resource to be evaluated.	Evaluation completed and any additional resource needs addressed.	March 2012	Malcolm MacFadyen
Renewable Sourcing Strategy					
12.	Develop clarity on the optimum renewables technologies to implement .	Conduct option appraisal of technologies.	Appraisal completion	October 2011 (complete)	Paul Gillies
13.	Determination of the optimum renewable procurement options/models and identification of good projects.	Develop renewables sourcing strategy including review of assets for renewables potential.	Renewable Sourcing Strategy completion including identification of a package of potential projects (via desktop and site survey work)	August 2012	Paul Gillies
14.	Maximise access to renewable implementation incentives (FIT/RHI).	Implementation of renewable projects during windows of opportunity.	Project(s) delivery and RHI/FIT income secured	Ongoing	Paul Gillies

7. Governance for Implementation

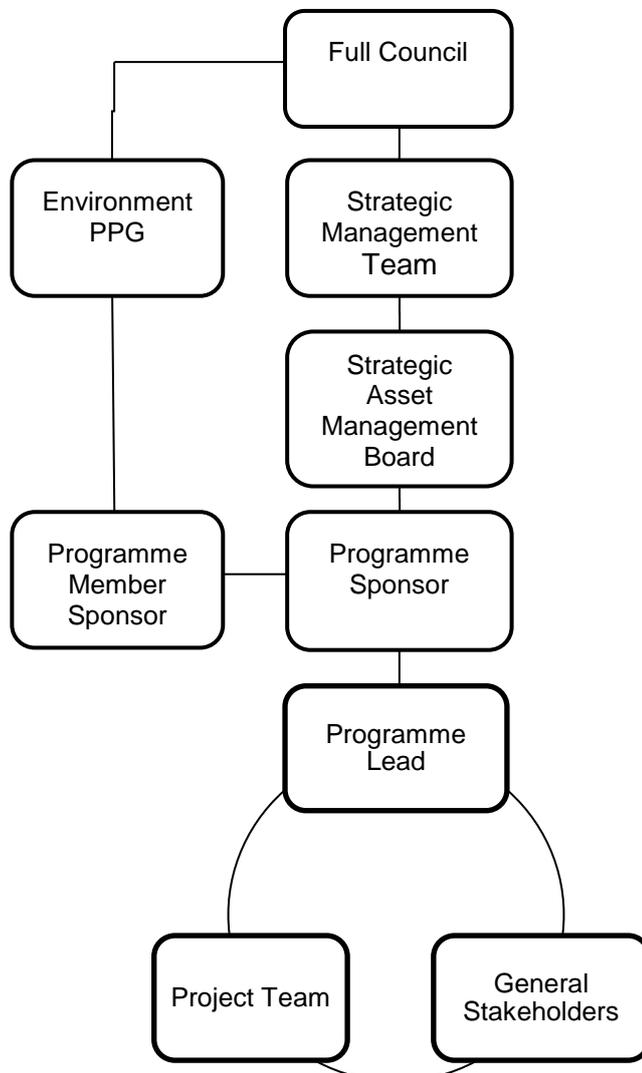
This section details how the Carbon Management Plan is being managed within Argyll and Bute Council.

Appendix A depicts the extent to which carbon management has become embedded within the Council's day to day activities and Appendix B includes a draft internal communications strategy which could form the basis for influencing behaviour across the Council.

7.1 Carbon Management Structure

The Carbon Management Programme governance and management structure is depicted in Figure 7.1 below. This structure has evolved slightly since the adoption of the initial Carbon Management Plan, in which time there has been some service reorganisation within the Council. The most significant change within the Carbon Management Programme has been stronger links with the activities of the Strategic Asset Management Board which helps to ensure that the potential carbon impact of proposed projects is taken into account when assessing projects for inclusion within the Capital Plan via the business case gateway process.

Figure 7.1 – Carbon Management Governance and Management Structure



Programme Member Sponsor – Chair of Environment PPG

Programme Sponsor – Head of Facility Services

Programme Lead – Energy and Building Services Performance Manager

In addition to the above, the **Project Team** includes key staff from the following disciplines:

- Waste Management
- Property Services
- Fleet Management
- Street-lighting
- Business Travel
- Procurement
- Information & Computing Technology
- Strategic Finance
- Communications
- Special Projects Team (NPDO sites)

Input from other specialist staff will be called upon from time to time.

- *It has been recognised that the Council's carbon management process could be further enhanced through the deployment of staff members to take the lead on reducing waste arising from Council premises (this is a component of the eco-schools programme currently) and in terms of business miles reduction.*

General Stakeholders are wide-ranging and include:

- Site Managers
- General Staff
- Behavioural Working Group (Future)
- Community Partners/Partners (e.g. NHS, Housing Associations, AliEnergy etc)
- Support/Funding Agencies (e.g. Carbon Trust)
- Service Providers
- General Public

In delivering the Council's Carbon Management Plan consideration is given to succession planning. No personnel are identified by name, so should key personnel leave the Council, their roles will be filled by the new post-holder or staff working in the relevant area of expertise.

7.2 Strategic Ownership and Oversight

Figure 7.2 depicts an updated Governance, Planning, Performance Management and Budget Cycle, aligned to the business gateway process employed for capital planning, which will support the continuation of the Carbon Management Programme. This cycle

will ensure that Carbon Management continues to be embedded within the Council's budget and reporting calendar and remains as routine as the annual Corporate and Service Planning and associated budget process. Key features:

- Project options appraisals (annual)
- Project business case development (annual)
- Project capital bids (annual); to suit budget cycle
- Annual Progress Review; for consideration by the Asset Management Board, SMT, Environment PPG and Council Executive.
- Project Team meetings (biannually)
- Pyramid performance management reporting (quarterly)
- Project execution/coordination (ongoing)
- Ongoing dialogue with the Programme Member Sponsor

Figure 7.2 Carbon Management Programme - Governance, Planning, Performance Management and Budget Cycle

