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Interim Carbon Management Plan

2021-23

Contents

Foreword from Convener of Place, Neighbourhood and Corporate Assets Committee

In the foreword of our last Carbon Management Plan, climate change was described as one of the biggest challenges mankind has ever faced. Since then, the agenda has become even more urgent.

In 2018, new evidence on the speed and severity of climate change led the UN Intergovernmental Panel on Climate Change to publish a landmark report stressing the need for urgent and unprecedented action by 2030 to avoid catastrophic impacts. The Scottish Government's subsequent declaration of a Global Climate Emergency was recognised by the Council in June 2021; crucially, we also emphasised the importance of taking action to address it. An ambitious approach to corporate carbon management is one of the key ways that we can do this.

It is not just science and policy that are driving our climate change commitments; public opinion is increasingly demanding government action, and local government is recognised as being a crucial part of the response. This was reflected in the first phase of our Climate Conversation, launched last year, where there was a clear call for the Council to lead from the front. As a carbon emitter and a community leader, East Dunbartonshire Council has an important role to play in tackling climate change, by reducing our own emissions and by setting an example for others to follow.

Our last Carbon Management Plan set a target which we met – and exceeded – and we must now build on this by being even more ambitious. Our emerging Climate Action Plan, due to be published in 2023, will set out a holistic and ambitious approach to mitigating and adapting to climate change, encompassing corporate carbon management. In the interim, this revised stand-alone Carbon Management Plan will take stock of the achievements made over the lifetime of the previous Plan, and will set out how we intend to maintain the momentum between 2020/21 and 2022/23, in preparation for the stretching targets that the Climate Action Plan will set, including the achievement of net zero emissions.

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 reduction.

Councillor Billy Hendry

Convener of Place, Neighbourhood and Corporate Assets Committee

Table of Definitions	
Baseline	The year against which the reduction target has been set - historical period specified for the purpose of comparing GHG emissions
Boundary	Defines the parameters of the carbon footprint. 'Operational boundary' describes the emission sources included in the footprint, and 'organisational boundary' describes the service areas and assets covered.
Carbon equivalents	A quantity that describes, for a given mixture and amount of greenhouse gas, the amount of CO_2 that would have the same global warming potential (GWP) when measured over a 100 year timescale, thus enabling comparison of different greenhouse gases emitted (or saved)
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. For some activities, e.g. units of electricity consumed, the factor changes on an annual basis.
Emission type	The category for the emission source as defined within the 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).
Net zero	Where the total greenhouse gas (GHG) emissions put into the atmosphere would be equal to or less than the emissions removed from the atmosphere.
Scope 1	Direct emissions – emissions from activities owned or controlled by an organisation. Examples include emissions from combustion in owned or controlled boilers and vehicles

Table of Definitions	
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
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 third Carbon Management Plan (CMP), published in 2015, East Dunbartonshire Council stated an aspiration to achieve a reduction target of 20%, based on the 2012/13 carbon footprint baseline, by 2020. This target was achieved early and was consequently revised to 44%, which was met by 2020. A target of 49% reduction by 2021, against the same baseline year, was then set and was also exceeded.

Developments in understanding of the urgency of climate change, and associated changes in regulations and guidance, are now driving the need for accelerated ambition. This fourth version revises the earlier Plan and associated target; while retaining the original baseline year of 2012/13 for consistency, it also introduces a new baseline year of 2019/20, where 18,257 tonnes of carbon dioxide equivalent (tCO_2e) were emitted from the use – in built assets, street lighting, fleet and business travel - of electricity, natural gas and other fuels and from waste disposal.

A target has been set to reduce the Council's total annual carbon footprint by 27% in relation to the new baseline and 59% in relation to the 2012/13 baseline, by the end of financial year 2022/23. Reductions will be pursued through a range of interventions including renewables installations, fleet management initiatives and street lighting replacement work, supported by a range of 'enabling measures' including financial support mechanisms.

The achievement of this target will depend on a variety of teams and officers throughout the Council, including the Sustainability Policy Team who have co-ordinated the preparation of this document and who will oversee its delivery.

Monitoring of progress will be overseen by the Member Officer Group which has been established to oversee the development and delivery of the emerging Climate Action Plan; this will be supported by the Carbon Management Officers Group and co-ordinated by the Sustainability Policy Team, aided by the Standard Operating Procedures of the Plan, which provide a formal framework for carbon data collection and analysis.

1 Introduction

1.1 Vision and Aim

Between 2021-2023, the Council will take an ambitious approach which will reduce emissions and pave the way for further emissions reductions, in line with the zero emissions target dates, and interim targets, that will be set in the emerging Climate Action Plan ('CAP') for East Dunbartonshire

The main aim of this plan is to reduce carbon emissions in line with the target, via a whole-organisation approach where carbon management is recognised as an intrinsic part of core business and is fully integrated into the Council's, with responsibility embedded across all services.

1.2 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 10 Executive Areas which collectively employ approximately 4,500 staff. The Council has an estate of approximately 160 sites, ranging from offices, schools and leisure centres to community halls and sports pavilions.

Building on a history of energy and fuel efficiency commitments and actions, East Dunbartonshire Council formalised its approach to carbon management in 2008 via its first Carbon Management Plan, which was revised in 2015 in response to improvements in data availability and quality. The revised Carbon Management Plan used 2012/13 as its baseline year and set a target to reduce the baseline carbon footprint of 32,420 tCO_2e by 20% by the end of 2019/20. This target was significantly exceeded ahead of time – in 2018/19 - and was subsequently extended to 44% during the last year of the intended lifespan of the Plan; this target was met. The lifespan of the Plan was then extended by a year and a 49% target was set against the same baseline; this was exceeded, with a 52% reduction being recorded by the end of 2020/21.

1.3 Revised Approach

While significant amounts of carbon have already been reduced by the Council following the introduction of the first Carbon Management Plan, advances in science, technology, legislation and policy require – and enable - further reductions to be achieved, and there is a clear expectation for the public sector to show leadership in reducing emissions as quickly as possible.

The CAP will respond to these requirements, setting a target date for reaching net zero emissions across East Dunbartonshire and zero direct emissions from the Council's own operations. It will also set out the interventions required to meet these targets and to achieve interim targets including the need to achieve a 75% reduction in emissions by 2030 or earlier. While further work is required in order to assess the scale of reduction required in relation to the Council's footprint, initial indications suggest that meeting this 75% target will require a step-change in the extent of corporate emissions reductions between now and 2030. Corporate carbon reduction will therefore be encompassed within the wider climate change agenda, rather than being covered by a stand-alone document. In the interim period, however, the preparation of this revised Carbon Management Plan for 2021-23 provides an opportunity to lay the foundations for, and begin to deliver on, the increased ambition required to meet future targets.

Advances in the availability of data have also facilitated a more comprehensive view of the range of activities considered appropriate for inclusion within the scope of the Council's carbon footprint.

This revised Plan responds to these factors, presenting a more ambitious and holistic approach to corporate carbon management which brings additional emission sources into scope and which sets a realistic-yet-ambitious target for reducing these over the lifespan of the document.

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 the Sustainable Scotland Network. This tool is widely used across the Scottish public sector and assists organisations in calculating the carbon footprint associated with their operations. It 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 accurately 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 Intergovernmental Panel on Climate Change, the leading international body for the assessment of climate change, issued a clear and compelling call to action in 2018 via a Special Report on Global Warming of 1.5°C, a milestone document which emphasised current levels of warming and warned of the huge environmental, social and economic risks at stake globally if temperatures continue to rise, stressing the need for urgent and unprecedented action within a short timescale. These warnings have been echoed even more strongly in the IPCC's recent Sixth Assessment Report, which has been described as the starkest warning yet.

