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East Dunbartonshire Council
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Carbon Management Plan
2015 - 20

Contents

Appendices

NB – This document was updated in November 2018 to incorporate changes to the Standard Operating Procedures (Appendix A), as approved by Committee, and to add a minor clarification to the list of carbon reduction projects (Appendix B).

Foreword from Convener, Development & Regeneration Committee

Climate change is described as one of the biggest challenges mankind has ever faced and carbon emissions from human activity are among its main causes. As an energy user and a community leader, East Dunbartonshire Council has an important role to play in tackling climate change, by reducing our own carbon emissions and setting an example for others to follow.

Sustainable development, including carbon reduction, is a strategic priority for East Dunbartonshire Council and we aim to reflect this at all levels of our work, from high-level plans to practical activities.

Through working with Resource Efficient Scotland to revise our Carbon Management Plan and set a new target date of 2020, we have demonstrated our commitment to ongoing improvement. Furthermore, we have acknowledged the need to look beyond this target to ensure that our improvement is continual and that we play our part in meeting Scotland's world-leading climate change targets.

This plan presents an important opportunity for East Dunbartonshire Council to demonstrate and build on our reputation as a forward-thinking, creative and joined-up Council, and we look forward to the benefits that the Council and wider community will enjoy as a result of carbon cutting and the new ways of working that this will bring.

Councillor Alan Moir

Convener, Development & Regeneration Committee

Glossary

Baseline	The year against which the reduction target has been set
Carbon footprint	A measurement of the total greenhouse gas emissions caused directly and indirectly by a person, organisation, event or product
Conversion factor	Another term for 'emission factor' (see below); also used in relation to the factors for converting units e.g. from miles to km
Data source	The origin of data within an organisation; may be proprietary software or an individual in a department
Emission factor	The average emission rate of a given greenhouse gas for a given source, relative to units of activity; e.g. kg CO2e per kWh.
Emission type	The category for the emission source as defined within the DEFRA/DECC emission factor tables
Greenhouse gases (GHGs)	Gases that contribute to the greenhouse effect by trapping heat in the atmosphere. The key gases are: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6).
Operational boundary	This boundary sets out the emission sources included in the footprint. In keeping with good practice and, in particular, the WRI Guidance for Public Sector Organisations, this includes all Scope 1 and Scope 2 emissions (e.g. on-site fuel combustion, company-owned vehicles and purchased electricity consumption).
Organisational boundary	This boundary sets out which assets are to be included in the footprint and how any shared assets will be accounted for.
Out-of-scopes – biogenic emissions	As biogas and biomethane have their origins in biological matter, the CO2 emitted when they are burnt is not accounted for within an organisation's scope 1 emissions; it would be logged separately under biogenic emissions.
Scope 1	Direct emissions – emissions from activities owned or controlled by an organisation. Examples include emissions from combustion in owned or controlled boilers, furnaces and vehicles, and emissions from chemical production in owned or controlled process equipment.

Scope 2	Indirect emissions that are a consequence of an organisation's activities but which occur at sources not owned or controlled by the organisation, e.g. purchased electricity.
Scope 3	Other indirect emissions from sources not controlled by an organisation; examples include business travel and waste disposal by means not owned or controlled by an organisation.
Site	The geographically-defined area to which emissions can be attributed; may be an individual building or a set of adjacent buildings
Temporal boundary	The time period covered by the footprint i.e. the period during which these emissions arose; can be financial year, calendar year, academic year or other
Well-to-tank ('WTT')	The term used to describe the factors labelled as 'scope 3, total indirect GHG' in the 2012 and 2011 releases of the conversion factors. These factors enable organisations to account for the emissions associated with extracting, refining and transporting the raw fuel to the vehicle, asset or process under scrutiny.

Executive Summary

In our second Carbon Management Plan (CMP), published in 2011, East Dunbartonshire Council stated an aspiration to achieve a reduction target of 25%, based on the 2006/07 carbon footprint baseline, by 2015. A number of factors have posed challenges to measuring progress, and local authorities were recently advised to re-set baseline years and targets.

This third version revises the earlier Plan and associated target, introducing a new baseline year of 2012/13, where 32,420 tonnes of carbon dioxide equivalent (tCO_2e) were emitted from the use of electricity, natural gas, other fuels and transport (fleet and business travel) and from waste disposal.

A target has been set to reduce the Council's total annual carbon footprint by 20% in relation to the baseline year, by the end of financial year 2019/20. Reductions will be achieved through a range of projects including renewables installations, fleet management initiatives and street lighting replacement, supported by a range of 'enabling measures' including policy development support and procurement processes.

Funding has been, and will continue to be, made available from internal and external sources, especially Council capital funding and Salix.

The Project Sponsor for this CMP is the Director of Development and Regeneration, who will be assisted in its delivery by a variety of teams and officers throughout the Council, including the Sustainability Policy Team and Energy Officers. The Council has also established a network of Green Office Champions who provide an opportunity to enhance communication and awareness-raising by actively promoting and monitoring environmental projects both locally and among wider stakeholders.

This CMP is viewed as a 'live' document and it is envisaged that circumstances may vary over the course of its lifespan, e.g. through estate changes and new project opportunities arising. To ensure that it remains 'fit for purpose' to deliver targeted carbon savings, this document will be reviewed on an annual basis with a report going to Committee and being published online. This process will be overseen by the Carbon Management Officers Group and coordinated by the Sustainability Policy Team.

To facilitate the review process, Standard Operating Procedures have been developed to provide a formal framework for carbon data collection and collation, and reporting on the progress of carbon reduction projects.

1 Introduction

1.1 Background

East Dunbartonshire Council, established in 1996, is in the mid-range of Scottish local authorities in terms of population (just over 100,000) and covers an area of 77 square miles. The Council provides a range of services via 8 Directorates which collectively employ approximately 4000 staff. The Council has an estate of approximately 250 sites, ranging from offices, schools and leisure centres to community halls and sports pavilions.

East Dunbartonshire Council produced its first Carbon Management Programme in 2008, formalising an organisational commitment to energy and fuel efficiency which had already existed for many years. This document set a reduction target of 25% by 2015, based on a 2006-07 carbon footprint baseline of 34,991 tonnes from electricity, gas, oil and transport-related (fleet, business travel and commuting) consumption; this footprint was revised upwards in 2011 to 55,531 tonnes to include emissions from waste.

1.2 Revised Approach

While significant amounts of carbon have already been reduced by the Council since the introduction of the first Carbon Management Plan (see Section 4), challenges emerged in relation to the quality of data available and the procedures required to obtain it, limiting the recording and analysis of emissions data and the tracking of carbon reduction projects; these challenges were common across public sector organisations.

In recent years, however, the changing legislation and policy framework – notably including the UK Carbon Reduction Commitment Energy Efficiency Scheme - has pushed carbon management up the agenda. The related introduction of energy management software within the organisation has allowed a new approach to monitoring consumption and targeting carbon reduction initiatives. Support has also been made available from Resource Efficient Scotland, promoting a more robust approach at both the strategic and technical level.

This revised Plan responds to these factors, presenting a more accurate and sophisticated approach to carbon management. One key change is the improvements in the quality and reliability of data resulting from the changes described above, which has stimulated the updating of the baseline year from 2006/07 to 2012/13. While consumption data is available from previous years, its lack of comparability in terms of range and robustness justifies the setting of a new baseline. Another key change is the introduction of Standard Operating Procedures (see Appendix 1), which set out clear responsibilities and timelines for information gathering and reporting. To support this, the development of a carbon reduction indicator will for inclusion within the corporate monitoring system will be investigated (see Section 7). The spreadsheet tool itself is also more comprehensive, holding consumption and project data in the same place and allowing projections to be made with more confidence.

1.3 Plan Structure

This Carbon Management Plan details the Council's approach to reducing carbon emissions over the next five years and sets out a clear timetable as well as identifying the responsibilities and internal resources required to deliver the programme. The main objectives of the plan are:

- To continue to take a whole business approach so that carbon management is adopted as a key objective, with responsibility embedded across the organisation. Key stakeholders will be kept under review to ensure that carbon reduction is fully integrated into the organisation's culture.

- To adopt revised targets for the measurable reduction of carbon emissions and to deliver these reductions.

In order to ensure that there is effective and ongoing ownership of the programme, it is important to define a governance structure. The Director of Development and Regeneration, as Project Sponsor, will be responsible for implementation of the plan and reporting to the Corporate Management Team and the Development and Regeneration Committee. The CMP will be regularly reviewed and updated, and information on the organisation's environmental performance will be published on an annual basis. The Carbon Management Officers Group (CMOG), which forms the administrative dimension of the governance arrangements, will support the process by playing a co-ordination role and reporting to the Director of Development and Regeneration (see Section 6).

This Plan contains the following Sections:

Business Case sets out the context and drivers for carbon management, including the organisation's own priorities and strategic themes.