Action	Lead Officer	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Programme Execution (Year 3)	Project Lead	Carbon Management Programme (Year 3 - 2011/2012)											
Pyramid Reporting	Project Lead												
Asset Management Board	Project Sponsor	Asset Management Board (Monthly)											
CM Revisited	Project Lead												
CM Revisited Approvals	Project Sponsor												
Programme Team Meeting	Project Lead												
Sponsors/Prog Lead Meeting	Project Sponsor												
Options Development for Yr4	Project Team												
Business Case Development for Yr4	Project Team												
Business Case Assessment/Scoring for Yr4	Asset Mgt Board												
Council Budget Approval of Carbon Management Bids	Project Sponsor												
Programme Execution (Year 4)	Project Lead	Carbon Management Programme (Year 4 - 2012/2013)											
Pyramid Reporting	Project Lead												
Asset Management Board	Project Sponsor	Asset Management Board (Monthly)											
Annual Progress Review Report prepared by Programme Team	Project Lead												
Annual Progress Review Report submitted to SMT, Environment PPG and Council Executive	Project Sponsor												
Programme Team Meeting	Project Lead												
Sponsors/Prog Lead Meeting	Project Sponsor												
Options Development for Yr5	Project Team												
Business Case Development for Yr5	Project Team												
Business Case Assessment/Scoring for Yr5	Asset Mgt Board												
Council Budget Approval of Carbon Management Bids	Project Sponsor												
Programme Execution (Year 5)	Project Lead	Carbon Management Programme (Year 5 - 2013/2014)											
Pyramid Reporting	Project Lead												
Asset Management Board	Project Sponsor	Asset Management Board (Monthly)											
Annual Progress Review Report prepared by Programme Team	Project Lead												
Annual Progress Review Report submitted to SMT, Environment PPG and Council Executive	Project Sponsor												
Programme Team Meeting	Project Lead												
Sponsors/Prog Lead Meeting	Project Sponsor												
Options Development for Yr6	Project Team												
Business Case Development for Yr6	Project Team												
Business Case Assessment/Scoring for Yr6	Asset Mgt Board												
Council Budget Approval of Carbon Management Bids	Project Sponsor												
CM Next Stage Review	Project Sponsor												
Programme Execution (Year 6)	Project Lead	Carbon Management Programme (Year 6 - 2014/2015)											
Pyramid Reporting	Project Lead												
Annual Progress Review Report prepared by Programme Team	Project Lead												
Annual Progress Review Report submitted to SMT, Environment PPG and Council Executive	Project Sponsor												

7.3 Project Delivery

The Programme Lead and Project Team members have ownership of the carbon reduction elements relating to their own area of expertise. The Programme Lead will organise and chair biannual meetings of the Project Team and encourage regular communication exchange during the interim periods.

The Project Team has responsibility for:

- Execution of the Carbon Management Programme including the delivery of projects.
- Performance reporting (through Pyramid, the Council's Performance Management System).
- Options appraisal and business case development.
- Annual Progress Review.
- General stakeholder engagement.

The management of the stakeholders will be vital to ensure that carbon management is embedded in the culture of the organisation

The Project Team are pivotal in identifying and communicating with Council staff. The composition of the group covers all the services that have responsibility for buildings, waste, street-lighting and fleet vehicles as well as key officers with a cross-service remit e.g. finance, ICT, asset management and energy management.

The Project Team review the composition of the group periodically to ensure key personnel and services continue to be engaged with the process.

7.4 Embedding Carbon Management

The Carbon Management Embedding Matrix at Appendix A provides an assessment of how firmly Carbon Management is embedded within Council Services. There are seven component areas which collectively demonstrate the extent to which carbon management has been embedded within an organisation:

- Corporate Strategy
- Programme Management
- Responsibility
- Data Management
- Communications and Training
- Finance and Investment
- Policy Alignment

The matrix contains an appraisal of the position at the development stage of the Carbon Management Programme (2008), the current position and the expected position at the end of the Programme (March 2014). The appraisal was prepared by self-assessment under Carbon Trust guidance. Table 7.4 below provides a numerical score, or rating, for each of the seven component areas of the matrix:

Table 7.4 – Numerical Assessment - Embedding

Year	Corporate Strategy	Programme Management	Responsibility	Data Management	Comms & Training	Finance & Investment	Policy Alignment
2008	3	3	3	3.5	2	3.5	2
2011	4	3	3	3.5	2.5	4	3
2014	4.5	4.5	4	4.5	4	4.5	4

Scoring is ranked 0 to 5, where 5 depicts the highest maturity. The 2014 values in red text are indicative of the expected position in 2014.

It was stated in the original Carbon Management Plan that, despite a fairly late start for Argyll and Bute Council on the carbon reduction journey, the initial assessment was very encouraging. There has been further progress, most notably in the areas of **Corporate Strategy**, **Policy Alignment** and **Finance & Investment** whereby the Carbon Management Programme has benefitted from the Councils' governance of the Capital Programme. Business cases for projects with carbon reduction benefits have 'scored' well and have been promoted through the Asset Management Board for inclusion in the Capital Programme.

Based on the matrix, and from findings elsewhere in the Carbon Management Plan, it is likely that two key actions will make significant contribution to embedding carbon management within the Council:

- The implementation of a concerted effort to influence behaviour through **Communications and Training**.
- A determined effort to tackle the remaining **Data Management**/quality issues which will permit improved **Programme Management** and performance management.

The (red) vertical arrows in the Carbon Management Embedding Matrix at Appendix A are indicative of the areas requiring greatest attention to embed the carbon management culture deeper into the activities of Argyll and Bute Council. The seven component areas within the Embedding Matrix are covered in more detail in sections 7.4.1 through 7.4.7.

7.4.1 Corporate Strategy – embedding CO₂ saving across your organisation

There have been updates to the Council's Corporate Plan since the Carbon Management Plan was originally adopted, though the need to tackle climate change and environmental issues generally remains integral to the Council's planning.

The importance of the Carbon Management Programme to the Council is borne out by the fact that two of the corporate outcomes relate specifically to the Carbon Management Programme.

The Carbon Management Sponsor is responsible for taking forward and developing mechanisms to embed CO₂ savings within the wider Council through the Carbon Management Programme. This includes:

- Exploring the establishment of Departmental and Service targets:
 - Quantifiable carbon savings
 - Embedding actions

7.4.2 Programme Management – bringing it all together effectively

Programme Management, Governance and the Budget Process are covered in Sections 7.1 to 7.3 of this Plan.

7.4.3 Responsibility – being clear that saving CO₂ is everyone's job

In introducing and implementing the Carbon Management Plan, the Programme Member Sponsor, the Programme Sponsor and the Programme Lead are responsible for both raising the Council's awareness of issues and risks related to climate change and for ensuring that Members consider the requirement to tackle climate change within the development of the Corporate Plan.

The Council's long term success in tackling climate change will be linked directly to its ability to embed responsibility and commitment across the Council at all levels.

Whilst 'saving CO₂ is everyone's job', a focus needs to be placed upon identifying key staff members who have responsibilities for the day to day operation of assets (e.g. property, vehicles etc) and who can effect greater carbon savings reductions. Examples of key staff will be Janitors, Caretakers, Leisure Duty Officers and HGV drivers. A programme of energy efficiency training has already been undertaken for Janitors, Caretakers and Leisure staff and HGV driver training has been conducted.