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

Developments in scientific understanding of the speed and severity of climate change led the Scottish Government to declare a Global Climate Emergency in 2019, which was recognised by the Council in June 2021. A subsequent and ongoing strengthening of national legal and policy and targets and incentives are now demanding a more ambitious approach – including a move towards achieving net zero emissions - with local authority action on corporate carbon reduction being a key aspect.

The role of public bodies in delivering on this upscaled national ambition is particularly important. The introduction of the Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Amendment Order 2020 was a significant development, introducing public sector additional reporting requirements from 21/22 onwards, including requirements to set targets and align them with spend.

The table below identifies the key national and local requirements and commitments:

Policy Driver	Details
International	
The Paris Agreement	Legally-binding treaty agreed at the 1915 United Nations Climate Change Conference (COP21) aiming to limit global warming to well below 2°C, preferably to 1.5°C, delivering a climate-neutral world by mid-century. Requires economic and social transformation based on best-available science. Signatories must deliver increasingly ambitious climate action through nationally determined contributions.
IPCC Sixth Assessment Report	Records widespread and pervasive impacts of existing climate change, some of which are now irreversible; emphasises the likelihood and speed of further impacts in the absence of action; and analyses opportunities for mitigation and adaptation, stressing the short timescale available. Also emphasises links to the biodiversity crisis and to poverty and inequality.

IPCC Special Report on Global Warming of 1.5°C, October 2018	Notes that the world is already 1°C warmer than at preindustrial levels and that going beyond a further 0.5°C increase would significantly increase the risks of drought, floods, extreme heat and poverty for hundreds of millions of people. Stresses that urgent and unprecedented action is required, within a short timescale of only 12 years, if these potentially catastrophic risks are to be avoided.
Scottish	
Legislation	
Local Government in Scotland Act 2003	Places a statutory duty of Best Value on local authorities, requiring a contribution to sustainable development.
Climate Change Act 2008	Introduced through the UK Climate Change Programme (2000). Sets a legally-binding target of at least 80% reduction in UK greenhouse gas emissions by 2050; amended by the Climate Change Act 2008 (2050 Target Amendment) Order 2019 to a target of 100% of 1990 levels (net zero) by 2050.
Climate Change (Scotland) Act 2009 and Climate Change (Emissions Reduction Targets) (Scotland) Act 2019	Climate Change (Scotland) Act 2009 sets legally-binding greenhouse gas emissions reduction targets set for 2020 and 2050, with linked targets set in relation to energy efficiency and meeting heat demand and electricity demand by renewable resources; includes target for 11% of heat consumed in 2020 to come from renewable sources, complementing a target to reduce total final energy consumption in Scotland by 12% in relation to a baseline of the average energy consumption in 2005-07. Updated in 2019 by Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, which sets legally-binding targets for greenhouse gas emissions reduction, in relation to a 1990/95 baseline, of 75% by 2030, 90% by 2040 and net zero by 2045.
The Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Order 2015	Requires all public bodies on the 'Major Players' list – including the Council – to submit an annual Climate Change Report to Scottish Ministers, detailing compliance with the climate change duties. Amended in 2020 by the Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Amendment Order 2020, introducing additional reporting requirements from 21/22 onwards.
Fuel Poverty (Targets, Definition and Strategy) (Scotland) Act 2019	Sets target of maximum of 5% of Scottish households being in fuel poverty, and less than 1% in extreme fuel poverty, by 2040; also defines fuel poverty, requires the production of a fuel poverty strategy and makes provision about reporting on fuel poverty.
Heat Networks (Scotland) Act (2021)	Makes provision for regulating the construction and operation of heat networks and for plans relating to increased use of heat networks . Places requirements on local authorities to investigate scope for and, where relevant support, facilitate and create controls in respect of the development of district and communal heating infrastructure. Also places duty on all public sector bodies to undertake Building Assessment Reports for all buildings in their estate, identifying existing

	thermal heating systems in their buildings and the potential for buildings to be supplied via a heat network.
Policy	
'Public Sector Leadership on the Global Climate Emergency' Guidance (2021)	Scottish Government guidance which emphasises the key role of Scotland's public bodies in tackling the global crises of health, climate emergency and biodiversity loss by implementing national and local climate policy. Reducing public bodies' own emissions quickly without offsetting, and decarbonising public sector procurement, estate and fleet, are key elements.
Progress Reducing Emissions in Scotland – 2021 Report to Parliament	Climate Change Committee's tenth annual Progress Report to the Scottish Parliament, as required by the Climate Change (Scotland) Act 2009. Highlights the past role of electricity decarbonisation in reduction the national footprint and advises that potential further emissions savings from this source are now limited.
District Heating Action Plan (2013)	Provides clear roadmap for how Scottish Government will work in partnership with wider public sector, business and industry to support development of district heating in Scotland; stimulated creation of heat map datasets for local authority areas, and provides policy basis for Heat Policy Statement.
'Sustainable Housing: Fuel Poverty and Climate Change' Advice Note (2014)	Assists local authorities in using Local Housing Strategies to addressing fuel poverty and climate change via warm, dry, energy-efficient, low-carbon homes that are affordable to heat (supplementary to Local Housing Strategy Guidance).
National Planning Framework 3 (2014)	Sets out vision for Scotland as a low-carbon place, highlighting role of district heating, and requires that new developments link to existing or planned heat networks where viable.
Emerging National Planning Framework 4 (2022)	NPF4 will, when adopted, set out the Scottish Government's priorities and policies for the planning system up to 2045 and how the approach to planning and development will help to achieve a net zero, sustainable Scotland by 2045
Scottish Planning Policy (updated 2014)	States that Local Development Plans should support heat networks in as many locations as possible and should use heat mapping to identify the potential for co-locating development with a high heat demand with sources of heat supply. Also recommends that policies should support the provision of energy centres and heat networks within developments where appropriate.
Scottish Energy Strategy (2017)	Sets a target for the equivalent of 50% of energy used for Scotland's heat, transport and electricity to be supplied from renewable sources by 2030.
Securing a green Recovery on a Path to Net Zero:	Updates the 2018 Climate Change Plan ('Third Report on Proposals and Policies 2018-32 (RPP3)') to reflect the

Climate Change Plan 2018-2032 Update (2020)	increased ambition of the new targets set in the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019. Sets new ambitious targets to end our contribution to climate change by 2045. Commits to reducing emissions by 75% by 2030 (compared with 1990) and to net zero by 2045. Places further emphasis placed on public sector bodies to demonstrate leadership and reduce emissions.;
Energy Efficient Scotland Programme (2020)	Aims to reduce fuel poverty and carbon emissions by making homes and buildings warmer, greener and more energy-efficient. Proposes standards for domestic and non-domestic buildings, with a general goal of all achieving EPC rating C by 2040, where technologically feasible and cost-effective. To be delivered by local authorities via LHEESs.
Energy Efficient Standard for Social Housing post-2020 (EESSH2)	Builds on the success of the first Energy Efficiency Standard for Social Housing standard (introduced in 2014) by requiring all social housing to meet EPC Band B, or to be as energy efficient as practically possible, by 2032.
Scottish Government's Draft Local Energy Policy Statement (2019)	Sets out a series of themes and associated principles and outcomes for project delivery agents to consider during the development of future renewable energy projects. Published in line with strategic priority in Scottish Energy Strategy to develop innovative local energy systems.
Protecting Scotland's Future: the Government's Programme for Scotland 2019-2020	Includes requirement to accelerate fleet decarbonisation from 2025 and to decarbonise public sector buildings from 2024
A Fairer, Greener Scotland – Programme for Government 2021-22	Commits to ending Scotland's contribution to climate change, including via decarbonisation of homes, buildings and transport
Scottish Government Heat in Buildings Strategy(2021)	Sets out a vision for the future of heat in buildings, outlining the steps required to reduce greenhouse gas emissions from Scotland's homes, workplaces and community buildings and to maximise economic opportunities and ensure a just transition, including helping to address fuel poverty. Also proposes a target for all publicly owned buildings to meet net zero emission heating requirements by 2038 and out intention to place a statutory duty on local authorities to prepare LHEESs, committing to LHEESs being in place by the end of 2023. (Updates the 2018 Energy Efficient Scotland Route Map and the 2015 Heat Policy Statement.)
Scottish Government New Build Heat Standard	Requires new buildings consented from 2024 to use heating systems with zero direct emissions.
Energy Performance of Buildings (Scotland) Regulations 2008	Requires building owners or provide an Energy Performance Certificate when the building is to be sold or let, and requires owners or occupiers of public buildings to display an Energy Performance Certificate in a prominent place, clearly visible to visiting members of the public.