Scope, Emissions Baseline and Projections section discusses the results from the revised carbon footprint baseline and includes clear definition on the organisation and operational boundaries applied, and data sources and availability. It also discusses the 'business as usual' scenario and the value at stake.

Carbon Management Projects section outlines current and planned carbon reduction project and supporting activities.

Carbon Management Plan Financing describes the financial support available for carbon management within the organisation whilst Management and Delivery defines the structures in place to ensure the Plan's successful governance and implementation.

The final chapter on Progress Reporting outlines how the carbon management progress will be monitored measured and communicated both internally and externally.

1.4 Carbon Footprint Project Forecast Tool

Data on carbon consumption and carbon reduction projects is held in an Excel tool titled the 'Carbon Footprint Project Forecast Tool', which is produced by Resource Efficient Scotland. This tool is widely used across the Scottish public sector, introducing scope for future benchmarking. The tool assists organisations in calculating the carbon footprint associated with their operations and also records carbon reduction project data, calculating project-related carbon savings and payback periods, assessing progress against the carbon reduction target and determining the financial value at stake associated with reducing carbon emissions. The tool is a live document, subject to ongoing updates, and is supplemented by various Word documents providing background information e.g. methods and assumptions used in the calculation of carbon figures, projects which were carried out but excluded from the tool, etc.

The calculations performed by the tool are based on the best data available, but it is not always possible to attribute carbon emissions to set periods due to various factors such as inaccuracies in energy bills and ongoing developments in the way that carbon emissions are calculated.

2 Business Case

Greenhouse gases (GHGs) produced by human activity, also referred to as carbon emissions, are a major cause of climate change due to their effect on global temperatures. The scientific evidence for climate change is well established; the Intergovernmental Panel on Climate Change, the leading international body for the assessment of climate change, published an updated assessment of the current state of scientific knowledge relevant to climate change in 2013 and concluded that climate change is unequivocal and that human influence is clear[1].

In addition to the moral imperative that this creates, there are a growing number of legal instruments, economic incentives, policy directions and public demands encouraging organisations to recognise the importance of climate change and take a common-sense, efficient approach to service delivery that promotes environmental protection in a way that contributes positively to society and the economy.

2.1 Legislative and Policy Incentives

The following list sets out some key legislative and policy drivers for carbon management that the Council faces:

- The UK Climate Change Programme (launched in 2000), including:
    - Climate Change Act 2008, which sets a legally binding target of at least an 80% reduction in UK emissions by 2050
    - The Carbon Reduction Commitment Energy Efficiency Scheme (CRC EES), introducing carbon trading to energy-intensive organisations who are not part of the EU Emissions Trading Scheme.
    - The Climate Change Levy, which until this year imposed a tax on consumption of non-renewable energy by non-domestic users. This was extended to include renewable energy from 1 August, 2015.
- The Climate Change (Scotland) Act 2009 which set legally-binding targets to reduce Scotland's GHG emissions by 42% by 2020 and 80% by 2050.
- The Energy Performance of Buildings Directive, transposed into Scottish law in 2008 and recast in 2010, which requires the display of Energy Performance Certificates in public buildings and sets requirements for efficiency of new buildings
- Scotland's Zero Waste Plan, which sets an ambitious agenda for reducing waste, recognising the carbon reduction benefits of doing so
- The Local Government in Scotland Act 2003, which places a statutory duty of Best Value on local authorities, requiring a contribution to sustainable development
- The Scottish Landfill Tax, introduced in 1996, which aims to encourage waste producers to produce less and recover more value from it
- East Dunbartonshire's Single Outcome Agreement, in which the importance of sustainability is reflected both in the local outcomes and in the underpinning principles
- East Dunbartonshire Council's forthcoming Sustainability and Climate Change Framework, which will set the context for a strategic, cross-Council approach to sustainability
- Scotland's Climate Change Declaration – to which East Dunbartonshire Council is a signatory - which commits organisations to a variety of climate change mitigation measures including corporate carbon reduction
- East Dunbartonshire Council's Energy Policy, which commits the organisation to reducing energy use and moving from fossil fuels to renewables
- East Dunbartonshire Council's Green Office Policy, which includes various in-house sustainability measures including energy efficiency

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1 IPCC (2013) Fifth Assessment Report http://www.ipcc.ch/

2.2 Cost Saving

In addition to the avoidance of financial penalties related to the CRC EES, the Climate Change Levy and the Scottish Landfill Tax, carbon reduction also delivers cost savings by reducing energy bills, which becomes more crucial as fuel costs rise; it is predicted that limitations on energy supply, in the context of a sensitive world economy, will drive prices above general inflation for the foreseeable future. This is particularly significant given the large proportion (two thirds) of the Council's emissions that are derived from gas and electricity usage. The importance of responding to this cost incentive is underlined by the current reduction in financial allocations to public bodies from central government.

Carbon reduction also saves future costs. The Stern Review[2] highlighted this at a macro level, estimating that if no action is taken, the overall costs and risks of climate change will be equivalent to losing at least 5% of global GDP each year, now and in the future. If a wider range of risks and impacts is taken into account, the estimates of damage could rise to 20% of GDP or more. In contrast, the costs of action – reducing greenhouse gas emissions to avoid the worst impacts of climate change – can be limited to around 1% of global GDP each year.

2.3 Reputation

As awareness of sustainability grows, organisations come under increasing public pressure to demonstrate commitment and good practice. Freedom of Information legislation has been a particularly significant development, having placed the Council under scrutiny several times in relation to climate change and carbon management.

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2 The Stern Review: The economics of Climate Change (2006). N Stern
www.hm-treasury.gov.uk/sternreview_index.htm

3 Scope, Emissions Baseline, Projections and Target

This section sets out the scope of emissions covered by this Plan and quantifies them to identify the Council's 'carbon footprint'. Projections are then made in relation to the likely emissions and costs if no action were taken (known as 'Business as Usual' (BAU)). The likely impacts of planned carbon reduction projects are then determined and evaluated in conjunction with the BAU scenario, to identify a realistic target based on the 'gap' between the BAU emissions figure and the projected emissions when carbon reduction projects are carried out; this is known as the 'Value at Stake'.

As a guiding principle for collating this information, the IPCC and UNFCCC principles of transparency, consistency, comparability, completeness and accuracy ('TCCCA') will be observed.

3.1 Scope

The Scope of the carbon footprint is determined by the extent of the estate, goods and services over which the organisation has operational control, and the availability of good quality data. When discussing scope, it is also useful to consider the classification system for emissions from different types of source.

3.1.1 Emissions sources

The GHG Protocol[3] categorises carbon emissions as scope 1, 2 or 3 emissions, as defined below.

Scope 1 Emissions: Direct GHG emissions that occur from sources owned or controlled by the organisation, e.g. emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.; emissions from chemical production in owned or controlled process equipment.

Scope 2 Emissions: 'Energy indirect' GHG emissions that arise from the generation of purchased electricity and heat, steam and cooling, consumed by the organisation. Emissions from electricity generated on-site are also classed as Scope 2.

Scope 3 Emissions: An optional reporting category that allows for the treatment of all other indirect emissions. Scope 3 emissions are a consequence of the activities of the organisation, but occur from sources not owned or controlled by the company. Examples of scope 3 activities are extraction and production of purchased materials; transportation of purchased fuels, including electricity; and use of sold products and services. Scope 3 also includes the Transmission and Distribution (T&D) losses for purchased electricity supplied through the Grid and 'Well to Tank' emissions associated with extraction, refining and transportation of raw fuel to the relevant vehicle, asset or process.

The following diagram highlights key emission sources under each scope:

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3 The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard Revised Edition, Worlds Resources Institute; World Business Council for Sustainable Development, 2004.

3.1.2 Boundaries

Carbon footprints are generally defined in relation to two boundaries: the organisational boundary and the operational boundary.