The development of an effective Communication & Training Plan is covered within Section 7.4.5.

7.4.4 Data Management – measuring the difference, measuring the benefit

The availability of quality data is fundamental for:

- Assessment of baseline position (past, present, future)
- Trend analysis
- Assessment of success of carbon reduction measures
- Identification of areas of weakness (e.g. use of benchmarking)
- Exception/problem identification
- Supporting business case development
- General performance management
- Reporting progress
- Evidencing/audit

The particular data streams which form Argyll and Bute Council's emissions baseline are detailed in Table 3.3.1.

The availability and quality of some data streams has presented difficulties within the programme. The original emissions baseline was based on the best available information at the time (developed through 2008/2009). It has become clear that the launch of the original Carbon Management Plan in 2009 was at a point when certain data streams lacked maturity.

Though quality of data has been improving, not all the issues have been resolved. An assessment of the position is as follows:

Energy and Building Services Team

Buildings Oil – data reasonable and improving; annual oil use is projected based on bulk deliveries of oil from invoicing. Consumption is not metered so wrong profiling of bulk deliveries could lead to consumption being shown in one year rather than in another.

Buildings Gas – data very good; annual gas use is derived from invoicing and customer meter reads.

Buildings Half Hourly Electricity (Sites with greatest electric loads >100kW) – data excellent; half hourly data available on-line.

Buildings Non Half Hourly Electricity (all sites <100kW) – data, which is based on invoices and some meter reads is mixed; some site data is very good and some is very poor. An alarming quantity of data quality issues (electric invoices not consistent with site metered installation) have been uncovered during data cleansing. Limited staff resource has been further bogged down in tackling the onerous issues arising therefore with the utility providers. The overall consumption position will not be known until the majority of data issues are resolved.

Special Projects Team

NPDO Oil – data reasonable and improving; annual oil use is projected based on bulk deliveries of oil from invoicing. Consumption is not metered. Wrong profiling of bulk deliveries could have consumption in one year when it should be in another.

NPDO Gas – data very good; annual gas use is derived from invoicing and customer meter reads.

NPDO Half Hourly Electricity (Sites with greatest electric loads >100kW) – data excellent; half hourly data available on-line.

Street-lighting Team

Unmetered Electricity – data limited. Consumption is not metered and is based on invoicing which has been determined through the upkeep of a detailed asset listing (with electric loads and burn hours determining the consumption). Whilst the baseline position will be fairly close to actual, only the ability to maintain an accurate asset listing will inform ongoing trends.

Fleet Management Team

Fleet Transport – data now very good, originally very limited. Data management systems have been developed and a Vechtech system and has been producing accurate information since September 2010. Previous efforts to establish fuel use/mileage included some makeshift use of financial information to make projections.

Corporate

Business Travel – data reasonable but with limitations. The data used does not capture all mileage within a particular 12 month period, It captures mileage from expense claims submitted within the 12 month period. Report outputs have tended to vary, perhaps depending on the configuration of the report requested.

Waste Management Team

Waste – data excellent. The main issue with the waste information used in the original Carbon Management Plan is that a decision was taken to calculate the baseline emissions attributable to waste to be based on the waste arising from Council buildings (based on a percentage of waste being landfilled). Hindsight now suggests that it would have been better to consider all municipal waste. Buildings waste is not measured and so the impact of any initiatives cannot be ascertained. Unlike buildings waste, there is a specific team to manage municipal waste and mature data is readily available. A change in tack here is proposed in Section 3.

Each of the above data streams feed into the Council's ***Performance Management System (Pyramid)*** and this should ordinarily provide the platform for recording progress in the delivery of energy saving and carbon reduction projects and in preparation of the Annual Progress Review Report.

Clearly, problems with data quality present basic issues which affect the performance management of the Carbon Management Plan implementation. Consequently, the Action Plan contained within Section 6.6 deals with the need to address data weaknesses urgently.

7.4.5 Communications and Training – ensuring everyone is aware

From the launch of the Carbon Management Programme in June 2008, the programme has achieved prominent visibility at Member and Senior Management level.

There is a satisfactory level of awareness at middle management level and with staff with closer links to the programme.

Furthermore:

- there has been a roll out of energy efficiency training to janitors, caretakers and Leisure staff
- HGV driver training has been provided
- staff suggestions have been welcomed
- ad hoc communications with stakeholders
- support and publicity for WWF Earth Hour
- press enquiries/releases have been progressed

In the absence of survey information, it is not currently possible to assess whether the Carbon Management Plan objectives have penetrated beyond Member and management levels into the wider Council operation. As targeted campaign work has yet to be undertaken, it is assumed that there will be significant scope to raise awareness and encourage involvement.

The Carbon Management Programme is a long term programme. It is essential therefore that the communication, awareness raising and training initiatives which will support the Carbon Management Plan are also longer term and sustained programmes. The same messages need to be delivered in a fresh, innovative, sophisticated and assertive manner to keep staff motivated and engaged.

To plan, structure and resource a long term sustained and effective campaign will require further research and support from partners such as the Carbon Trust, Energy Savings Trust and other public sector organisations who have run awareness programmes (successful or otherwise) to date. The development of the long term programme will be a major challenge.

As the Carbon Management Programme brings together a number of existing Services and initiatives under one coherent programme, it is essential to consider the opportunities which exist to integrate the awareness work and training programmes being undertaken through Eco Schools, Alienergy, GRAB & Recycling to ensure consistency of message and to derive optimum efficiencies.

The Action Plan detailed in Section 6.6 identifies the need to resource and address a long term sustained and effective campaign. Appendix B includes a draft communications strategy which could form the basis for influencing behaviour across the Council.

7.4.6 Finance and Investment – the money to match the commitment

A programme of possible projects was included within the original version of the Carbon Management Plan. The projects identified were largely assessed on a 'spend to save' basis and their status is detailed in Appendix D. Projects which have either been taken forward or are intended to be taken forward are covered in more detail in Section 5.

The Carbon Management Plan and Carbon Management Programme will continue to be funded on robust business cases, aligned to an evaluation of risk, in accordance with the Council's Capital Planning Guidance.

7.4.7 Policy Alignment – saving CO₂ across our operations

The 'Carbon Management Matrix – Embedding' at Appendix A highlights improvement in the alignment of its policies relating to tackling climate change, though scope remains for improvement.

At present the Council has a number of different Services and external partners working on projects which advance recycling, energy efficiency, renewable energy etc. The Carbon Management Plan brings all of these different service and project areas into one coherent package within the scope of the Carbon Management Programme. This offers an excellent platform to coordinate policy development/alignment.