Scottish Government consultation on proposed changes to energy standards within Scottish Building Regulations (2021)	Proposed changes to facilitate delivery of the targets set in the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019
Landfill (Scotland) Regulations 2003, as amended by Waste (Scotland) Regulations 2012	Introduced ban on landfilling of biodegradable municipal waste by 2021, later amended to 2025
Scotland's Zero Waste Plan (2010)	Sets an ambitious agenda for reducing waste, recognising the carbon reduction benefits of doing so
Economic Instruments	
UK Emission Trading Scheme (UK ETS)	Carbon emission trading scheme in operation since 01.01.21 following the UK's departure from the EU; a 'cap and trade' scheme with the cap reducing in line with the UK's 2050 net zero commitment.
Climate Change Levy	Introduced through the UK Climate Change Programme (2000) as a tax on non-domestic electricity use; rate was increased in 2019 following the cessation of the CRC Energy Efficiency Scheme.
Scottish Landfill Tax, introduced in 1996	Introduced in 1996; aims to encourage waste producers to produce less and recover more value from it, via an increasing per-tonne charge
Local	
Local Outcomes Improvement Plan (LOIP) (2017-27)	Document is underpinned by several guiding principles including sustainability, whereby a commitment is made to undertaking all activity without compromising the quality of the natural environment and with prudent use of natural resources.
East Dunbartonshire Local Development Plan (2017) and emerging Local Development Plan 2 (2022)	LDP Policy 15 – Renewable Energy and Low-Carbon Technology requires that development proposals support the change to a low-carbon economy, including via exploration of the potential for decentralised energy centres and heat networks. LDP2 Policy 9 – Climate Change, Sustainability and Energy Infrastructure seeks to build on LDP Policy 15 by setting stricter requirements for carbon reduction via energy efficiency and use of renewables.
East Dunbartonshire Sustainability and Climate Change Framework ('SCCF') (2016-21) and SCCF Action Plan	Sets a framework for strategic, cross-Council approach to sustainability, including corporate carbon reduction
East Dunbartonshire Council Energy Policy (2012)	Commits the organisation to reducing energy use and moving from fossil fuels to renewables

East Dunbartonshire Local Housing Strategy (2017-2022; revision currently underway)	Identifies fuel poverty as a priority, and sets specific targets for energy efficiency in Council-owned properties.
East Dunbartonshire Local Transport Strategy (2020-2025)	Sets out the Council's transport policy, presents Transport Planning Objectives and co-ordinates future priorities to enhance transport and travel in East Dunbartonshire including enabling a shift to environmentally, socially and economically sustainable transport.
East Dunbartonshire Council Active Travel Strategy 2015-2020; revision currently underway)	Supplements the Local Transport Strategy, seeking to improve opportunities for transport powered by human physical activity as an alternative to motorised transport
East Dunbartonshire Council Annual Procurement Strategy 2020-21 and related documentation	Strategy emphasises importance of sustainable procurement, including commitment to align with corporate carbon reduction policy. Procurement documentation includes requirement for carbon considerations to be taken into account in the award ofnew contracts

2.2 Cost Saving

In addition to the avoidance of financial penalties related to 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; the recent spikes in energy prices have served as a stark reminder of the impact of rising fuel bills, with the Council experiencing a 50% rise in gas costs and a 15% rise in electricity costs over the past year. Geopolitical tensions are likely to place further pressures on energy commodities, further adding to energy costs for the foreseeable future. While the Council is to an extent protected from cost rises due to the advance purchase arrangements that underpin local authority gas and electricity procurement, the Scottish Procurement Utilities Team has recently advised[1] that electricity and gas prices, which were historically high even before Russia's invasion of Ukraine, will be further impacted as a result of the invasion, with wholesale costs for 2022/23 predicted to be at least 35% higher for gas and approximately 38% higher for electricity. This is particularly significant given the large proportion of the Council's emissions that are derived from gas and electricity usage, and creates an additional incentive to reduce energy demand and switch to renewables as a matter of urgency. 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] - a landmark 2006 publication which heralded a new understanding of the links between environmentally-damaging activity and financial cost - 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.

[1] 'Utilities Procurement Response to Russian Invasion of Ukraine', issued 08.03.22

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

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 had a particularly significant effect, placing the Council under regular scrutiny in relation to climate change and carbon management.

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 additional action were taken (known as 'Business as Usual' (BAU)). The likely impacts of additional carbon reduction projects are then determined and evaluated in conjunction with the BAU scenario to identify a realistic target.

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 Types of Emission

The Greenhouse Gas Protocol, an international greenhouse gas accounting standard which is used in Scotland's Public Bodies Climate Change Duties reporting emissions, classes carbon emissions according to 'scope':

- ***Scope 1 emissions*** are direct emissions that occur from sources owned or controlled by the organisation, e.g. emissions from combustion in owned or controlled boilers and vehicles, etc.
- ***Scope 2 emissions*** are 'energy indirect' 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*** are all other indirect emissions and arise as a consequence of the activities of the organisation from sources not owned or controlled by the company. Examples include extraction and production of purchased materials, 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.

3.1.2 Boundary of Council's Footprint

In the previous Carbon Management Plan, the Council's carbon footprint comprised five components, covering all Scope 1 and Scope 2 emissions and some Scope 3 emissions. Details of these, and of the emission sources within each component, are as follows:

- Built assets (buildings within the Council's corporate and education estate, including the East Dunbartonshire Leisure and Culture Trust but excluding the Health & Social Care Partnership): emissions arise from use of electricity (including to charge the Council's fleet of electric vehicles), gas, gas oil and biomass
- Waste: emissions arise from landfilling, recycling, combustion, composting and anaerobic digestion
- Street lighting (street lighting and Christmas lighting): emissions arise from use of electricity
- Fleet (all non-electric vehicles): emissions arise from use of diesel and gas oil ('red diesel')

- Business travel: emissions arise from assumed use of petrol

Figures 1 and 2 below provide a breakdown of the emission sources within each component and classify them as Scope 1, 2 or 3. They also set out which sources have been excluded. (It should be noted that the size of box allocated to each activity/emission source is not proportional to its contribution to the overall carbon footprint).