In line with the WRI Greenhouse Gas Protocol, the organisational boundary sets out which assets are to be included in the footprint and how any shared assets will be accounted for. The organisational boundaries used for the production of the carbon footprint outlined below are shown in Figure 1.
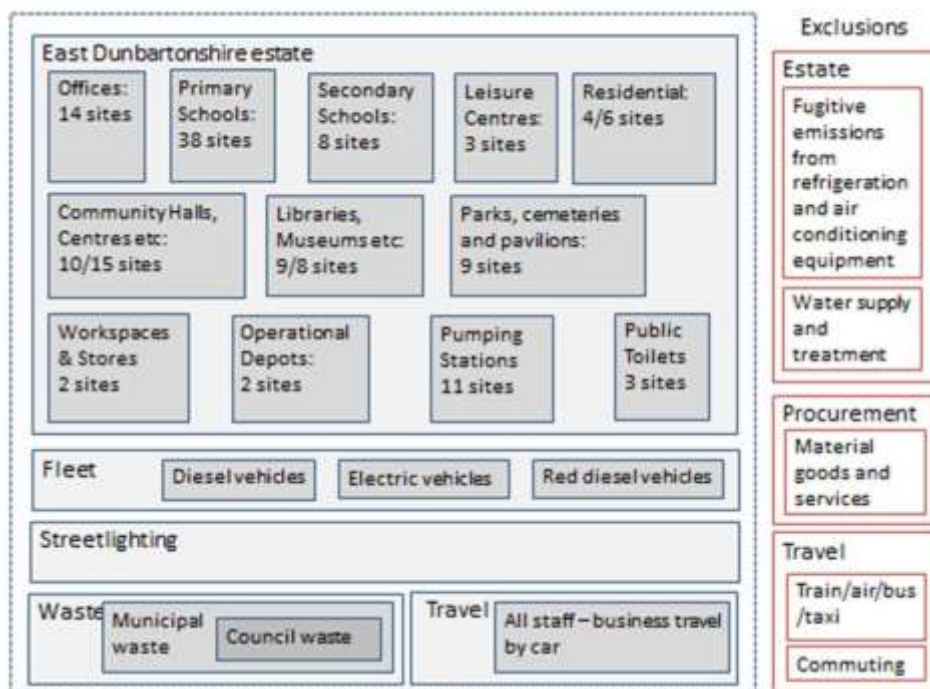

Figure 1: Organisational boundary for the Council's carbon footprint 2012-13

Services/Functions include Education, Social Work and the activities of the East Dunbartonshire Leisure and Culture Trust.

Various activities have been placed outwith the boundary due to a current lack of methodology enabling calculation of their carbon emissions and/or a lack of current provision for addressing these areas.

(It should be noted that the organisational boundary for our CRC reporting is narrower than the boundary described here).

3.1.3 Operational Boundary

The operational boundary essentially sets out the emission sources included in the footprint, identifying whether they fall under Scope 1, 2 or 3. In keeping with good practice, and, in particular, the WRI Guidance for Public Sector Organisations, this includes all Scope 1 and Scope 2 emissions (e.g. on-site fuel combustion, company owned vehicles and purchased electricity consumption). As noted above, Scope 3 emissions (e.g. waste and business travel), while considered discretionary, are included where possible.

Emission factors associated with waste to landfill include transportation and methane emissions[4] whilst emissions from composting/recycling include transportation and minimal preparation emissions[5].

The operational boundaries used for the production of the carbon footprint outlined below are shown in Figure 2. (NB the size of box allocated to each emission source is not proportional to percentage of the overall footprint that the source constitutes).

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4 Transportation distances are based on UK average assuming a 50% loading; CH4 emissions from landfill take into consideration a 75% capture rate and 10% oxidisation at cap.

5 Defra/DECC 2013 Government GHG Conversion factors for Company reporting methodology paper for Emission Factors states: "Under the Scope 3 standard, emissions associated with recycling and energy recovery are attributed to the organisation which uses the recycled material or which uses the waste to generate energy. The emissions attributed

to the company which generates the waste cover only the collection of waste from their site."
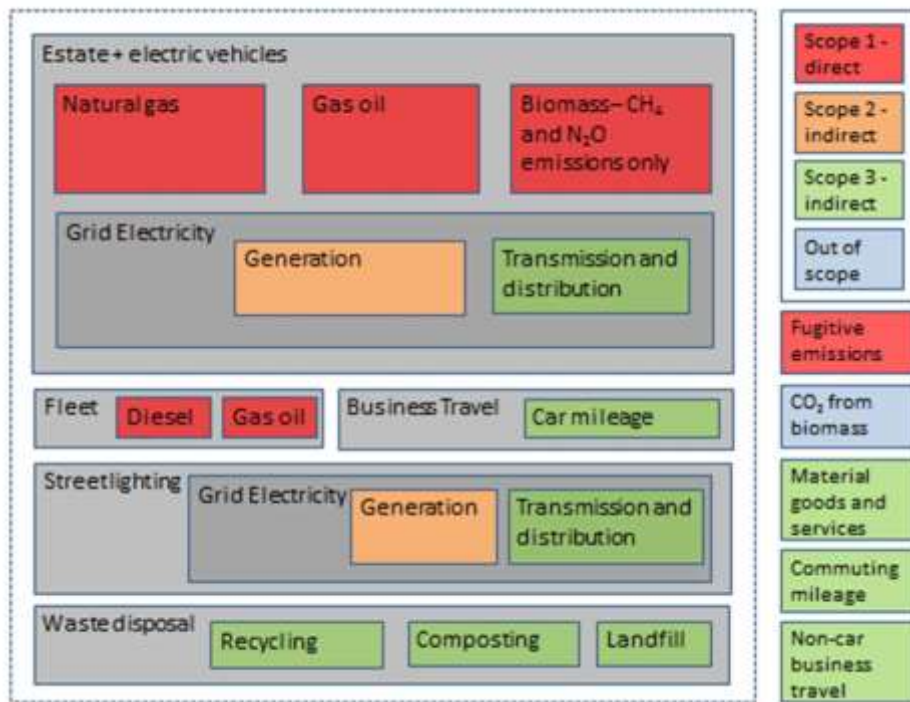
Figure 2: Operational boundary for the Council's carbon footprint 2012-13

3.2 Emissions Baseline and Trends

3.2.1 Baseline Footprint

The baseline year for this Plan is the 2012-13 financial year. The original baseline year in the Council's first Carbon Management Plan was 2006-07 but due to improvements in data quality and changes in emission calculation procedures, it was decided that 2012-13 was a more appropriate year. Based on the scope outlined above, the Council's carbon footprint baseline was 32,420 tCO$_2$e.

The methods used to source consumption data, and apply emission factors to convert it into tonnes of carbon dioxide equivalent (tCO$_2$e), are described in Appendix A: Standard Operating Procedures.

The graphs below illustrate the components of that footprint in terms of carbon emissions and cost.
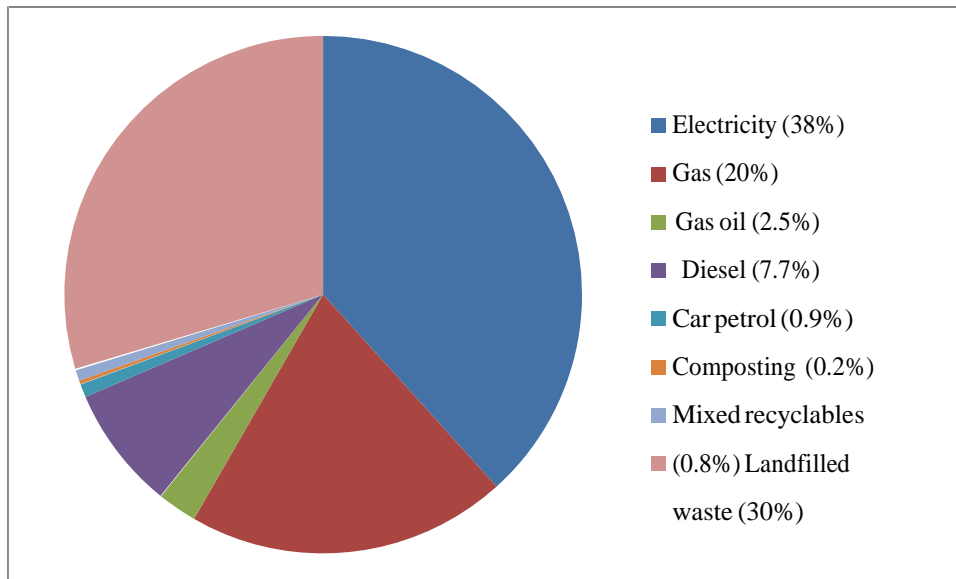
Figure 3: Breakdown of baseline carbon footprint by carbon emission sources

Figure 3 shows that the greatest contributor to the organisation's carbon footprint is electricity, which accounts for 38% of the footprint; this is followed by landfilling of waste, which contributes 30%. Reduction of building energy consumption and landfilling of waste are therefore priority areas of action; however, reductions in the other categories are also important and will contribute to an overall decrease in the total carbon footprint.