In terms of the budget process, and in particular the case for funding specific capital projects, considerable progress has been made. Carbon impact, whole life costing etc is given due consideration within options appraisals and business cases, thus ensuring a strong case for carbon friendly projects in the Capital Plan.

There remains the need to ensure that corporate policy, planning and performance across the Council are generally aligned to give due consideration to climate change and sustainability.

Appendix A - Carbon Management Matrix – Embedding

2014	4.5	4.5	4	4.5	4	4.5	4
2011	4	3	3	3.5	2.5	4	3
2008	3	3	3	3.5	2	3.5	2
	Corporate strategy	Programme Management	Responsibility	Data Management	Communications and training	Finance and investment	Policy Alignment
5	<p>Top level target allocated across organisation</p> <p>CO2 reduction targets in Directorate Business Plans</p> <p>Action plans in place to embed strategy. Progress routinely reviewed</p>	<p>Cabinet / SMT review progress against targets on quarterly basis</p> <p>Regular diagnostic reports provided to Directorates</p> <p>Progress against target published externally</p>	<p>CM integrated in responsibilities of senior managers</p> <p>CM part of all contracts / Ts & Cs</p> <p>Central CO2 reduction advice available</p> <p>Green Champions leading local action groups</p>	<p>Regular collation of CO 2 emissions for all sources</p> <p>Data externally verified</p> <p>Monitoring & Targeting in place for: Buildings, street lighting and transport/travel</p>	<p>All staff given formalised CO 2: induction and training and communications</p> <p>Joint CM communications with key partners</p> <p>Staff awareness tested through surveys</p>	<p>Finance committed for 2+ yrs of Programme</p> <p>External funding being routinely obtained</p> <p>Ring-fenced fund for carbon reduction initiatives</p>	<p>CO2 friendly operating procedure in place</p> <p>Central team provide advice and review, when requested</p> <p>Barriers to CO2 reduction routinely considered and removed</p>
4	<p>Vision for CO 2 reduction clearly stated and published</p> <p>Climate Change Strategy endorsed by board and publicised with staff</p>	<p>Sponsor reviews progress and removes blockages through regular Programme Boards</p> <p>Progress against targets routinely reported to Senior Mgt team</p>	<p>CM integrated in to responsibilities of department heads</p> <p>Cabinet / SMT regularly updated</p> <p>Staff engaged through Green Champion network</p>	<p>Annual collation of CO 2 emissions for: Buildings, street lighting and transport/travel</p> <p>Data internally reviewed</p>	<p>All staff given CO2 reduction: Induction, communications, CM matters</p> <p>Communicated to external community</p>	<p>Co-ordinated financing for CO2 reduction projects via Programme Board</p> <p>Funding principles and processes agreed</p> <p>Finances committed 1 year ahead</p> <p>Some external financing</p>	<p>Comprehensive review of policies complete</p> <p>Lower level policies reviewed locally</p> <p>Unpopular changes being considered</p>
3	<p>CO2 reduction commitment in Corporate Strategy</p> <p>Top level targets set for CO2 reduction</p> <p>Climate Change Strategy reviewed annually</p>	<p>Core team regularly review CM progress: Actions Profile & targets New opportunities</p>	<p>An individual provides full time focus for CO 2 reduction</p> <p>Key individuals have accountability for carbon reduction</p> <p>Senior Sponsor actively engaged</p>	<p>Collation of CO 2 emissions for limited scope i.e. buildings only</p>	<p>Environmental / Energy group(s) given ad hoc: Training and communications</p>	<p>A view of the cost of CO 2 reduction is developing, but finance remains ad-hoc</p> <p>Some centralised resource allocated</p> <p>Finance representation on CM Team</p>	<p>All high level and some mid level policies reviewed, irregularly</p> <p>Substantial changes made, showing CO2 savings</p>
2	<p>Draft Climate Change Policy</p> <p>Climate Change references in other strategies</p>	<p>Ad hoc reviews of CM actions progress</p>	<p>CO2 reduction a part-time responsibility of a few department champions</p>	<p>No CO2 emissions data</p> <p>Compiled Energy data compiled on a regular basis</p>	<p>Regular awareness campaigns</p> <p>Staff given CM information on ad-hoc basis</p>	<p>Ad hoc financing for CO 2 reduction projects</p>	<p>Partial review of key, high level policies</p> <p>Some financial quick wins made</p>
1	<p>No Policy/No policy</p> <p>No Climate Change Reference</p>	<p>No CM monitoring</p>	<p>No recognised CO2 reduction responsibility</p>	<p>No CO2 emissions data compiled</p> <p>Estimated billing</p>	<p>No communications or training</p>	<p>No specific funding for CO2 reduction projects</p>	<p>No alignment of policies for CO2 reduction</p>

2014

2011

2008

Appendix B - Communications Plan:

Appendix B introduces a draft communications plan for further development. Its content is indicative of the type of activity that will be required to engage staff across the Council. Suitable engagement and inclusion of staff should assist in the delivery of the Carbon Management Programme. The accompanying document entitled 'Communications Strategy' provides a set of structured points to support the development of a Plan.

Purpose of document

The document sets out proposed communication activities with staff in the context of implementing the Council's Carbon Management Programme.

It outlines the changes taking place; how these will affect staff; key messages to be relayed to specified groups; when and how this will take place.

Communication with staff will be:

Open and Honest:	Straightforward and transparent
Timely:	Information when and where we need it
Accessible:	Clear, inclusive, and throughout the organisation
Appropriate:	The right information delivered at the right way in appropriate language and medium for the audience
Two-Way:	Allowing for full involvement with feedback channels'
Planned:	There must be a planned and joined-up approach to ongoing communication to staff around key projects and initiatives

Background

Background information

In 2008 Argyll and Bute Council made the commitment to develop a Carbon Management Programme in order to quantify levels of CO₂ emissions, set reduction targets and to introduce an implementation plan to achieve this reduction in emissions.

Aims

- To reduce the long-term cost of energy/fuels to the Council, making savings available for frontline services and ensure a sustainable future.
- To reduce the carbon impact of the councils operations from buildings, fleet vehicles, street-lighting, waste and business travel.
- To raise awareness of climate change issues with staff, Members and the general public.

Project Stakeholders

Stakeholders include:

- Staff and/or groups who may be directly or indirectly involved in delivering the Carbon Management Programme.

- People and/or groups who may be able to influence the changes being proposed.

Change Communication Activity

Communication Aims

The Carbon Management Programme will be widely promoted throughout Argyll and Bute Council. Since our staff represent a sizable proportion of the target audience and are those who could influence a drop in carbon emissions, they need to be fully aware of and engaged in the campaign.