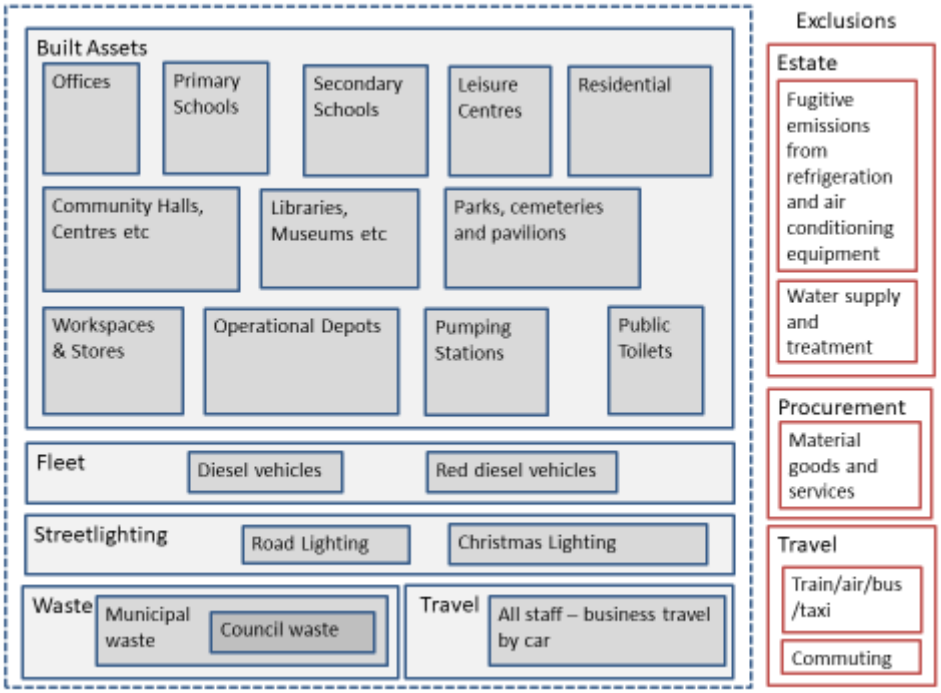


Figure 1: Boundary of the Council's current carbon footprint

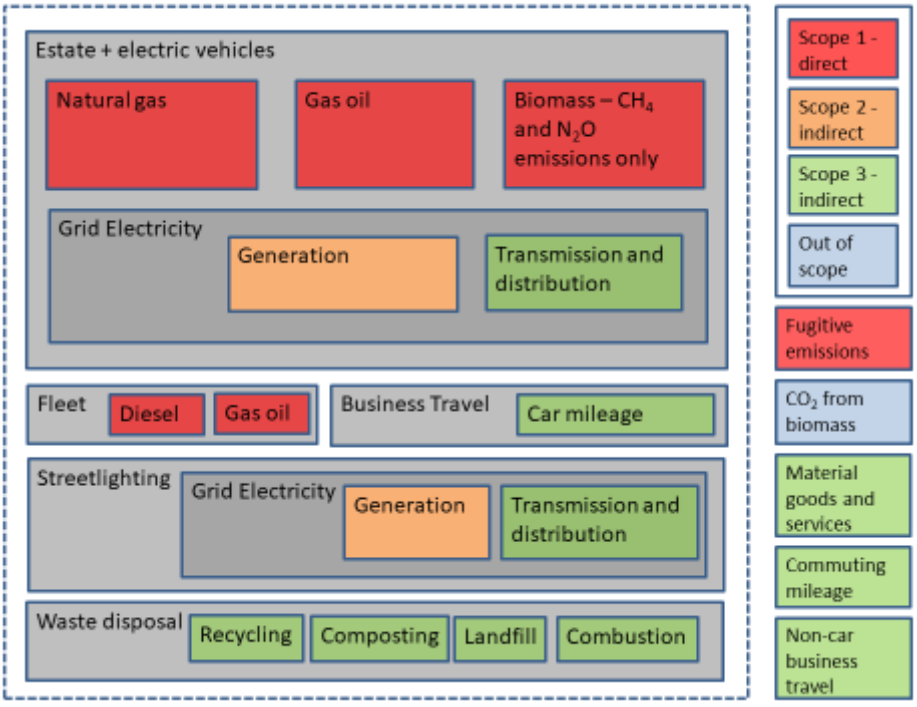
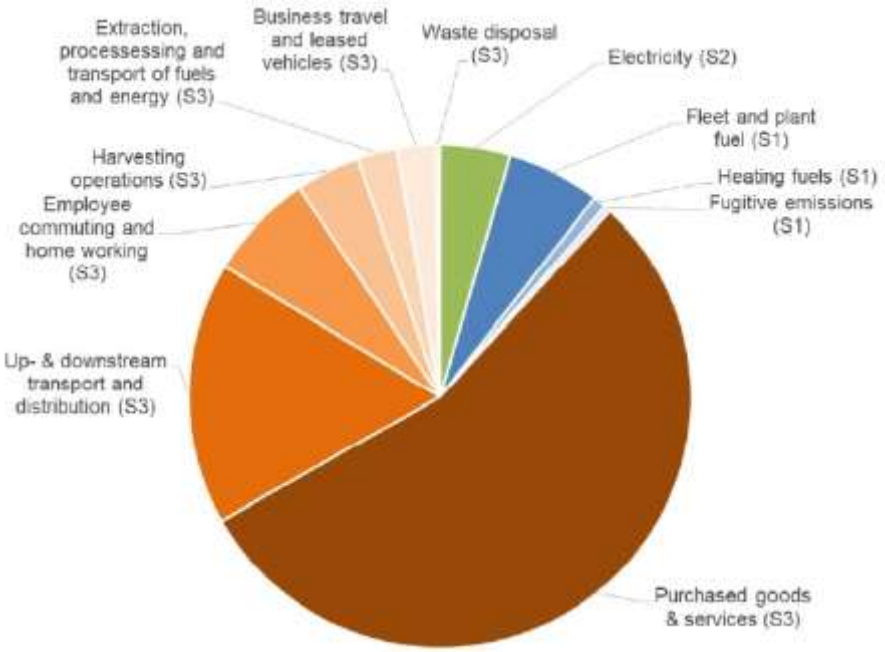


Figure 2: Emission types within the Council's current carbon footprint

Since the production of the last Carbon Management Plan, the Council's understanding of carbon footprinting has been enhanced by various developments, including the production of the Scottish Government's 'Public Sector Leadership on the Global Climate Emergency' guidance in 2021, which requires public authorities to widen the scope of what is included in carbon management planning, ensuring that it is robust and comprehensive; emissions from use of heat and electricity in buildings are highlighted as the largest reported aspects of public sector emissions.. Paired with improvements in availability and quality of data, this has led to a variety of additional emission sources, both within and additional to the above components, being identified as being appropriate to add to the Council's footprint due to the relatively significant volume of emissions associated with them and the opportunities available to reduce these emissions, and the production of this Plan provides an opportunity to begin their introduction:

- An extension of the scope of 'built assets' to include water use (supply and sewage) and working from home
- Council-owned housing
- Non-car business travel
- Commuting
- Small-scale use of petrol in fleet
- Procurement of goods and services
- Other Scope 3 sources such as the use of Council services, contracted-out-services, Council investments and leases

The inclusion of additional Scope 3 emission sources is a particularly important development, given their relative extent. While the exclusion of Scope 3 emissions from public sector carbon footprinting to date is not uncommon[3], recent developments in understanding have emphasised the importance of revising footprints to include these, with a particular emphasis on procurement-related emissions. Figure 3 below, from a report on the carbon footprint of Natural Resources Wales, illustrates how Scope 3 ('S3') emissions can dominate a public sector organisation's footprint:



[3] A Sustainable Scotland Network members' survey in 2020 found that Scope 3 emissions, especially those relating to procurement, tend to be under-reported

Figure 3: Illustration of the significance of Scope 3 emissions, from an analysis of Natural Resources Wales' emissions[4]

While the production of this Plan is an opportunity to formally highlight the future relevance of these new emission sources to the Council's carbon footprint, work is still underway to determine the most appropriate methods for measuring data; this work is being carried out as part of the process of preparing the CAP, with the intention that the 'data maturity' of these components, as described in Figure 5 below, will move from 'red' to at least 'amber'.

Data Maturity Rating	Explanation
Red	Data is estimated and has a large margin of error – e.g. based on industry norms/estimated factors
Amber	Data is estimated and has a moderate margin of error – e.g. based on spend data
Green	Data is measured/supplier specific and has a smaller or known margin of error

Figure 5: Scottish Government data maturity rating system[5]

In line with the Scottish Government guidance, it has not yet been deemed appropriate to set reduction targets for these new components (or, indeed, to include them within the baseline), where the lack of available data would involve 'high level estimates' being used. However, again in line this guidance, these components are taken into account in the process of considering potential projects to include within the Interim Carbon Management Plan.