3.2.2   2013-14 Footprint

The Council's carbon footprint for 2013/14 was calculated to be 27,521 tCO_2e, which represents a substantial reduction of 15%. It is likely that this significant fall in carbon emissions is partly due to the fact that the baseline year included a cold winter, and partly due to the fact that some significant projects were implemented during 2013/14. The graphs below illustrate the components of that footprint in terms of carbon emissions and cost.
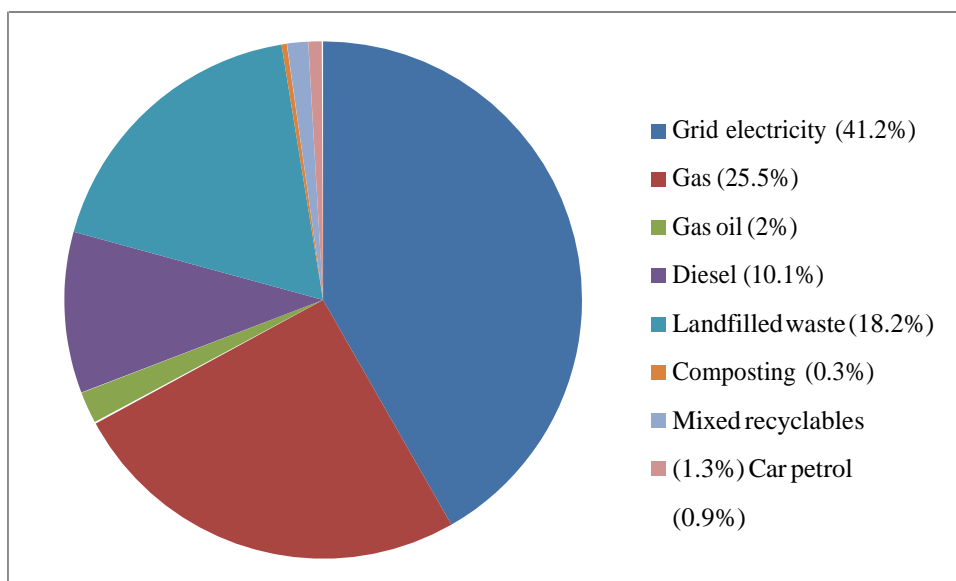

Figure 5: Breakdown of baseline carbon footprint by carbon emission sources

Figure 5 shows that the greatest contributor to the organisation's carbon footprint is still electricity, which accounts for 41% of the footprint; this is slightly higher than the proportion of the footprint that this emission type constituted in the baseline year but not in absolute terms. The second-highest contributor is natural gas; this is higher than the previous year, both in relative and absolute terms. Conversely, emissions from landfilling of waste have significantly decreased; they constitute only 18% of the 2013/14 footprint, as opposed to 29% of the baseline footprint, and this represents a significant reduction in absolute terms. (During 2013/14, two significant waste projects were introduced (see Section 4)).

3.3 Projections

3.3.1 'Business As Usual'

After establishing the Council's carbon footprint, the next stage is to consider what would happen, from both a carbon and cost point of view, if no action were taken, i.e. in a 'business as usual' ('BAU') scenario.

Using the Carbon Footprint Project Forecast Tool, an analysis was conducted to track carbon emissions against various growth variables into the future. This analysis included an assumption that there will be a gradual decarbonisation of the Grid, i.e. that emissions from each kWh of electricity that the Council uses will gradually reduce. The analysis also took into account local information about likely future changes, e.g. the planned closure of some buildings and anticipated increase in use of others.

As shown in the following graph, it is projected that under a BAU scenario, the Council's carbon footprint would naturally reduce from 32,420 tCO₂e in the baseline year to 27,533 tCO₂e in 2020:
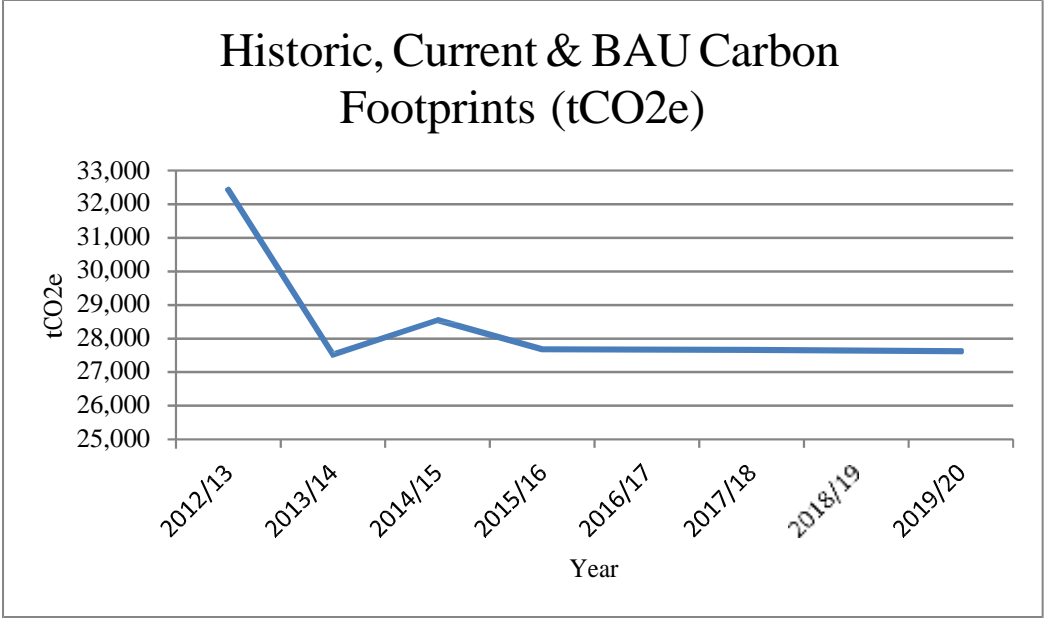
Figure 6: Projected carbon footprint under BAU

Given that such a large proportion of the Council's footprint results from electricity consumption, which is expected to decarbonise over time, primarily due to the Scottish Government's decarbonisation targets, it is it is not surprising that the footprint is expected to fall naturally in the absence of any dedicated carbon reduction projects.

The predicted fall in carbon emissions is not, however, expected to be accompanied by a corresponding fall in costs; while future costs of fuel are unknown, it is conceivable that unit

prices may in some cases rise over time, and it is known that the additional costs generated by the Carbon Reduction Commitment and the Landfill tax will increase.

3.3.2 Reduced Emissions Scenario

Building on the BAU prediction, the Carbon Footprint Project Forecast Tool then analysed the likely impacts of planned carbon reduction projects (as described in Section 4) – the 'Reduced Emissions Scenario' - calculating that, in carbon terms, an annual footprint of 24,019 tCO_2e will be achieved by 2019/20 if the projects are implemented as planned:
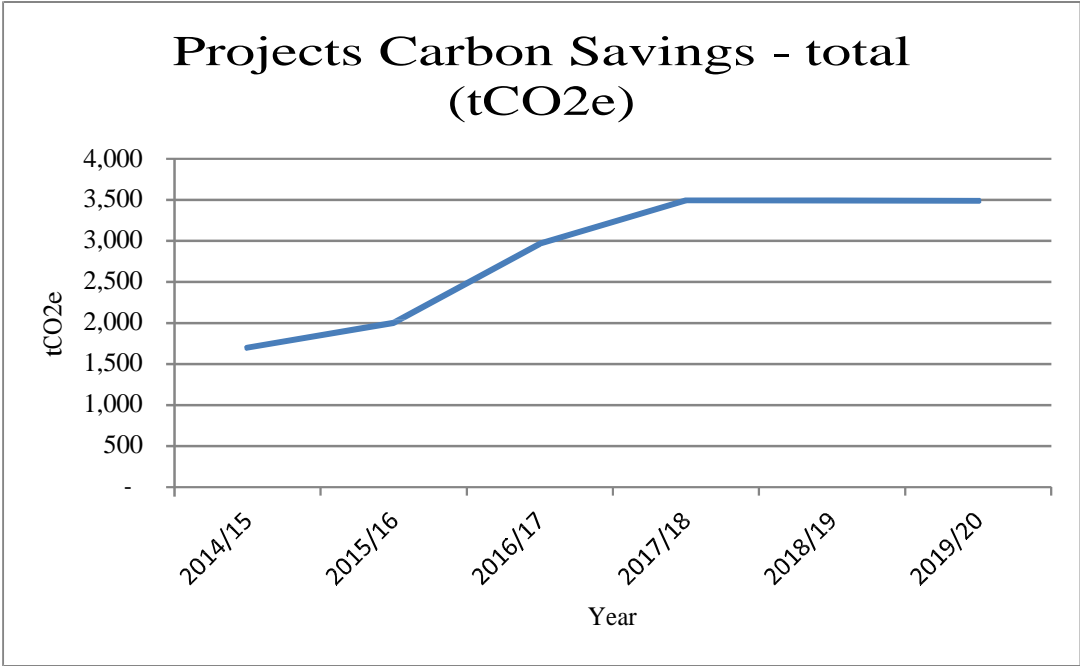

Figure 7: Projected carbon savings under Reduced Emissions Scenario

(It should be noted that further future carbon savings are likely to be identified as projects become planned for 2017/18 and beyond; these will be discussed at CMOG meetings (see Section 6) and reported on via the annual report process set out in Section 7).

Carbon emissions have significant cost implications; this can be illustrated by looking at electricity consumption. In 2013/14, the Council paid 11.67p for electricity and the total annual electricity consumption was 7,899,394 kWh; this rate of consumption corresponds to a total cost of £921,859 on energy bills alone, and a significant portion of this consumption was also subject to Carbon Reduction Commitment charges.

3.4 Target

Based on the projected carbon reductions that will occur naturally under BAU, and the additional reductions that the current and planned projects will deliver, it is estimated that, by the end of the lifespan of this Plan, the Council's annual carbon footprint could be reduced to 24,019 tCO_2e; this represents a reduction of 8401 tCO_2e compared to the 32,420 tCO_2e emitted in the baseline year, equating to approximately 25% of the baseline footprint. To allow some flexibility, a 20% reduction is considered a reasonable target.