Communication activities will ensure we achieve the following objectives.

The wider workforce:

- Are aware of the Carbon Management Programme.
- Understand the aims and objectives of the Programme.
- Understand the importance of the Programme e.g. climate change and the potential long term environmental and financial impacts of not taking action now.
- Are informed of progress made and know who to contact for more information.
- Feel a sense of ownership in the campaign – sense of attachment will lead to greater action.
- Understand that a behaviour change is required with regards to: energy/fuel use; waste minimisation (Reduce, Reuse, and Recycle)
- Consider travel needs/habits and procurement procedures.
- Have access to training and further information to help them make changes in the workplace.
- Have a named point of contact for their area of work.
- Have confidence appropriate action will be taken to resolve any issues / concerns
- Are instilled with a sense of optimism that the project will be successful, and a sense of pride knowing that they can make a difference.

Staff who are actively involved:

Receive feedback (face to face).

Have their efforts recognised.

Are kept informed of progress being made, both within their Service and corporately.

Generally:

- Aim to present a visualisation of what the impact would be if the campaign was successful.
- Language / tone is clear and concise.
- Communication is appropriately 'branded' - in line with other Council environmental projects and initiatives.

Initial Internal Communication Recommendations

To achieve our above communication aims, keep the initial impetus going and ensure a more proactive approach to the promotion of the Carbon Management Programme, the following actions are proposed:

Cascade, Hub, Intranet etc

- Maintain a schedule of planned news / people stories and features – linking to national campaigns where appropriate to give added impetus.
- ‘At Work’ interviews to highlight staff that are making a difference.
- A specific area will be created to enable staff to access information and advice. This area will house campaign news stories, managers’ briefing notes, tips and advice, contact details for Service ‘energy’ reps, links to more information etc.

Managers’ Briefings

- Line managers to play a key role keeping their staff motivated, enthusiastic, informed and open to making a behaviour change.
- Briefing notes will be distributed to provide a comprehensive overview of the initiative. Managers to update teams regularly.

Service Briefings

- Programme to be regularly featured at Service briefing sessions.

Website

- Regular update of information on Council website providing access by both Council staff and a wider audience.
- Reference point for tips, advice and further information.

Schedule of activities and key dates:

Activity	Task	Date	Lead
Carbon Management Revisited	Final document	Oct 2011	Project Sponsor
Carbon Management Action Plan	Final document	Oct 2011	Project Lead
Launch of Carbon Management Revisited	Communications -Cascade, Hub, Payslip etc.	XX	XX
Communications Plan	Develop Plan	XX	XX
Communications Plan	Implement Plan	XX	XX
Carbon Awareness/Reduction Campaign	Develop Campaign; including working with Carbon Trust	XX	XX
Carbon Awareness/Reduction Campaign	Implement Campaign; including working with Carbon Trust	XX	XX

Communications Strategy

Project title here

Purpose of communications: State the key communication purpose of the campaign or communication. Exactly what is the overall purpose of the strategy? What do you want to achieve?

Background context and issues: What is the reason for the project, what is the background and context e.g. legislation, rules changing, etc?

Objectives: What are the key objectives of the strategy or communication? This is critical as all the key activities will come from these objectives. Must be SMART – specific, measurable, achievable, relevant, time based. These will help identify critical success factors.

Evaluation: How we will measure success? Even if we are using an informal method, it is very important that we do this. Measure outcome not output. E.g. holding a meeting or producing a leaflet is an output. People changing their behaviour as a result of attending the meeting or reading the leaflet is an outcome.

Target audiences: (internal + external). Who are the key audiences? Segment and prioritise them. Consider what the audiences might think of the campaign or communication and also some of the peripheral audiences. Don't forget to identify any hard-to-reach audiences. Communicators of message: who is the message from? Receivers of message: who do we want to hear the message? Will you need to tailor your message to different audiences?

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Key messages: These form the basis of all communications, and will help write your tools. You should come up with around four to five key messages. These will include any vital facts you are trying to convey, but also the key messages around these facts.

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Approach: A summary or overarching strategy that identifies the methods you will use to achieve your objectives and the timing.

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Tools: How will you meet your objectives and communicate your key message to your segmented audiences? It is very easy to jump straight into tools, but it is important to consider the audiences and messages first. What tactics will you use e.g. face to face, meetings, publications, advertising, give-aways, posters. How will you promote your event? Web site, local papers, posters, flyers, etc.

What	Detail	Cost
Audience: i.e. Residents		
Audience: Repeat for each audience		

Budget: Costing – consider projected, real and social costs. It might be easy to identify actual costs, but we must also consider if there is a social cost to the communication. Will it be easy for audiences to access the information, or will they have to take time to do this? This is a social cost.

Impact on service and staff: Will the campaign/project have any impact on staff resources time etc? Take this into consideration. Have you discussed this with your line manager? Is it part of your work plan or in the communications tab of your service plan.

Risks: State what the risks are and how you will manage them.

Timeline/Key milestones: Show start and end dates and any key milestones (in some cases a separate action plan will be needed).

When	What	Who is delivering

Active summary and action plan: An overview of your plan, based on the information you have collated above:

Message	Audience	Method	Responsibility	Timing/frequency
<p>What do people need to know?</p> <p>What do you want them to do as a result of finding out?</p> <p>What action do you want them to take (if any)?</p>	Who needs to know?	How will you let them know? (may be a different method for each audience)	<p>Who is providing the information?</p> <p>Who is distributing the information?</p>	<p>When will the information be distributed?</p> <p>What deadlines exist for printing ahead of distribution?</p> <p>How often will the information be sent out?</p>

Contact details:

Author:	Ext:	Date:
Project contact:	Ext:	
Alternative contact:	Ext:	
Department:	Location:	