3.1.3 Offsetting

The Council's Carbon Management Plans have always focused on absolute reductions in emissions at source and this approach will be maintained during the period of the Interim Carbon Management Plan, rather than seeking to address residual emissions off-site via 'offsetting'; at-source emission reduction, rather than offsetting, is particularly important for Scope 1 emissions; Scottish Government guidance has clearly stated that Scope 1 emissions should not be dealt with via offsetting. However, it should be noted that offsetting will be part of the wider approach to emissions reduction set out in the CAP and will have a bearing on indirect corporate emissions which are not required to be reduced at source.

3.2 Emissions Baseline and Trends

3.2.1 Baseline Footprint

The previous Carbon Management Plan had a target of a 44% emissions reduction (revised in 2019 from the original 20% target) against a 2012/13 baseline, and this target was met; a 2021 target of 49% reduction against the same baseline was then set, and this was exceeded. In order to build on this achievement, it is now appropriate to set a new baseline. The 2012/13 baseline will still be reported against, for consistency; however,

[4] Source: 'Advice on emissions accounting and reporting methods to inform Welsh public sector decarbonisation policy delivery' (https://cdn.cyfoethnaturiol.cymru/media/689021/assessment-of-accounting-and-reporting-methods-welsh-public-sector-decarbonisation.pdf)
[5] Source: 'Public Sector Leadership on the Global Climate Emergency' Guidance (October 2021)

setting a new baseline will allow for the introduction of the new emission sources set out in Section 3.1.2. It will also address the fact that minor discontinuities have arisen in annual carbon footprints due to changes in emission calculation procedures, improvements in the accuracy of data-gathering and variations in service activity within some of the carbon footprint components; while these changes do not compromise confidence in the carbon reduction figures reported here, it is considered that the introduction of a new baseline year based on more robust data will be beneficial.

While data is held for 2020/21, this was the first full year of the Covid-19 pandemic and carbon emissions were skewed by the resultant changes in service delivery. 2019/20 has therefore been chosen as the new baseline year; the pandemic started at the very end of 2019/20 and therefore had minimal impact on the annual emissions figure.

Based on the scope outlined above, the Council's carbon footprint baseline is 18,257 tCO_2e.

The methods used to source consumption data, and apply emission factors to convert it into tonnes of carbon dioxide equivalent (tCO_2e), are described in Appendix A: Standard Operating Procedures.

Figure 4 illustrates the relative contribution of each component in the baseline footprint:

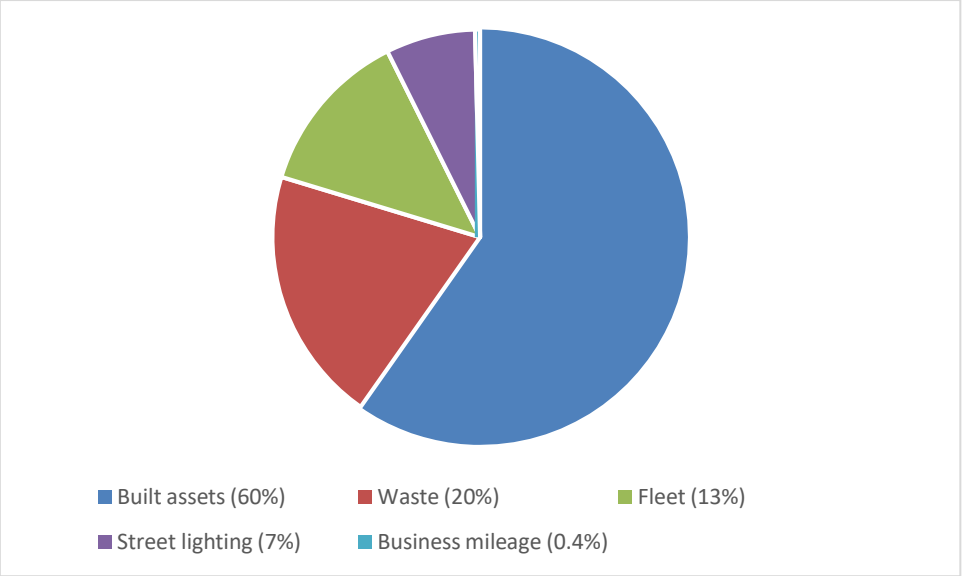


Figure 4: Breakdown of baseline carbon footprint

As shown above, built assets form the greatest contributor to the baseline carbon footprint, accounting for just under two thirds of emissions; this is followed by waste management, which contributes one fifth. Reduction of building energy consumption will therefore continue to be a priority area for action; continuing to reduce landfilling of waste, which is responsible for the majority of waste-related emissions, will also be important. Emissions reductions in the other components are also important and will contribute to an overall decrease in the total carbon footprint.

As explained above, the new emission sources introduced in Section 3.1.2 have not yet been quantified and cannot therefore be included in the new baseline figure. However, it is expected that they will form a significant percentage of the new footprint, when it is introduced in the CAP.

3.2.2 2020/21 Footprint

Data for 2020/21 - the first full year after the baseline year - is already available. During 2020/21, the Council's carbon emissions totalled 15,570 tCO_2e, which represents a

substantial reduction of 15%. As explained above, it is likely that the footprint would have been higher if service delivery had not been impacted by the Covid-19 pandemic; however, while it cannot be expected that emissions will continue to decrease at this rate or even to stay at this level, it is important that the Council takes as many measures as practical in order to continue the downward drive towards net zero.

Figure 5 illustrates the relative contribution of each component of the 2020/21 footprint:

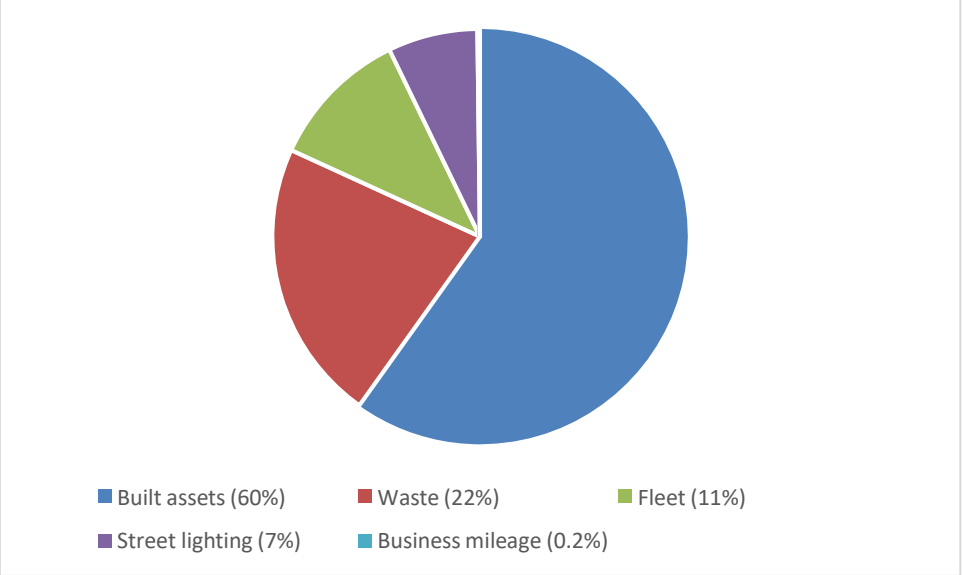


Figure 5: Breakdown of 2020/21 carbon footprint

Figure 5 shows that the relative contributions of each emission source in 2020/21 are very similar to the baseline year, with built assets continuing to be the greatest contributor, accounting for just under two thirds of emissions; again, this is followed by waste management, which contributes one fifth. Reduction of building energy consumption will therefore continue to be a priority area for action in this Plan; continuing to reduce landfilling of waste, which is responsible for the majority of waste-related emissions, will also be important. Emissions reductions in the other components are also important and will contribute to an overall decrease in the total carbon footprint

3.3 Projections

3.3.1 'Business As Usual'

After establishing the Council's baseline carbon footprint, the next stage is to consider what would happen if no additional action was taken, i.e. in a 'business as usual' ('BAU') scenario. In previous Carbon Management Plans, BAU generally referred to a scenario where no carbon reduction activities were being undertaken. Now, however, carbon reduction interventions are more embedded in organisational culture, such as the increasing inclusion of heat pumps and energy-efficient lighting in new Council buildings; carbon reduction is becoming business as usual.