> East Dunbartonshire Council will reduce its annual carbon footprint by 20% by the end of 2019-20 compared to the 2012/13 baseline carbon footprint

To ensure that this target remains relevant and achievable, it will be reviewed at the mid-point of the plan or in the event of any major changes such as significant expansion or contraction of the Council's estate.

4 Carbon Management Projects

4.1 Introduction

In order to continue achieving emissions reductions and avoiding financial exposure, the Council is committed to identifying and implementing carbon saving projects. Achieving our emission reduction target of 20% will require an absolute reduction of 8401 tCO$_2$e against the 2012/13 baseline carbon footprint.

In line with the variety of emission sources that contribute to the Council's carbon footprint, the range of projects identified in this section span a number of Council services; in addition to 'traditional' carbon-saving initiatives such as low-energy lighting in buildings, interventions in other areas are included, e.g. ICT upgrades and fleet replacement.

The list of projects is dynamic; it is regularly updated in response to changing circumstances and emerging opportunities. As such, the information presented here is a summary of key projects; the full register, which includes data on carbon and cost and identifies responsible officers, is held in the Carbon Footprint Project Forecast Tool and related documents. The register will be reviewed as a routine aspect of Carbon Management Officers Group meetings, discussed in Section 6 and in Appendix A.

It should be noted that projects are only included in the register where carbon savings can be predicted with confidence and quantified with a sufficient degree of accuracy; there are various past, current and future Council activities which are expected to contribute to carbon reduction but for which detailed estimates have not been possible to obtain. These include the installation of pool covers in all leisure centres during financial year 2013/14. While such activities are not listed in the register, any carbon benefits that they deliver will be captured in the carbon footprint data that is gathered following their introduction.

The projects highlighted in this section are activities that have been carried out after the baseline year of 2012/13; as acknowledged earlier, many measures were taken prior to this date with ongoing benefits.

4.2 Existing Projects

The following lists provide examples of projects that have already been completed or implemented since the organisation's 2012/13 baseline carbon footprint was calculated. The carbon emission savings achieved by these schemes will therefore have already contributed towards the Council's initial reduction target and corresponding savings are therefore included in the carbon footprint for 2013-14.

4.2.1 Energy Use in Buildings

- Window replacement at William Patrick Library (2013/14)

- Replacement lighting at Allander Leisure Centre (2013/14)

- Installation of solar PV panels at Boclair Academy and Lenzie Academy (2013/14)

4.2.2 Street Lighting

- Initiation of major street lighting replacement programme (Salix-funded): conversion of 1200 units (2014/15)

4.2.3 Transport

- Replacement of 21 fleet vehicles with reduced-emission models (2013/14)

- Replacement of 11 social and educational transport vehicles at Euro 4 standard with Euro 5 models (2014/15)

4.2.4 Waste

- Move from recycling boxes to 2-bin co-mingled collection (2013-14)

- Introduction of domestic food waste recycling (2013-14)

- Introduction of optional recycling to commercial customers (2014-15)

4.3 Planned Future Projects

The following lists provide examples of future projects for which funding has been confirmed.

4.3.1 Energy Use in Buildings

- Installation of solar PV panels at Bearsden Academy, Bishopbriggs Academy, Douglas Academy, Kirkintilloch High, St Ninian's High and Turnbull High (2015/16)

- Installation of biomass boilers at Castlehill, Clober, Gartconner & Oxgang Primaries and Boclair and Lenzie Academies (2015/16)

- ICT upgrade: introduction of internet access controls (2016/17)

4.3.2 Street Lighting

- Continuation of major street lighting replacement programme: conversion of 8000 units (2015/16 & 2016/17)

4.3.3 Transport

- Ongoing fleet vehicle replacement (annual)

- Introduction of Eco-Driver training (planned for 2014-15)

4.4 Supporting Activities

In addition to projects that directly deliver carbon savings, various 'enabling' measures are in place to support current and future carbon reduction projects; key ones are listed below.

4.4.1 Corporate Governance of New Policies, Plans and Programmes

The Council's approach to Strategic Environmental Assessment (SEA) supports carbon management by providing a strategic, organisation-wide process for encouraging services to be more sustainable.

Policies, plans, programmes, strategies and masterplans ('PPSs') are required to be written and amended with reference to the Council's Policy Development Framework and Committee Checklist – these tools will be developed, through the Sustainability and Climate Change Framework, to provide a means of ensuring that PPSs adhere to legislative and corporate requirements relating to carbon, including the public bodies duties under the Climate Change (Scotland) Act 2009. The Checklist should be completed prior to the production of any PPS, and accountability rests with the relevant policy officer and Director.

The Business Improvement Plan (BIP) process also includes a mechanism for encouraging carbon considerations in strategic documents; the Council's BIP Guidance includes a requirement for sustainability to be reflected in all BIPs, with draft plans being vetted by the Sustainability Policy Team.

The Council's new programme management process, overseen by the Programme Management Office (PMO), will also support the carbon management (and wider sustainability) agenda by requiring considerations to be made in the early stages of project development. Officially termed the "End-to-End Project Lifecycle", the process provides support from the inception stage through to project delivery, using workshops, guidance notes, templates and in-person feedback; the Sustainability Policy Team will work with the PMO to build sustainability requirements, including carbon considerations, into the template, guidance and document vetting process.

4.4.2   Corporate Procurement

Although corporate procurement currently falls outwith the scope of this Plan due to the current difficulty in calculating accurate data, it is a key influence on some of the activities that do fall within the Plan's scope. As such, commitment has been made at the strategic level – in the Council's Procurement Strategy and Sustainable Procurement Policy – to sustainable procurement, and this translates into measures embedded within the procurement process to reduce carbon emissions associated with the purchase of goods and services, e.g. a requirement for information on potential contractors' environmental policies at the tendering stage, and the rationalisation of delivery journeys. Further measures are being planned through the Council's forthcoming Sustainability and Climate Change Framework.

4.4.3   Corporate Asset Management Planning

Energy consumption in buildings accounts for the largest proportion of the Council's carbon footprint. The Council's Corporate Asset Management Plan (CAMP) recognises the scope for significantly influencing performance and seeks to minimise carbon emissions via a variety of measures such as the commitment to install solar pv and biomass in every new school; the CAMP is comprised of Service Asset Management Plans (SAMPs) and it is intended that, in the future, each SAMP will include comment as to how they will comply with the objectives of the Carbon Management and will set out the capital investment that will be required to deliver on this; while there are no guarantees that funding will be made available, this is the basis on which investment decisions would be taken.

4.4.4   Staff Awareness-Raising

Education is a crucial component of any agenda requiring behaviour change; staff buy-in, at all levels and in all corners of the organisation, will determine the success of this Plan, and achieving meaningful behaviour change requires participants to understand the importance of the carbon management agenda and be motivated to participate. The measures that will be taken to raise awareness are set out in Section 6.

4.4.5   Staff Travel Planning

The Council's Transport and Access Team includes a Transport Development Officer, whose remit includes facilitating staff transport to and from work by means other than private cars. While the biggest impact of this will be in relation to commuting patterns, which are currently excluded from the scope of this Plan, it is expected that business travel patterns will also benefit, with a move from use of personal cars for business mileage to the use of Council fleet vehicles (which are generally more carbon-efficient) and non-car-based travel.

5 Carbon Management Plan Financing

As detailed earlier, there is a strong business case for carbon management, and financial savings are a key aspect of this. While financial savings from carbon reduction investments can never be guaranteed, the basic premise of carbon management is one of resource efficiency, and financial efficiency goes hand-in-hand with this; using resources creates costs, with every gain on the resource-user's part being matched with a cost. When carbon is used, the costs are high; we are increasingly aware of the serious damage that carbon emissions cause. While many of these costs are externalised, i.e. not borne by the resource user, they are always borne somewhere, and often by people who are already disadvantaged. Increasingly, such costs are becoming internalised, i.e. paid by the polluter/ resource user, e.g. through mechanisms such as the CRC. While carbon reduction activities often require upfront investment, the savings that they generate will often outweigh the costs.

A forward-thinking, ethical approach to organisational finances will therefore ensure that these costs are recognised and, where possible, avoided by reducing the amount of carbon we use. While many of our financial processes are dictated by market forces and legislation/policy over which we have no immediate, direct control, there are several measures that we can take to align carbon efficiency with financial efficiency, creating financial benefits and preparing us for the future.

This section provides an overview of the main mechanisms that the Council will use, from a financial point of view, to recognise and target wasteful carbon emissions and to ensure that funding is available, where required, to finance carbon reduction projects. These measures are supported by the Carbon Footprint Project Forecast Tool, which calculates the payback period and carbon cost effectiveness of each project, to ensure that the net financial benefits are clear; this is partly based on carbon-saving estimates for each project, which are calculated with a rigorous and conservative approach (full workings, including assumptions and rationale, are recorded in a separate document which sits alongside this one).