Appendix C – Risk Matrix

Argyll & Bute Council - Local Authority Carbon Management Plan									
Ref	Category	Risk Description	RISK ASSESSMENT			Risk Level	Barrier Action	Risk Lead	Mitigating Action
			Chance	Impact	Score				
1	financial risk	Service Departments are unwilling to allocate sufficient capital & revenue to deliver project initiatives	3	4	12	Red	The programme will not succeed and carbon and revenue savings will not be delivered	Project Sponsor	Initiatives will be founded by Business Cases which will model both financial outcomes and carbon saving benefits which will allow Departments and the Council as a whole to make informed decisions. Asset Management Board will approve IBCs/OBCs and FBCs and report to Environment PPG, SMT and Executive on Council wide & Departmental performance and delivery
2	organisational risk	Service Departments do not see the programme as a priority and do not actively support it at all levels.	3	3	9	Amber	The programme will not succeed on a sustainable basis if there is not strong support at all management levels - and a clear lead from Directors .	Project Sponsor	The SMT and Executive has considered and approved the CMP. The Programme Board must ensure that Service Departments are supporting the programme. The Environment PPG has a role in monitoring the development of the programme and the Programme Member Sponsor has a role in assessing progress and commitment.
3	political / societal factors	The Council will be harmed in terms of perception and performance measurement if it does not reduce its Carbon emissions	3	3	9	Amber	The Council will incur political damage if it does not address carbon reduction	Project Sponsor	CM Programme must deliver carbon savings
4	technical / operational / infrastructure risks	The Council does not have the technical expertise or the level of resource required to deliver technical solutions to reduce carbon emissions	3	3	9	Amber	The Council has a small Energy Team with limited capacity to develop technical solutions. It will require technical support, expertise and experience.	Project Sponsor	Position will be considered as part of the Property Service Review (2011).
5	legal and regulatory risk	Planning Guidance and Process prevents or delays the introduction of new technologies and / or technical solutions which can reduce carbon emissions and reduce revenue costs	3	3	9	Amber	No engagement within CM programme from Planning Team	Project Sponsor	The Head of Service (Planning) has committed to providing a lead officer for initiatives which are likely to require a planning input; there is representation within the Project Team.
6	financial risk	The Council will incur increasing revenue costs if it does not put in place a long term and sustainable programme of investment in initiatives to cut carbon and greenhouse gas emissions and associated revenue savings.	2	4	8	Amber	Increased exposure to future rising revenue costs & possible future central government penalties	Project Sponsor	The CM programme acts as the core of the Council's future investment programme and will bring together Business Case development for future investment decisions
7	financial risk	Proposed Initiatives & programmes of work do not deliver planned financial savings	2	4	8	Amber	A Business Case must be produced for each proposed initiative	Project Sponsor	Business Cases should include process for future assessment of outcomes against projections. The Programme Board will consider Final business cases before approving projects to proceed to implementation/construction phase. Current (and projected) fuel and energy costs will be utilised to model financial returns at FBC stage.
8	programme risk	The programme does not produce initiatives which will produce target savings in terms of carbon emissions and revenue savings	2	4	8	Amber	The Council cannot identify a programme of initiatives which can deliver the required carbon and revenue savings	Project Sponsor	The Project Team have access to the database of the other LA's successful projects and can use them as a reference source. Potential for partnership working.
9	organisational risk	Dependency on fossil fuels will threaten future operations and delivery of service	2	4	8	Amber	Future fuel shortages may affect operations -e.g. ferries, care homes, refuse collection	Project Sponsor	CM Programme reduces risk exposure and dependency upon fossil fuels (oil & gas)
10	organisational risk	Staff and Union Representatives do not support the CM programme	2	4	8	Amber	Programme fails due to lack of cooperation and actions at local levels	Project Sponsor	CM Programme must address this.
11	project risk	Technical design or construction failure/poor performance	2	4	8	Amber	Risk that Council employs poor quality technical & project management resource and develops and builds ineffective and poorly performing technological solutions.	Project Sponsor	Robust procurement process to resource technical expertise, capacity and capability with a "track record of successful project deliver and outcomes" . All projects founded on robust Business Cases (including delivery & commissioning)
12	financial risk	The proposed programme of works cannot be funded from CEEF and Utility Fund.	2	3	6	Amber	The extent of future carbon & revenue savings will be limited by capital and revenue investment levels	Project Sponsor	The CM programme acts as the core of the Council's future investment programme and will bring together Business Case development for future investment decisions.
13	legal and regulatory risk	If the Council does not take steps to reduce its carbon emissions it is at risk of future legislative penalty	2	3	6	Amber	Argyll & Bute Council's current electricity usage is less than the threshold level of the Carbon Reduction Commitment. It is recognised that it is likely that the CRC will be extended to capture LA's below the current threshold - which represents risk to the Council.	Project Sponsor	The CMP will develop disciplines, governance and technical expertise, capacity and experience to deliver carbon (and energy) savings initiatives and projects which will mitigate against the risk of penalties (e.g. CRC, non compliance with legislative targets).
14	strategic risk	Argyll & Bute Council is not committed to deliver future carbon & green house gas emission savings	1	4	4	Green	Implementation Programme does not receive Council support and financial commitment	Project Sponsor	The SMT and Executive has considered and approved the CMP. Corporate Plan continues to place high importance on carbon reduction.
15	project risk	The Programme Board does not function and lacks coherence and direction	1	3	3	Green	Project planning is poor and no clear direction or objectives are set	Project Sponsor	CM Programme/CMP provides focus, structure and identifies resource for delivery
16	programme risk	The programme does not deliver any meaningful reductions in carbon emissions	1	2	2	Green	The programme does not either monitor or deliver future carbon savings	Project Sponsor	Business Cases should include process for future assessment of outcomes against projections

Appendix D - Status of the Carbon Management Plan 2009 Projects

The status of proposed projects in the original Carbon Management Plan are as follows:

Project No.	Project Description	Project Status
1.	Rothesay Pool - Oil to Gas Fuel Conversion	Complete 2009
2.	Thomson Home, Rothesay - Oil to Gas Fuel Conversion	Complete 2010
3.	All Council Buildings - Re-lamping Best Practice	Procurement Strategy approved by Procurement Board; best practice being implemented in part but a whole Council roll-out needs further development
4.	Tiree High School - Renewable Opportunities for Heating	Feasibility study conducted for wind turbine; planning risk identified preventing delivery; project to be kept under review
5.	Islay High School/Bowmore PS - Oil/Electric to Biomass Conversion	Oil to biomass project planned within the 2011/2012 capital programme
6.	Hermitage Primary School - Oil to Gas Fuel Conversion	Business case 2011/2012 for 2012/2013 capital programme consideration
7.	John Logie Baird Primary School - Oil to Gas Fuel Conversion	Business case 2011/2012 for 2012/2013 capital programme consideration
8/9.	Insulation Surveys/Installation Programme	Business case 2011/2012 for 2012/2013 capital programme consideration
10.	Oban High School - Oil to Gas/Biomass Conversion	Oil to biomass project planned within the 2011/2012 capital programme
11.	Campbeltown Grammar School - Oil to Gas/Biomass Conversion	Feasibility study conducted but project deferred due to prospects for a new school build
12.	St Kierans Primary/Kintyre CEC/Castlehill Primary - Heating Conversion to Biomass Operation	Project deferred; St Kierans PS closed; ref also project no. 36; options for Castlehill PS to be considered further in 2012/2013
13.	Lochgilphead Library/Lochgilphead CEC/Manse Brae Offices - Heating Conversion to Biomass Operation	Initial assessment does not demonstrate sufficient benefit to take this project forward in advance of others. To be kept under review
14.	Struan Lodge, Dunoon - Oil to Gas Fuel Conversion	Business case 2011/2012 for 2012/2013 capital programme consideration
15.	Increase Recycling - All Council Buildings	Ongoing consideration
16.	Aqualibrium - Voltage Optimisation Trial	Question marks over the need and suitability of this technology for certain sites has arisen. Further research required by an electrical designer to ensure investment is worthwhile
17.	Wood Fuel Sourcing- Biomass Supply Alienergy	This area is being explored currently by Procurement Scotland; outcome expected in 2012
18.	Lochgilphead Adult Resource Centre - Oil/Electric - Biomass Conversion (Connection to District Heating)	Initial assessment does not demonstrate sufficient benefit to take this project forward in advance of others. To be kept under review