Using available data relating to likely increases and decreases in carbon emissions from relevant service areas – with a particular focus on built assets - anticipated emissions by the end of 2022/23 in the absence of further intervention were calculated as being 13,478 tCO_2e. In other words, under a BAU scenario, the reduction of the Council's carbon footprint within the lifespan of this Interim Carbon Management Plan would be 26% in relation to the 19/20 baseline and 58% in relation to the 2013/13 baseline. This takes into account anticipated changes in emission factors, which the UK Government use to estimate carbon emissions associated with each given source; the emission factor for electricity has

been gradually reducing in line with the ongoing decarbonisation of the UK Grid and, between 2021/22 and 2022/23, it is projected that it will reduce by approximately 45%.

Given that such a large proportion of the Council's footprint results from electricity consumption, it is not surprising that the footprint is expected to fall by such a large amount. The predicted fall in carbon emissions is not, however, expected to be accompanied by a corresponding fall in costs; as set out in Section 2.2, costs per unit of electricity and gas have risen significantly over the last year and are expected to rise again considerably in the coming yearIt is also expected that other costs such as those associated with the Landfill tax will also continue to rise.

3.3.2 Reduced Emissions Scenario

Building on the BAU prediction, analysis was then carried out to estimate the likely impacts of planned carbon reduction projects (as described in Section 4); this is referred to as the 'Reduced Emissions Scenario'. Data was not available to enable estimates to be calculated for all projects; for those on which calculations were possible, it is estimated that additional annual carbon savings of 130 tCO_2e will be delivered by the end of 2022/23.

As noted in Section 4, it is likely that further carbon savings for the period covered by this Plan will be identified after the Plan is finalised.

3.4 Target

This Plan serves as a stepping stone to the CAP, which will set a specific and ambitious net zero target for East Dunbartonshire, encompassing a target for zero direct corporate emissions. It is therefore important that the target for this Plan stimulates the groundwork for the radical change that is required. However, it is also important that the target is realistic.

The target-setting process took account firstly of the projected carbon emissions that will occur under BAU, including via the the expected changes in government carbon emission calculations as a result of factors such as the ongoing decarbonisation of the Grid; this includes an anticipated 50% reduction in the government's calculation of Grid-related carbon emissions associated between 2021/22 and 2022/23. The impact of this change in calculation alone is expected to result in a significant reduction of the emissions recorded in relation to the Council's built assets.

The process also took account of the additional carbon reductions – where these could be calculated - that will be delivered by known projects (both current and planned; see Section 4.2 for further details) with a particular focus on built assets, which is the largest components of the carbon footprint.

Taking the above factors into account, the targeted reduction in the Council's annual carbon footprint over the period of this Planwill be 4909 tCO_2e in relation to the 2019/20 baseline year and 19,072 tCO_2e in relation to the 2012/13 baseline year; this represents reductions 27% and 59% respectively.

To sense-check this figure, reference was made during the target-setting process to the emissions reductions recorded during the final year of the extended third Carbon Management Plan, which demonstrate progress made since the new baseline year and which offer a useful insight into potential future figures. The 2020/21 data demonstrates a reduction of 2,687 tCO_2e, or 15%, in relation to the new baseline year (and of 16,850 tCO_2e, or 52%, in relation to the original baseline year), which indicates that the Council is well on course to achieve its respective 27% and 59% targets, allowing for a rise in emissions as pandemic-related restrictions on service delivery begin to ease.

As explained in Section 4, it is anticipated that further reductions may be achieved as a result of interventions which have yet to be confirmed.

By the end of 2022/23, East Dunbartonshire Council will reduce its annual carbon footprint by 27% compared to the 2019/20 baseline footprint and 59% compared to the 2012/13 baseline footprint

The relatively short lifespan of this document precludes the ability to conduct a review 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. However, the ongoing preparation of the CAP presents an opportunity for major changes to be taken into account in future carbon footprint target-setting.

4 Carbon Management Projects

4.1 Introduction

Since the production of the Council's 2015 Carbon Management Plan, significant progress has been achieved. A reduction of 52% of carbon emissions, compared to the 2012/13 baseline of 32,420 tCO_2e, was measured by the end of 2020/21. While the ongoing decarbonisation of the Grid played a significant role in this reduction, various interventions undertaken during the 6-year period have played a key role; these include energy demand reduction via estate rationalisation and retrofitted measures such as efficient lighting systems, and a transition from fossil fuel sources towards renewables – to date, the Council has 17 buildings with biomass boilers, 12 with solar PV and 4 with air source heat pumps. The move away from landfilling of waste towards combustion has also given rise to considerable emissions reductions, contributing to an overall reduction of waste-related emissions by two thirds between the 2012/13 baseline year and 2020/21.

In order to continue achieving emissions reductions and avoiding financial exposure, the Council is committed to identifying and implementing further carbon-saving projects across the range of services that contribute to the Council's current footprint and its future, expanded one. Achieving our emission reduction target of 27/59% will require an absolute reduction of 4,909 tCO_2e against the 2019/20 baseline carbon footprint and a reduction of 19,072 tCO_2e against the 2012/13 footprint.

While it was stated in Section 3 that the ongoing decarbonisation of the Grid is expected to reduce emissions significantly, Scottish Government guidance is clear that public bodies should not depend on the effects of Grid decarbonisation to reduce their emissions and that they should act as quickly as possible to accelerate efforts to use 100% renewable electricity on their estate. As a minimum, public bodies are required to reduce emissions from electricity consumption in accordance with national targets, including 75% reduction by 2030. Energy demand reduction and a transition away from fossil fuels will therefore continue to be an important aspect of the Council's project list.

Carbon reduction is a dynamic area of activity; plans relating to carbon reduction projects are updated regularly in response to changing circumstances and emerging opportunities. As such, it is not practical to present an exhaustive list in this Plan; instead, the list presented here provides a summary of key interventions known at the time of publication. A full project register, which includes data on carbon and cost and holds practical information such as implementation dates and responsible officers, is held in the Carbon Footprint Project Forecast Tool and related documents and a summary is attached as Appendix B. The register is reviewed as a routine aspect of Carbon Management Officers Group meetings, discussed in Section 5 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. 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 new baseline year of 2019/20; as acknowledged earlier, many measures were taken prior to this date, and many of these deliver ongoing benefits which aid in maintaining a lower carbon footprint than would otherwise be the case.

4.2 Existing and Planned Projects

A range of projects have been introduced which have allowed the Council to further drive down emissions beyond the carbon figure recorded in the 2019/20 footprint. While carbon savings cannot be quantified in all cases, they will all contribute to the reduction target. Further details of these projects are set out in Appendix B, which includes quantification of carbon savings where possible, with these figures feeding into the target-setting calculations. Projects for which quantification was not possible were not taken into account in the target-setting process but are included on the list as they are still regarded as important.

These projects fall into three categories:

4.2.1 Projects delivered during 2019/20

While the carbon reduction impacts of projects delivered during 2019/20 will, to an extent, already have been captured within the new baseline footprint, the first full year's worth of savings is not usually generated until the following financial year; including them in this list of new projects does not therefore constitute double-counting.