It is important to note that the savings we make will be relative savings, not absolute ones; in absolute terms, costs are expected to rise but by investing in carbon reduction, we will incur significantly fewer costs than we would if we did nothing.

5.1 Revenue Measures

Energy and fuel bills are financed from the Council's revenue budget. Management reports are produced by the Finance Team for each Directorate on a monthly basis, highlighting variations on utilities spend; this information is also sent to the Council's Energy Officers, who monitor consumption and will react to instances of excessive or unpredicted consumption.

Most corporate utility use within buildings, and related CRC costs, are funded from centralised revenue budgets. However, for Education and Social Work, budgets for utility bills have been devolved.

Most corporate utility use within buildings, and related CRC costs, are funded from centralised revenue budgets

Utility use in buildings occupied by the East Dunbartonshire Leisure & Culture Trust are paid for by the Trust, although CRC costs relating to these buildings continue to be covered by the Council.

Revenue generated by the Council's solar PV and biomass installations, via the Feed-In Tariff and the Renewable Heat Incentive respectively, is offset against fuel bills, thus lowering costs.

5.2 Capital Measures

While the dedicated 'Energy Spend To Save' budget managed by the Climate Change Team is no longer in place, the Council's capital funding process continues to reflect the ethos that investing in carbon efficiency pays off, supported by the aforementioned measures in the Policy Development Framework and PMO, which encourage consideration of carbon efficiency from the outset of projects.

Additionally, the Council currently has an approved 10 Year Capital Programme which is regularly refreshed based on revised timescales, priorities and available funding. Some funding has been allocated for "Energy Spend to Save and Carbon Reduction", with the stream currently standing as follows:

15/16 - £50,000
16/17 - £50,000
17/18 - £50,000
18/19 - £200,000
19/20 - £200,000
20/21 - £200,000
21/22 - £200,000
22/23 - £200,000
23/24 - £200,000
24/25 - £175,000

Projects require to be assessed on their own merit depending on a number of criteria, but spend-to-save projects are usually looked on favourably.

The overall Capital Programme is managed by Development & Regeneration, and projects are initially assessed via presentation of a Business Case which is prioritised by the Corporate Asset Management Group (CAMG). It is intended that discussions would take place at the Carbon Management Officers Group (see Section 6) to identify potential carbon reduction projects for CAMG approval, and to contribute to the development of specifications for major projects.

5.3 External Funding

Funding for carbon reduction projects is available from a variety of external sources.

5.3.1 Central Energy Efficiency Fund (CEEF)

The CEEF was launched by the Scottish Government in 2004 for all Scottish local authorities and health boards as well as Scottish Water and provides rolling funds that are administered at a local level– initial funding is provided to initiate energy efficiency and renewables projects that generate financial savings, and these savings are then rolled back into the fund and used to pay for further projects of the same nature. The Council has already benefitted from CEEF funding and plans to continue to use it, e.g. for the air handling unit upgrade at the Leisuredrome.

5.3.2 Salix Fund

Salix is a UK Government-backed soft loan fund that aims to increase capital investment in energy efficiency technologies across the public sector. It is a ring-fenced fund with capital provided by Salix, and matched by the partner organisation, to be spent on energy-saving projects with paybacks of less than 7 years, for future applications by any organisation. The financial savings delivered by the projects are returned to the fund to allow further spend on similar initiatives. East Dunbartonshire Council is benefitting from Salix funding in relation the aforementioned street lighting replacement work.

5.3.3 Prudential Borrowing

Prudential Borrowing provides a flexible borrowing framework under which Local Authorities have the power to borrow for capital expenditure as long as it can be demonstrated it is affordable, prudent and sustainable. This framework accommodates schemes which require upfront investment but save money over the longer term which can then be used to repay associated debt.

5.3.4 Other Sources of Funding

Funds are sometimes announced at short notice to support projects that help to deliver the UK and Scotland's carbon reduction agenda, e.g. relating to electric vehicle charging points and fleet.

Additionally, creative funding vehicles are constantly emerging, e.g. joint ventures and energy service companies (ESCOs).

External funds already allocated to the Council may also be available for carbon reduction projects; Air Quality Management Area funding is one such example.

To ensure that such opportunities are kept abreast of and given due consideration, regular communications will be held between relevant officers, including through meetings of the Carbon Management Officers Group (see Section 6), at which funding will be a standing item.

6 Management and Delivery

In order to ensure effective ownership and implementation of the Carbon Management Plan, it is important to have a fully defined governance structure and a clear outline of the practical arrangements for delivery.

6.1 The Carbon Management Officers Group

The Carbon Management Officers Group (CMOG) will have responsibility for the strategic direction and implementation of the CMP.

The CMOG will be convened by the Sustainability and Climate Change Officer and will meet 3 times a year, with one-to-one meetings and informal liaison taking place between members outwith these dates.

While meeting agendas will vary, certain standing items (some occurring once a year and others occurring more frequently) will be agreed in advance; these will include the approval of the annual report, discussions regarding funding opportunities, and consideration of existing and potential future projects, to ensure that actions are sensible, focussed on appropriate aspects of the Council's footprint and being delivered on schedule.

To support the group's activities, monthly consumption/emission figures will be analysed in detail to identify trends and anomalies.

While CMOG membership will to an extent be fluid, the following staff have been identified as key members:

Officer(s)	Current Name(s)	Area of Expertise
Sustainability Policy Team Leader	Sylvia Gray	Overall co-ordination of Carbon Management Plan
Sustainability & Climate Change Officer	Fiona Munro	Overall co-ordination of Carbon Management Plan
Energy Officer	Paul Slevin	Energy management in buildings
Team Leader Infrastructure and Development	Simon Rear	ICT
Senior Lighting Technician	John Rattray	Street lighting
Fleet Manager	Manny Barlow	Fleet management
PMO Leader	Natasha Davidson	Business mileage
Waste Compliance Officer	Stephen Dickie	Waste management
Team Leader – Contracts and Commercial Support	Jacqui Campbell	Procurement
Accountant	John McConnell	Finance
Communications Adviser	Alan Muir	Communications

Input from elsewhere in the organisation will be gained through the ongoing communications that CMOG members have with other key officers e.g. the PMO and leisure centre managers.

Minutes of CMOG meetings will be reported to the Director of Development and Regeneration, who will subsequently report to the Corporate Management Team; feedback will be provided as appropriate.

The operation of the CMOG will be supported by processes set out in the Standard Operating Procedures (see Appendix A).

6.2 Other Key Roles and Responsibilities

In addition to the key roles played by CMOG members and officers involved in the 'supporting activities' outlined in Section 4, the following parties will play a key role in the successful implementation of the Carbon Management Plan.

Carbon Management Plan Sponsor

The Director for Development and Regeneration will champion the project and have ultimate responsibility for strategic direction and for agreeing budgets outside those already available.

Elected Members, Chief Executive, Directors and Managers

The Carbon Management Plan will be supported by the Council's key decision-makers, demonstrating endorsement and commitment at the highest level and reinforcing the importance of cross-Council responsibility and action.

Facilities Management

A key part of the remit of Facilities Maintenance is to ensure the efficient running of Council buildings; as such, they will play a crucial role in the implementation of this Plan.

Green Office Champions

The Council's network of Green Office Champions has an important opportunity to support the successful implementation of the Carbon Management Plan by creating a mechanism for two-way communication of carbon management ideas and information between the CMOG and the wider workforce.

6.3 Partnership Working

The Council is working, and will continue to work, with a number of partners who provide important support in relation to this Plan; this includes Zero Waste Scotland, Scotland Excel, Transport Scotland and other councils/wider public sector organisations via the Sustainable Scotland Network.

6.4 Communications

Awareness-raising and empowerment across the workforce will underpin the successful delivery of this Plan. This is reflected in the structure of the CMOG, where Corporate Communications will be represented to ensure that communications are an ongoing priority within the carbon management process.

Various groups can be identified, each with different information needs:

- Elected Members
- Senior managers
- Green Office Champions
- Staff with a key role in building management and energy use
- Schools (teachers and pupils)
- All other staff
- Carbon reduction partnership organisations
- General public

The Sustainability Policy Team will support the process through the Sustainability and Climate Change Framework. A fundamental aspect of carbon management communications will be the provision of opportunity for two-way dialogue, to allow staff to share ideas and feedback.

7 Progress Reporting

7.1 Dedicated Carbon Management Plan Reporting

Carbon management is viewed as a live agenda and it is envisaged that circumstances may vary over the course of the document's lifespan. To ensure that the CMP remains fit for purpose to deliver targeted carbon savings, the document will be reviewed and reported on annually. This process will be overseen by the CMOG and coordinated by the Sustainability Policy Team.

Specifically, an Annual Carbon Management Report will be produced, covering the following areas:

- Overall carbon footprint, with discussion of progress towards overall carbon reduction target

- Progress of specific carbon reduction projects

- Net financial impacts of carbon reduction projects

- Progress of supporting activities

- Review of whether scope and target remain relevant

Any identified need for further action will be taken forward either via the Carbon Footprint Project Forecast Tool, which is subject to ongoing updates, or, in the case of supporting actions, via the next revision of this CMP.