19.	Tarbert Academy - Heating Conversion to Biomass Operation	2011/12 Business Case for 2012/13 capital programme consideration
20.	Travel Plan – Executive Controls	Ongoing budgetary reductions to be delivered by Service Departments
21.	Queens Hall, Dunoon - Oil to Gas Fuel Conversion	2011/12 Business Case for 2012/13 capital programme consideration; possible CHORD impact to be considered
22.	Installation of Variable Speed Drives - Swimming Pools	Links with Project no. 42
23.	Kilmory Castle & Nursery - Oil to Biomass Conversion	Oil to biomass project planned within the 2011/2012 capital programme
24.	Biofuel Generator	Item deferred. Project not feasible at this stage
25.	Management of the PC Desktop	Ongoing
26.	Server Virtualisation	Ongoing
27.	Staff Awareness and Energy Saving Programme	Project planned 2012/2013 and beyond; refer to Sections 6.6 & 7.4.5
28.	Fuel Saving - Council Fleet Vehicles	Ongoing consideration
29.	Portable Electric Heating Appliances- Removal of all Unauthorised Appliances (controlled by Energy Manager).	To be developed 2012/2013; linked to ability to provide adequate comfort conditions from fixed heating systems
30.	Street Lighting - Dimming Trial	Fixed trial installation installed Dewar Avenue, Lochgilphead
31.	Achahoish PS Electrical Generation - Wind Turbine (6kW)	Business case 2011/2012 for 2012/2013 capital programme consideration
32.	Islay High School - Electrical Generation - Wind Turbine Feasibility	Feasibility study conducted for wind turbine; planning risk identified preventing delivery; project to be kept under review
33.	Gartbreck (Islay) Electrical Generation - Wind Turbine Feasibility	Feasibility study conducted for wind turbine; planning risk identified preventing delivery; project to be kept under review
34.	Energy Management Team Resource Required to Develop Future IBCs in All Areas for Year Two and Beyond	Property Services Review expected to confirm the need for suitably qualified mechanical and electrical services staff to progress this item
35.	Riverside Pool- Voltage Optimism Trial	Question marks over the need and suitability of this technology for certain sites has arisen. Further research required by an electrical designer to ensure investment is worthwhile
36.	Campbeltown CEC - Oil to Gas Conversion (Bio Mass to be Considered)	Oil to gas project planned within the 2011/2012 capital programme
37.	Street Lighting - Audit of Installation Capacity & Billing	Ongoing consideration
38.	Oban Office Rationalisation - Property Disposals and Development of Carbon Friendly Alternative Accommodation Feasibility	Outcome: Kilbowie House closure and move from West Highland Housing Association (WHHA) premises
39.	Develop Carbon Neutral Concept for All Council Emissions Associated With The Isle of Islay	Ongoing consideration

40.	Rothesay - Energy Sourcing from Community CHP Scheme (Biomass)	Project dependant on development of Community Scheme
41.	Rothesay/Dunoon - Feasibility of Mini Hydro from Reservoirs	Preliminary feasibility conducted. Rothesay project not considered viable but the Bishop's Glen project in Dunoon will be considered further in the context of the Renewables Sourcing Strategy
42.	All Council Buildings - Energy Audit Recommendations - Assorted Minor Projects	Range of projects complete; multiple project opportunities remain; ongoing consideration
43.	NPDO Schools - Employment of a Specialist Energy Consultant to Ensure adoption of Best Practice	Discussions with MITIE are ongoing. Monitoring & targeting and adoption of an energy strategy are key components.
44.	Aqualibrium Pool Cover Installation	Business case 2011/2012 for 2012/2013 capital programme consideration
45.	Smart Metering Trials	Approvals for widespread implementation of Automated Meter Reading (AMR) being confirmed
46.	Achieve Carbon Trust Standard (Leisure Properties Initially)	Further research required to determine the most appropriate quality standards or Independent accreditations to aspire to (by 2014).
47.	Water Conservation Initiatives	Range of works complete; ongoing task over multiple sites; AMR installations expected to identify water loss issues.
48.	General Review of domestic hot water (DHW) Provision	Ongoing consideration
49.	Research Council Electric Load Requirements Against National Grid Network Capacities	Item deferred; relates to Renewables Implementation Strategy
50.	Dalintober PS- Oil to Gas Fuel Conversion	Completed 2011
51.	Electric Generation (Leisure)- Feasibility to Harness Exercise Bike Energy	Item deferred; other project opportunities present better cases for investment
52.	St Andrews Primary School - Oil to Gas Heating Conversion	Business case proposed 2012/2013 for 2013/2014 capital programme consideration.
53.	Electric Heating Systems - Review of Controls	Ongoing consideration
54.	Waterless Urinal Trial	Item deferred
55.	Catering Sub Metering Trial - Greater Ownership of Catering Staff	Ongoing consideration
56.	Rothesay Leisure Pool- Pool Area Partition (Feasibility)	Project planned within the 2011/2012 capital programme as part of a wider refurbishment project
57.	Review Handling of Site Closures to avoid Unnecessary Costs	Ongoing consideration
58.	Adoption of Council-Wide Standards- Carbon Friendly Specification & Design Advice; Rationale for Project Decisions.	Progress made; further development of carbon friendly specifications required
59.	Renewables Event- Scope Out Opportunities	Item deferred in favour of events promoted by AliEnergy
60.	Rothesay Community Education Centre - Electric to Gas Heating Conversion	Complete 2010

61.	Toward Primary School- Installation of pv System	Complete 2010
62.	Drumlemble Primary School - Installation of pv System	Complete 2009
63.	TRV Installations - Assorted Sites	Range of projects complete; ongoing consideration; Links with Project no. 42
64.	Feasibility of procuring a mobile/commercial wind speed/direction logger (Anemometer).	Item deferred; not now seen as necessary