- Replacement of lamp fittings at Leisuredrome with LED panels
- Replacement of 200 street lights with LEDs
- Introduction of FuelGood driver training

4.2.2 Projects delivered during 2020/21

The following projects were delivered during 2020/21:

- Introduction of humidity controls at Lillie Art Gallery
- Replacement of pool hall lamp fittings at Leisuredrome with LEDs
- Replacement of bulkhead fittings at Leisuredrome with LEDs
- Replacement of 200 street lights with LEDs

4.2.3 Projects delivered during 2021/22

The following projects were delivered during 2021/22:

- Boiler replacements at 5 primary schools and 1 care home
- Replacement of 120 street lights with LEDs
- Introduction of booking system at Mavis Valley Recycling Centre
- Replacement of 112 fleet vehicles with reduced-emission models
- Introduction of 7 additional electric vehicles to fleet

4.2.4 Projects planned for 2022/23

The following projects are planned for 2022/23:

- Replacement of CCTV surveillance equipment
- Replacement of 200 street lights with LEDs

4.3 Additional Projects

Through the process of preparing the CAP, various other potentially carbon-reducing projects have been identified as 'Early Action Measures', i.e. measures which will be undertaken by the end of 2022/23, in advance of the CAP being finalised.. In all cases, the likely carbon savings have yet to be established (and the target set in section 3.4 does not therefore take account of these projects).. In some cases, the projects will not deliver carbon savings within the lifespan of this Plan. However, all have been included here because their delivery, or the actions that will be taken towards their delivery during the lifespan of this Plan, represent important steps towards the generation of significant carbon savings in the future.

Those relevant to corporate carbon management, taking into account the future extended scope of the Council's footprint, are as follows:

- Assess feasibility of extending FuelGood training
- Prepare Fleet Decarbonisation Plan
- Implement contract to divert incineration bottom ash from landfill
- Develop specification for decarbonisation of Council-owned new-build housing
- Determine feasibility of installing air source heat pumps, solar PV with battery storage and building fabric upgrade at Council-owned flats in Milngavie
- Consider adoption of Net Zero Public Sector Buildings Standard in every Major Asset Project
- Undertake study on potential decarbonisation of Education estate
- Prepare proposal for fabric-first decarbonisation of Lenzie Academy
- Decarbonisation as integral part of rebuild of Balmuildy Primary and refurbishment of Milngavie, Bearsden & Westerton Primaries
- Prepare proposal for fabric-first decarbonisation of 2 leisure centres
- Prepare programme for Building Assessment Reports for all Council non-domestic buildings
- Conduct Feasibility Study to establish potential for conversion of 1000 existing streetlamps to LED lanterns
- Develop a strategy which outlines vision for moving on-premise applications and databases to the Cloud
- Update of standard procurement documentation to improve embedding of climate considerations
- Include additional climate change considerations in annual Procurement Strategy update
- Investigate feasibility of carbon reduction in road building and maintenance
- Decarbonise Council-owned flats at Townhead and Ellisland
- Prepare Circular Economy Strategy
- Provide enhanced productivity and collaboration tools to support our workforce of the future
- Train Council housing building wardens on new low-carbon heating systems
- Identify available Council land for renewables projects
- Develop 'Bring Your Own Device' strategy
- Install gateways across East Dunbartonshire to provide coverage for Internet of Things
- Assess and invest in ICT infrastructure
- Deliver the Corporate device replacement programme
- Deliver the schools device replacement programme
- Transition from analogue to digital telecare
- Implement Parents Portal to provide online access to school-related services
- Implement new Committee Document Management solution
- Implement in-cab technology for waste collection services

These initiatives are anticipated to lead to significant reductions of direct emissions from Council operations; this will be crucial in helping the Council to meet the requirement for

reduction of direct emissions and in leading the way for a wider organisational culture change. We will build on this by identifying additional projects, where possible, to achieve further emissions reductions.

4.4 Supporting Measures

To support and supplement the projects that directly deliver carbon savings, various 'enabling' measures have been identified, which will play a crucial role in overcoming the challenges of delivering accelerated emissions reductions.

4.4.1 Finance

The availability of financial resources to support the implementation of carbon management measures is a key enabler.

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 Climate Change Levy and the Scottish Landfill Tax. While carbon reduction activities often require upfront investment, the savings that they generate will often outweigh the costs and, given the expected significant increase of costs associated with carbon emissions (as set out in Section 2.2), it is particularly important for early action to be taken to reduce emissions and limit future cost increases.

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.

The Council's Capital Programme has funded a wide range of carbon reduction measures across a number of years, and will continue to be a key enabler, underpinning several planned measures discussed in Section 4. This will be supported by the Central Energy Efficiency Fund (CEEF), a pot initially funded by the Scottish Government in 2004 to provide rolling funds for energy efficiency and renewables projects, with savings and income generated by these projects replenishing the pot and being used to fund further measures

of the same nature. While CEEF funding has already supported various initiatives, there is an opportunity to improve its reach.

In terms of external funding, Scottish Government support will be key. The Shared Policy Programme introduces a requirement that 'public sector funding should be conditional on levering in wider benefits, such as the transition to a net zero economy', which is anticipated to support decarbonisation across a range of contexts and is in line with the requirement in the Climate Change (Scotland) Act 2009 which states that public bodies should use the range of all of their functions to address climate change. Significant capital funding is now available to enable the transition to decarbonisation, and it is crucial that the Council secures its share.

4.4.2 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 with reference to the Council's Impact Assessment Guide ('IAG'), which includes a requirement for appropriate SEA considerations to be made at the outset; this requirement is enforced at the Committee Admin stage, where all documents submitted for Committee or Council meetings must demonstrate having been assessed against the IAG checklist. This process supports corporate carbon reduction by ensuring that PPSs adhere to legislative and corporate requirements 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.

Business Improvement Plans ('BIPs'), which set out the annual work programme for each Council service area, are also subject to carbon scrutiny – the guidance and template for BIP preparation requires climate change considerations to be made in relation to planned work, and support is provided at the outset of the BIP preparation process to ensure that this requirement is considered at an early stage. A checking process is in place, with any identified negative impacts – and any gaps in consideration – being identified by the Sustainability Policy Team and highlighted to the relevant service area.

The Council's programme management process, overseen by the Programme Management Office (PMO), 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; under the Sustainability and Climate Change Framework, the Council is committed to building sustainability requirements, including carbon considerations, into the template, guidance and document vetting process.

4.4.3 Major Assets Projects

Carbon considerations are included in the design of major Council buildings via the embedding of sustainability interests in the design process; under the Co-ordinated Process Framework, sustainability representatives are represented in meetings from the outset as part of a multi-disciplinary, cross-Council approach to ensuring that all relevant policy requirements are highlighted at an early stage. Sustainability continues to be a key factor in decision-making throughout the process, with justification being required for any decisions that do not support the lowest-carbon design options.

4.4.4 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. These measures will be supported by the delivery of the CAMP-related 'Early Actions' set out in Section 4.3, and future targets being developed in the CAP will link to the CAMP.

4.4.5 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 5.

4.4.6 Staff Travel Planning

The Council's Traffic and Transport Team's remit includes facilitating staff transport to and from work, and transport during the business day, by means other than private cars; staff are encouraged to travel actively and to make use of the Council's fleet of pool cars. While the biggest impact of these interventions is on commuting patterns, which are currently excluded from the scope of the Council's carbon footprint, such interventions also help to reduce business mileage.

4.4.7 Input to Regional and National Decision-Making

There are various key determinants of carbon emissions that are outwith the direct control of a local authority, such as Scottish Government LHEES policy. However, by acting collaboratively and in conjunction with regional and national decision-makers, a council can exert an influence. The Council routinely contributes to Scottish Government consultations on relevant policy areas, and is also an active member of the Sustainable Scotland Network, through which joint action is co-ordinated across the Scottish public sector on various strategic issues relevant to corporate carbon reduction. Participating in national partnership working in this way allows the Council to effect and benefit from the wider systems change that is required to deliver on Scotland's ambitious carbon targets.

5 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.