The review will be agreed at the CMOG and presented to the Corporate Management Team; when approved, it will be submitted to Development & Regeneration Committee. The approved document will placed on the Council's website.

The production of the Annual Carbon Management Report will be underpinned by the processes set out in the Standard Operating Procedures (Appendix A).

7.2 Embedding in Existing Reporting Structures

In addition to the dedicated reporting arrangements described above, updates on progress of the Plan will also be embedded in existing reporting systems and procedures; this will be developed through the Sustainability and Climate Change Framework.

Key aspects of CMP progress will also be included in the Council's reports submitted to the Scottish Government under the forthcoming Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Order 2015, which will be introduced in 2016. Due to the overlap between the expected contents of the CMP report and the climate change required reporting, the two processes will be aligned, with reports being submitted together for approval at autumn Committee meetings.

Appendix A: Standard Operating Procedures

Scope

This appendix details the processes that will be followed to ensure that East Dunbartonshire Council's carbon management reporting is robust and reliable.

These procedures apply to all staff within the organisation with responsibility for compiling/submitting data in relation to the following areas: energy (including street lighting); waste; transport – fleet; and transport – business travel.

These procedures will be reviewed on an annual basis.

Responsibilities

The Sustainability and Climate Change Officer (SCCO) has the lead responsibility for ensuring that progress with the organisation's Carbon Management Plan (CMP) is tracked and reported in accordance with these procedures. In turn, this creates responsibilities for other parties within the Council, as detailed below.

The SCCO is responsible for ensuring that the data required for reporting purposes is collated and uploaded within the timescales detailed in this document and that draft report text is shared with and approved by CMOG members prior to finalisation.

CMP Data Collection & Reporting

At the beginning of each reporting year, the 'responsible individuals' for provision of data with respect to annual carbon footprint progress reporting and carbon reduction project progress reporting are to be identified by the SCCO.

For accounting purposes, the 'financial year' runs from 1 April to 31 March.

Carbon Footprint Recording

'Key data owners' are described in the table below; data will be gathered by the SCCO from each party on a quarterly basis. (This table will be updated annually, in liaison with the relevant parties).

Data	Source & Format	Owner	Timing
Energy consumption data for buildings (electricity, natural gas and gas oil[6] usage).	Annual reports produced for Carbon Reduction Commitment (CRC) purposed, using adjusted data from SystemsLink*. SystemsLink can also be accessed at any time; Excel reports can be	Energy Officer: currently Paul Slevin paul.slevin@astdunbarton.gov.uk 0141 574 5551 (SCCO also has access: currently Sylvia Gray sylvia.gray@eastdunbarton.gov.uk 0141 578 8655)	CRC reports produced annually, by end July. Bespoke (unadjusted) reports available instantly.

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[6] It should be noted that the 'gas oil' deliveries recorded at Broomhill and Hilton Depots actually relate to red diesel used by Council vehicles (off-road vehicles and plant equipment on roadworthy vehicles) and are recorded in the fleet and machinery fuel usage figures; they should not therefore be double-counted as relating to building energy consumption.

	produced on demand.		
Street lighting electricity consumption data	Annual total consumption and cost estimates produced, based on actual figures from previous financial year[7]; recorded on RMMS system. Standard monthly figure generated by dividing annual total by 12.	Senior Lighting Technician: currently John Rattray john.rattray@eastdunbarto n.gov.uk 0141 578 8603	Annual data usually available around July.
Biomass used by the Council	For 'ESA' RHI installations, monthly heat generation reports are produced, based on meter reads. For non-ESA RHI installations, quarterly heat generation reports are produced. . For non-RHI installations, fuel consumption data is used to calculate heat generation. (Data is also available via Excel spreadsheets ('reports') generated by SystemsLink).	Energy Officer: currently Paul Slevin paul.slevin@ astdunbarton .gov.uk 0141 574 5551 (SCCO also has access: currently Sylvia Gray sylvia.gray@eastdunbarton .gov.uk 0141 578 8655)	Quarterly data available within one month of period-end.
Renewable electricity generated by the Council's solar pv installations	For FIT installations, quarterly data re kWh generated is recorded in FIT payments spreadsheet. For non-FIT installations, consumption is calculated by comparing meter readings.	Energy Officer : currently Paul Slevin paul.slevin@ astdunbarton .gov.uk 0141 574 5551 (SCCO also has access: currently Sylvia Gray sylvia.gray@eastdunbarton .gov.uk 0141 578 8655)	Quarterly data available within one month of period-end.

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[7] Figures are calculated in this way because street lighting electricity consumption is unmetered

Waste collected by the council	Monthly tonnage figures produced, broken down according to method of treatment (landfill, recycling or composting). Derived from departmental information collated from various sources, including weighbridge tickets and contractor data submissions. (NB – monthly data is subject to change once submitted to SEPA for verification) Monthly figures are collated and sent to SEPA on an annual basis; verification is carried out, and data is reported via the online 'WasteDataFlow' reporting system. NB: - During verification, data submitted by Council may be altered by SEPA - Reporting is done on calendar-year basis, so financial year data provided by Waste Compliance Officer for carbon management reporting consists of SEPA-verified data for April to December and unverified data for January to March; the latter data is manually verified internally (see below) - Annual data for East Dunbartonshire	Waste Compliance Officer: currently Stephen Dickie stephen.dickie@ astdunbar ton.gov.uk 0141 574 5793	Monthly data usually available a fortnight after month-end (dependent on submissions from external parties). Annual data available in March/April (once verified by SEPA).

	Council verified and published by SEPA covers household waste only		
Business mileage	Quarterly reports showing total number of miles travelled by employees, compiled on iTrent system	HR Services Lead: currently Fiona Mackay fiona.mackay@eastdunbart on.gov.uk 0141 777 3025	Reports produced for corporate review on 4-weekly basis.
Fleet and machinery fuel usage (diesel and 'red diesel' ('gas oil'))	Consumption data gathered for each vehicle and user via Triscan Phoenix Fuel Management System; monthly, Excel-based reports are compiled.	Transport Operations Team Leader: currently David McClelland david.mcclelland@eastdun barton.gov.uk 0141 574 5789	Monthly data available a fortnight after month-end.
'Existing properties' update	Annual updat on existing properties to indicate recent and anticipated changes (e.g. openings, closures, changes in operational hours, etc), including a) list of buildings that opened or closed in previous year and b) dates of all changes and expected impacts on energy consumption**	Estates Management Team Leader: currently Graeme Lynn graeme.lynn@eastdunbarto n.gov.uk 0141 578 8639	Information to be provided by end of June every year.
'Forthcoming buildings' update	List of forthcoming buildings with details – where available - of a) expected energy consumption broken down by fuel-type, or with details of approximate floor area, to allow estimates and b) planned renewables installations	Major Asset Projects Team Leader (for information on major projects): currently Iram Mohammed iram.mohammed@eastdun barton.gov.uk 0300 123 4510 (ext. 3836) / 07788 368 490 Capital Programme Manager (for information on smaller-scale projects and refurbishments): currently Fraser Robb fraser.robb@eastdun barton.gov.uk 0141 578 8621 / 07825 754 618	Information will be updated on a continuous, live basis (as it becomes available) via spreadsheet stored on shared drive; this will be checked by the SCCO on a monthly basis

* Consumption data held on SystemsLink is sourced in different ways; data sourced from invoices, which is used for CRC reporting and internal 'Covalent' reports, has been adjusted upwards by 8-9% to correct transmission losses.

** Any 'irregularities' identified during this process (e.g. properties appearing on SystemsLink which are excluded from the footprint due to known errors in billing) will be logged for reference. Any calculations carried out by the SCCO on raw consumption data will be logged to provide a clear record of how final figures have been sourced.

To ensure that the data is accurate, verification will be carried out. Methods of verification vary according to the type and source of data:

- ◻ Building energy use data – Energy Officers routinely validate at least 50% of data
- ◻ Street lighting – data is routinely updated and reviewed by Roads & Neighbourhood Services
- ◻ Fleet fuel use data is sourced from Triscan Phoenix software and is based on fuel card and delivery information and is therefore already verified
- ◻ Business mileage data is sourced from the Payroll Team and is verified by managers prior to submission to the Payroll Team
- ◻ Waste data is sourced from Waste Data Flow Sheets submitted to, and validated by, SEPA. As explained above, this is done on a calendar year basis, meaning that data for the last quarter of each financial year (January – March) is unverified by SEPA at the time of being obtained for carbon footprint recording; however, all data is verified internally on a monthly basis by Waste Services, after being collated by Shared Services, providing assurance of its integrity.