Appendix E – Register Of Energy Performance Certificates

ADDRESS 1	POSTCODE	PROPERTY TYPE	GIA	EPC RATING	ANNUAL CO ² EMISSIONS	ENERGY USE/M ² (kWh)
DUNOON HOSTEL	PA23 8JR	HOSTEL	2022	E	78	271
GLENCRUITTEN HOSTEL	PA34 4SB	HOSTEL	2017	E	77	268
ARROCAHR PRIMARY SCHOOL (CANTEEN)	G83 7DG	PRIMARY SCHOOL	125	C	28.3	145
BOWMORE PRIMARY SCHOOL	PA43 7JX	PRIMARY SCHOOL	1052	D	58	138
CARDROSS PRIMARY SCHOOL	G82 5PN	PRIMARY SCHOOL	1463	E+	64	261
CARDROSS PRIMARY SCHOOL (NEW CLASS BLOCK)	G82 5PN	PRIMARY SCHOOL	146	D	54	127
CASTLEHILL PRIMARY SCHOOL	PA28 6LE	PRIMARY SCHOOL	2391	F+	81	287
COLGRAIN PRIMARY SCHOOL	G84 7TZ	PRIMARY SCHOOL	2005	F+	86	303
DALINTOBER PRIMARY SCHOOL	PA28 6HG	PRIMARY SCHOOL	2152	F+	90	309
DUNOON PRIMARY SCHOOL	PA23 7DR	PRIMARY SCHOOL	3016	E+	69	316
GARELOCHHEAD PRIMARY SCHOOL	G84 0DG	PRIMARY SCHOOL	2086	C	40	182
HERMITAGE PRIMARY SCHOOL	G84 7EW	PRIMARY SCHOOL	3379	C	43	148
INVERARAY PRIMARY SCHOOL	PA32 3UE	PRIMARY SCHOOL	1341	F+	82	280
JOHN LOGIE BAIRD PRIMARY SCHOOL	G84 9EP	PRIMARY SCHOOL	2784	D	56	191
KILCREGGAN PRIMARY SCHOOL	G84 0HT	PRIMARY SCHOOL	1050	F	92	335
KIRN PRIMARY SCHOOL	PA23 8EH	PRIMARY SCHOOL	2733	E	71	253
PARK PRIMARY SCHOOL	PA34 5AU	PRIMARY SCHOOL	1687	E+	67	317
PORT ELLEN PRIMARY SCHOOL	PA42 7BW	PRIMARY SCHOOL	1226	F+	82	283
RHU PRIMARY SCHOOL	G84 8RS	PRIMARY SCHOOL	1220	D+	52	174
ROSNEATH PRIMARY SCHOOL	G84 0RJ	PRIMARY SCHOOL	1128	F	94	223
SALEN PRIMARY SCHOOL	PA72 6JG	PRIMARY SCHOOL	711	E	76	179
SANDBANK PRIMARY SCHOOL	PA23 8PW	PRIMARY SCHOOL	1303	F+	84	296
ST JOSEPH PRIMARY SCHOOL	G84 7LR	PRIMARY SCHOOL	2129	G	103	245
ST MUNS PRIMARY SCHOOL	PA23 8DB	PRIMARY SCHOOL	1631	E	72	322
TOBERMORY PRIMARY SCHOOL (PRE 5 UNIT)	PA75 6PB	PRIMARY SCHOOL	131	A	15	197
OBAN HIGH SCHOOL	PA34 4JB	SECONDARY SCHOOL	10888	D+	46	149
TREE HIGH SCHOOL	PA77 6XA	SECONDARY SCHOOL	2333	G	158	375
TOBERMORY HIGH & PRIMARY SCHOOL	PA75 6PB	SECONDARY SCHOOL	2780	G	101	240
CAMPBELTOWN GRAMMAR SCHOOL	PA28 6JS	SECONDARY SCHOOL	7242	F+	87	283
TARBERT ACADEMY & PRIMARY	PA29 6TE	SECONDARY SCHOOL	3541	E+	67	219
ISLAY HIGH SCHOOL	PA43 7JY	SECONDARY SCHOOL	5397	F	99	311
PARKLANDS SCHOOL	G84 7EZ	SPECIAL SCHOOL	1158	D+	51	229
MOAT CENTRE	PA20 0EP	COMMUNITY CENTRE	1128	G	111	343
DUNOON ROADS DEPOT	PA23 7PA	DEPOT	618	F	99	307
ROTHESAY ROADS DEPOT	PA20 0HD	DEPOT	572	G	213	755
DUNOON STADIUM	PA23 7RL	STADIUM	373	G	190	415
ARGYLL HOUSE	PA23 8AJ	OFFICE	1170	G	108	364
BLAIRVADACH	G84 8NN	OFFICE	1415	G	169	520
DALRIADA HOUSE	PA31 8RD	OFFICE	1157	F+	82	241
KILMORY	PA31 8RT	OFFICE	4755	G	103	337
MUNICIPAL BUILDINGS	G84 7QF	OFFICE	697	G	131	333
MANSE BRAE OFFICES (OPERATIONAL SERVICES)	PA31 8RD	OFFICE	1273	E+	65	207
MANSE BRAE OFFICES (ANNEXE)	PA31 8RD	OFFICE	92	G	149	353
FINANCE OFFICE	PA28 6JX	OFFICE	1086	G	145	343
EADER GLINN HOME FOR THE ELDER	PA34 4JL	ELDERLY HOME	1932	G	109	362
THOMSON HOME	PA20 9JH	ELDERLY HOME	1298	G	162	584
STRUAN LODGE	PA23 8HU	ELDERLY HOME	1476	G	155	522
LORN RESOURCE CENTRE	PA34 4SB	RESOURCE CENTRE	1219	E	77	257
AQUALIBRIUM	PA28 6EG	SWIMMING POOL	4534	D+	52	680
RIVERSIDE SWIMMING POOL	PA23 8AB	SWIMMING POOL	2704	G	172	725
HELENSBURGH SWIMMING POOL	G84 8SQ	SWIMMING POOL	1643	G	353	1574
ROTHESAY LEISURE POOL	PA20 9BN	SWIMMING POOL	1086	G	272	1183
CORRAN HALLS	PA31 5AB	HALL	1738	G	174	413
QUEENS HALL	PA23 7HH	HALL	3186	G	257	877
ROTHESAY PAVILION	PA20 0AX	HALL	3182	G	120	428
VICTORIA HALL - CAMPBELTOWN	PA28 6EG	HALL	996	G	154	633
VICTORIA HALLS - HELENSBURGH	G84 8TU	HALL	1147	G	103	396