5.1 CAP Working Groups

In 2015, a Carbon Management Officers Group (CMOG) was established to provide strategic direction for the CMP. Since then, new governance arrangements have been established for the development of the CAP, and the CMP will now sit within this framework.

Overall responsibility for the CAP rests with the new Climate Change Member Officer Group (MOG), chaired by a Joint Leader of the Council and having representation from other elected members, the Chief Executive, the Depute Chief Executive, the Chief Finance Officer and other senior managers as required. To support the work of the MOG, three working groups have been established, two of which have a remit relevant to the corporate carbon management:

- The Local Heat and Energy Efficiency (LHEE) Working Group co-ordinates work on the development of the LHEES, with a particular focus on decarbonising domestic and non-domestic buildings including those within the Council's estate. This group comprises officers from the Council's Land Planning and Development, Housing, Property Maintenance, Assets & Estates Management service areas

The Net Zero Focus Group has a remit to develop the pathway to deliver new zero targets at Council and area-wide levels, including aspects of corporate carbon management that sit outwith the remit of the LHEE Working Group. It comprises officers from a variety of service areas including Land Planning and Development, ICT, Waste Services, Roads Network Operations, Fleet, Business & Digital Change and Procurement. While the CMOG will be retained, it will now provide technical support to the above two working groups rather than acting as the overall governance group.

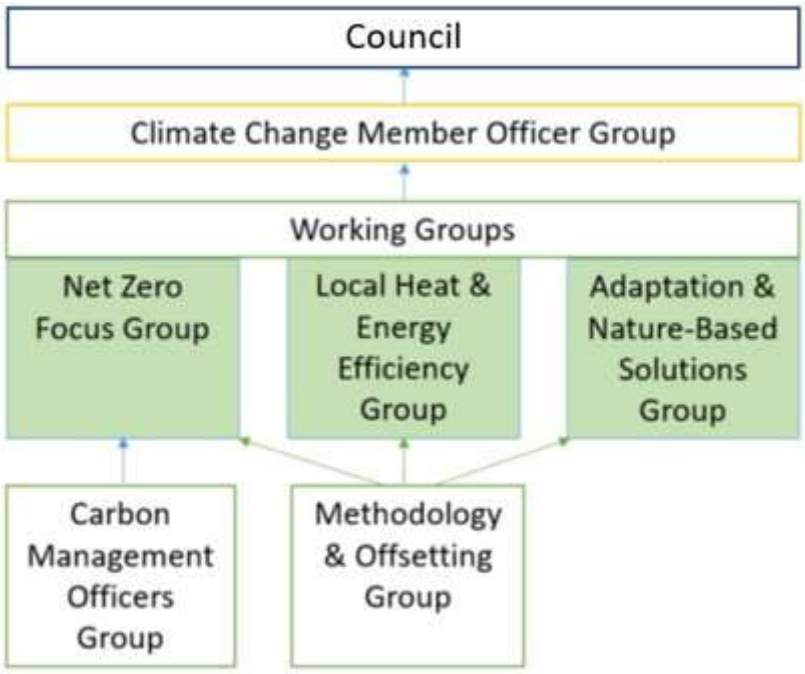


Figure 6: CAP governance structure

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.

In addition to formal meetings of the working groups, which are scheduled to take place approximately every 6 weeks, one-to-one meetings and informal liaison will take place between relevant parties as appropriate, with input being sought from elsewhere in the organisation as required.

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

5.2 Partnership Working

In addition to the partnership working described in 4.4.7, 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.

5.3 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.

6 Progress Reporting

6.1 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 monitor and publicise progress against the 2022/23 target, 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
- Progress of supporting measures
- Review of whether scope and target remain relevant

While reporting will continue to be carried out in relation to the original scope of the Council's carbon footprint, developments in relation to the new sources being introduced to the footprint will be included where available.

The reporting process will be co-ordinated by the Sustainability Policy Team and overseen by the MOG, supported by the LHEE and Net Zero Working Group which will be supported, in turn, by the CMOG. The approved document will published 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).

6.2 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; the reporting arrangements under the CAP governance framework are particularly relevant.

Key aspects of CMP progress will also continue to 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 was 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 continue to be aligned, with reports being submitted together for approval at autumn Committee meetings.

Appendix A: Standard Operating Procedures

Purpose

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).	Invoice data is fed into SystemsLink and then fed from SystemsLink into a bespoke spreadsheet which allows information to be analysed more easily. (Some alterations are necessary and must be dealt with	Energy Officer: currently Paul Slevin (paul.slevin@eastdunbarton.gov.uk ; 0141 574 5551) (SCCO also has access: currently Sylvia Gray (sylvia.gray@eastdunbarton.gov.uk ; 0141 578 8655))	Gas and half-hourly electricity invoice data is received a month in arrears; non half-hourly electricity invoice data is received 90 days in advance (if not sooner). (SystemsLink also holds raw dhalf-

[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.

	manually, e.g. outliers such as multiple MPPR readings.)		hourly and non-half-hourly AMR data; this can be accessed on a next-day basis, i.e. quicker than invoices, but is not quality-checked.
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@eastdunbarton.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@eastdunbarton.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	Energy Officer : currently Paul Slevin paul.slevin@eastdunbarton.gov.uk 0141 574 5551 (SCCO also has access: currently Sylvia Gray sylvia.gray@eastdunb	Quarterly data available within one month of period-end.

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

	comparing meter readings.	arton.gov.uk 0141 578 8655)	
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	Waste Compliance Officer: currently Stephen Dickie stephen.dickie@eastdunbarton.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).

	internally (see below) - Annual data for East Dunbartonshire 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 Service Support: ServiceSupport@eastdunbarton.gov.uk	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@eastdunbarton.gov.uk 0141 574 5789	Monthly data available a fortnight after month-end.
'Existing properties' update	Annual update 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 Manager: currently Graeme Lynn graeme.lynn@eastdunbarton.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@eastdunbarton.gov.uk 0300 123 4510 (ext. 3836) / 07788 368 490 Development & Investment Manager (for information on smaller-scale projects and refurbishments): currently Fraser Robb	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

		fraser.robb@eastdunbarton.gov.uk 0141 578 8621 / 07825 754 618	

* Consumption data held on SystemsLink is sourced in different ways; data sourced from invoices 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 (Department for Business, Energy, & Industrial Strategy) and are consistent with the GHG Protocol. It should be noted that they are calculated on a calendar year basis and are therefore not an exact 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.

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 2022.

Carbon Footprint Component	Project	Year	Predicted annual carbon saving (tCO_2e) in first year*
Built assets	Replacement of T8 multi lamp fittings with LED panels at Leisuredrome	2019/20	Unknown
Built assets	Introduction of humidity controls at Lillie Art Gallery	2020/21	9
Built assets	Replacement of 400 pool hall lamps with 200 LED lamps at Leisuredrome	2021/22	6
Built assets	Replacement of 30 bulkhead fittings with LEDs at Leisuredrome	2021/22	1
Built assets	Replacement of boilers at Milngavie Primary, Lennoxtown Primary, Craigdhu Primary, St Helen's Primary, Meadowburn Primary and John Street House	2022/23	80
Built assets	Replacement of 3 analogue CCTV cameras, 43 surveillance TV cameras, 10 mobile cameras and 8 monitors	2022/23	Unknown
Waste	Introduction of booking system at Mavis Valley Recycling Centre	2021/22	Unknown
Street lighting	Replacement of 200 street lights with LEDs	2019/20	12
Street lighting	Replacement of 200 street lights with LEDs	2020/21	12

Street lighting	Replacement of 120 street lights with LEDs	2021/22	4
Street lighting	Replacement of 200 street lights with LEDs	2022/23	6
Fleet	Replacement of 112 fleet vehicles with reduced-emission models	2021/22	Unknown
Fleet	Introduction of 7 additional electric vehicles to fleet	2021/22	Unknown
Fleet & business mileage	Introduction of FuelGood driver training	2019/20	Unknown

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