As indicated above in relation to existing properties , part of the footprint data-gathering procedure involves noting any anticipated changes to energy/fuel consumption under 'Business as Usual'. In addition to the predictions recorded in relation to the Council's estate, the other officers identified in the above table will also be asked to estimate any likely changes over the forthcoming year, e.g. an expected increase in fleet-related emissions, and to identify any activities over the previous year which may have had the same effect. To inform this process, officers will be encouraged to consider the influence of factors such as forthcoming legislation, policy and service delivery requirements.

This data will be collated by the SCCO and, within 10 weeks of financial year-end, entered into the relevant section of the Carbon Footprint Project Forecast Tool, generating an annual carbon footprint which will, in turn, inform the Annual Carbon Management Report and the annual report required under the Climate Change (Duties of Public Bodies) (Scotland) Order 2015. The method of calculating the annual footprint will be consistent with that used for calculating the baseline footprint; any deviations or alterations will be noted. As an additional validation measure to supplement those described above, spot-checks will be performed by the Sustainability Policy Team Leader once data has been entered into the toolkit, to provide confidence that it has been input accurately.

The emission factors used to convert the above data into a CO2e figure are issued annually via the UK Government (Defra/DECC)'s Greenhouse Gas Conversion Factors for Company Reporting and are consistent with the GHG Protocol: http://www.ukconversionfactorscarbonsmart.co.uk It should be noted that they are calculated on a calendar year basis and are therefore not a complete match for the financial year approach taken in the CMP. The conversion factor used in the CMP for each financial year is the one relating to the earlier of the 2 calendar years that the financial year covers, as this is the year on which the majority of the calendar year's months fall.

Cost Recording

While preparing the annual carbon footprint, the SCCO will consult with each of the key data owners listed above, and with the relevant accountant (currently John McConnell) dealing with the revenue budget, to gather records of the annual costs associated with each element of the footprint . This process will begin in May. Any calculations carried out by the SCCO on the raw data provided by the Finance Team Leader will be logged to provide a clear record of how final figures have been sourced.

As part of the cost calculations, it is necessary to record whether each emission source is subject to the Carbon Reduction Commitment (CRC) Energy Efficiency Scheme criteria (as set out below) and therefore whether it is subject to the costs associated with this scheme. This must be done on an annual basis, as properties can fall in and out of eligibility depending on fuel consumption levels. While electricity-based CRC eligibility is relatively stable (changing only if a meter is replaced with one of a different size/profile), gas-based eligibility can change year-on-year for emission sources whose consumption causes them to be very close to the threshold level; each emission source will therefore be checked by the Energy Officer on an annual basis against CRC eligibility criteria, and any changes will be highlighted to the SCCO. NB - when a building closes, it stops being subject to CRC costs.

Criteria for CRC eligibility:

□ Electricity-based eligibility: meter profiles 1-2 are exempt*

□ Gas-based eligibility: properties with consumption of less than 73,200 kWh are exempt

* For records of meter profiles in each building, refer to CRC report from supplier (look under 'Profile Class') or generate SystemsLink report.

It should be noted that street lighting consumption is subject to CRC charges as of 2015/16, and that oil was made exempt in 2014.

To aid prediction of future costs, information may be required from Corporate Procurement in relation to contracts e.g. for utilities.

Carbon Reduction Projects

To facilitate accurate estimation the costs of forthcoming projects, Service Accountants should be alerted at an early stage so that ongoing (i.e. revenue/maintenance) costs are captured in addition to the capital costs and so that budgets can be brought in line with these projections. The Directorate Finance Team Leader should be contacted in the first instance.

Project owners will provide the SCCO with updates on the progress of existing projects on a quarterly basis, and will inform of new carbon reduction projects within 4 weeks of approval; to aid this process, the SCCO will proactively contact project owners in advance of CMOG meetings to request project updates. Information provided to the SCCO should include details of the project's expected lifetime. Cost information will also be recorded; upfront capital expenditure will be logged, and any ongoing maintenance costs will also be identified. As part of this process, existing projects will be re-examined to identify any maintenance costs not present at the outset, e.g. due to warranty cover.

When compiling the Annual Carbon Management Report and Climate Change Required Report, the SCCO will seek information on any recent or planned projects that may have been missed during the year; this will be done by contacting project owners and issuing an all-staff email.

When liaising with project owners, the SCCO will encourage aspirational, unfunded projects to be considered and highlighted; these will then be presented for consideration in the capital budget-setting process for the following year and will be built into Corporate Asset Management Plan documentation as appropriate.

The SCCO will also liaise with the Council's Programme Management Office (PMO) to capture relevant project information and help to ensure that the relevant projects are subject to the PMO process.

This information will be recorded, in summary form, in the Carbon Footprint Forecast and Projects Tool (with full details being held by the Sustainability Policy Team alongside a list of any calculations carried out on this data) and will be fed into the Annual Carbon Management Report. To capture new projects arising outwith the membership of the CMOG, Council-wide requests for information will be issued at regular intervals.

To aid the identification of projects that will target key emission sources, detailed emission data will be examined; this could include split-column graphs showing a breakdown of the carbon footprint according to emission source.

The expected carbon impacts of new projects will be determined in various ways. For some, calculations will already have been done as part of business case development; for others, this will be done by the SCCO, using a consistent approach across projects, with reference to external guidance and also informed by methods recently employed internally to calculate carbon impacts. To assist this process, it is crucial that accurate information relating to projects is provided, on request, by relevant officers.

If sufficient information is not available to allow such calculations, the project(s) will still be logged for reference; records will also be kept relating to projects that were considered and decided against, and relating to projects that were unsuccessfully attempted.

In addition to information about carbon reduction projects, officers will provide the SCCO with forthcoming 'business as usual' activities that are expected to have an impact (positive or negative) on carbon emissions.

Appendix B: Carbon Reduction Projects

NB – Project list up-to-date at time of publication in 2015.

Project	Year	Cost	Predicted annual carbon saving (tCO$_2$e) in first year*
Buildings			
Window replacement at William Patrick	2013/14	£114,840 (capital funding)	1
Lighting replacement at Allander Leisure Centre	2013/14	£16,000 (capital funding)	19
Solar PV installation at Boclair Academy	2013/14	£74,000 (capital funding)	12
Solar PV installation at Lenzie Academy	2013/14	£156,000 (capital funding)	11
Solar PV installation at Leisuredrome	2014/15	£156,000 (capital funding)	38
Solar PV installation at Bearsden Academy	2015/16	£156,000 (capital funding)	14
Solar PV installation at Bishopbriggs Academy	2015/16	£156,000 (capital funding)	14
Solar PV installation at Douglas Academy	2015/16	£156,000 (capital funding)	13
Solar PV installation at Kirkintilloch High	2015/16	£156,000 (capital funding)	11
Solar PV installation at St Ninian's High	2015/16	£156,000 (capital funding)	11
Solar PV installation at Turnbull High	2015/16	£156,000 (capital funding)	10
Solar PV installation at Lenzie Academy	2015/16	£156,000 (capital funding)	10
Biomass installation at Boclair Academy	2015/16	£239,265 (capital funding)	167
Biomass installation at Castlehill Primary	2015/16	£165,083 (capital funding)	85
Biomass installation at Clober Primary	2015/16	£167,267 (capital funding)	60
Biomass installation at Gartconner Primary	2015/16	£139,588 (capital funding)	51
Biomass installation at Lenzie Academy	2015/15	£355,527 (capital funding)	173
Biomass installation at Oxgang Primary	2015/16	£169,463 (capital funding)	43
ICT			
ICT upgrade: Windows servers	2015/16	£10,000 (capital funding)	7
ICT upgrade: Blox filtering	2016/17	£80,000 (capital funding)	13
ICT upgrade: DMZ consolidation	2014/15	£5,000 (capital funding)	7
ICT upgrade: removal of servers at William Patrick Library	2014/15	N/A	13
Street Lighting			
LED replacement – 'large programme' (Year 1)	2014/15	£250,000 (Salix funding)	144

LED replacement – 'large programme' (Year 2)	2015/16	£1,300,000 (capital funding)	478
LED replacement – 'large programme' (Year 3)	2016/17	£1,300,000 (capital funding)	477
LED replacement – 'small programme' (Year 1)	2014/15	£500,000	36
LED replacement – 'small programme' (Year 2)	2015/16	£500,000	24
LED replacement – 'small programme' (Year 3)	2016/17	£500,000	24
Fleet			
Ongoing fleet replacement	2013/14	£3,374,850 (approx. £2.9m from capital funding and £400,000 from Zero Waste Scotland)	14
Ongoing fleet	2014/15	£2,000,000 (capital funding)	17
Ongoing fleet	2015/16	£2,753,317 (capital funding)	40
Ongoing fleet	2016/17	£811,000	9
New buses for social and educational transport	2014/15	£800,000	20
Waste			
Move from boxes to 2-bin co-mingled recycling collection	2013/14	Available on request	743
Introduction of domestic food waste recycling	2013/14	Available on request	900
Introduction of optional commercial recycling	2014/15	Available on request	56

* Savings in subsequent years may vary slightly due to changes in emission factors