CLIMATE CHANGE STRATEGY

A Route Map for a net zero future

West
Dunbartonshire
COUNCIL

CONTENTS

ABBREVIATIONS

ASHP	Air Source Heat Pump
BECCS	Bioenergy with Carbon Capture and Storage
CCC	Committee on Climate Change
CHP	Combined Heat and Power
CO2	Carbon Dioxide
CCS	Climate Change Strategy
COP	Conference of the Parties
CRC	Climate Ready Clyde
DHN	District Heating Network
EPC	Energy Performance Certificate
EU	European Union
EV	Electric Vehicle
GHG	Greenhouse Gas
GSHP	Ground Source Heat Pump
LHEES	Local Heat and Energy Efficiency Strategy
NPF	National Performance Framework
NPF4	National Planning Framework 4
PV	Photovoltaic
RPP3	Climate Change Plan: third report on proposals and policies 2018–2032
SDG	Sustainable Development Goal
tCO2e	Tonnes of Carbon Dioxide equivalent
ULEV	Ultra-low Emission Vehicle
UNFCC	United Nations Framework Convention on Climate Change
WSHP	Water Source Heat Pump
ZEV	Zero-emissions Vehicle

FOREWORD

Councillor Iain McLaren,
Convener of Infrastructure,
Regeneration and Economic Development

I am delighted to introduce West Dunbartonshire's new Climate Change Strategy, which outlines our plans to reduce our organisation's environmental impact over the next five years and beyond.

It is vital that we take action now and play our part in the global effort to reduce the impacts of Climate Change.

In April 2019, the Scottish Government declared a climate emergency, highlighting that serious changes in our society were needed to address this growing issue. The aim of this Strategy is to build upon the existing environmental work the Council is undertaking, which has included looking at how we use and provide energy; encouraging our employees to be more environmentally-friendly; developing biodiversity sites throughout the area and taking steps to manage and reduce the Council-wide carbon footprint. Our environmental strategic work has included our previous Climate Change Strategy; Energy Strategy; and Carbon Management Plan.

Our new Climate Change Strategy looks to bring all these documents together and outline West Dunbartonshire Council's approach to Climate Change for the next five years and beyond to 2045. It sets a route map that will transform the way we operate as a Local Authority, integrating climate change mitigation, adaptation and sustainability measures into our operations as well as empowering our communities to take their own action to make change.

This illustrates the initial steps we will take to reduce the environmental impacts and associated emissions from our own operations, and how we will transform the way we protect our community and infrastructure from the impacts of Climate Change. Furthermore, it demonstrates our commitment as a 'major player' for mitigating national carbon emissions by supporting the Scottish Government in meeting its ambitious climate change targets.

I am confident that these commitments will allow us to continue to make progress on tackling climate change locally, while also supporting national and global efforts. I look forward to joining forces with our communities to see it progress.

01
CONTEXT
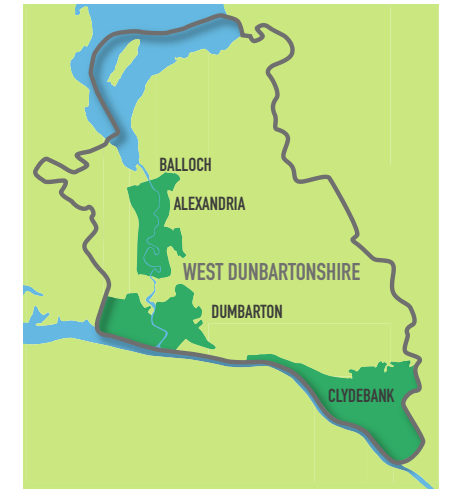
About West Dunbartonshire

West Dunbartonshire Council is a Local Authority in the West of Scotland, sitting between Glasgow and the Loch Lomond & Trossachs national park and often considered the gateway to the Scottish Highlands. With a population of just below 89,000 and an area of 68 sq. miles, West Dunbartonshire is a small Council both in terms of population and land coverage. However, despite its size, West Dunbartonshire boasts a diverse range of land uses, natural and built resources, and a mix of dense urban form, rugged moorland and spectacular watercourses.

The Council is responsible for provision of a range of services to its residents and citizens, which includes the collection of waste and recycling, the provision of schools and education, the management of planning and building standards, the provision of libraries, street lighting, and the collection of Council taxes.

In delivering these functions, the Council owns and operates a large built estate. Energy consumption from our buildings and operations are responsible for approximately 44% of our carbon footprint; 47% of our overall footprint results from the waste and recycling of West Dunbartonshire (both operational and domestic household waste); and 9% of the remaining emissions results from both Council and staff vehicles and the operation of other equipment, such as grass cutters. The Council also has responsibility to ensure it is delivering on Climate Change targets in line with Climate Change policy.

The Legal and Policy drivers

In a drive towards a low carbon economy, the Scottish Government set world leading Climate Change targets to reduce Scotland's carbon emissions by 80% by 2050, with an interim reduction of 42% by 2020. In 2014 this interim target was met and exceeded (45.8%), originally leading to a new target set for a reduction of 50% for 2020. These targets present Scotland with significant social and economic opportunities, as well as challenges, and require a range of actions across society and the economy. **The Climate Change (Scotland) Act 2009**, which details these targets, is regarded as one of the most ambitious Climate Change legislation anywhere in the world.

The Climate Change (Scotland) Act 2009 places duties on all public bodies to contribute to emission reduction targets deliver programmes to increase resilience against Climate Change, and to act in a 'Sustainable' way. Under the act, the Council is identified as a 'Major Player' due to its size and influence and therefore must submit a mandatory climate change report to Scottish Government (SG) on an annual basis, detailing the actions planned to reduce our environmental impacts. This Strategy will be underpinned by a suite of actions which will support delivery and allow for more effective reporting.

In Scotland's latest climate plan – **'Climate Change Plan: third report on proposals and policies 2018-2032 (RPP3)'**, further expectations are placed on the public sector to increasingly

demonstrate how its own operations are driving down emissions. RPP3 sets out the path to a low carbon economy while helping to deliver sustainable economic growth and secure the wider benefits to a greener, fairer and healthier Scotland in 2032. Since the publication of RPP3, a Climate Emergency has been announced by Scotland's First Minister, followed by new national emissions reduction targets and the **'Climate Change (Emissions Reduction Targets) (Scotland) Act 2019'** which details new emission reduction targets for Scotland nationally. These are:

- **56% reduction by 2020** (replacing the original 50% target)**;**
- **75% reduction by 2030;**
- **90% reduction by 2040; and**
- **'Net Zero' emissions by 2045.**
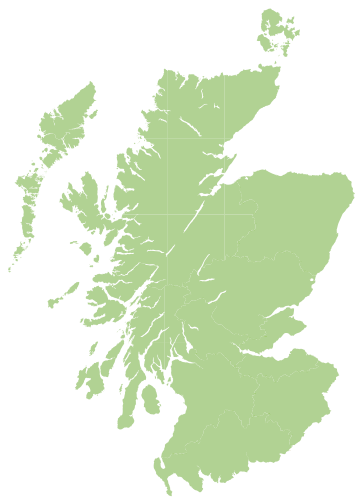
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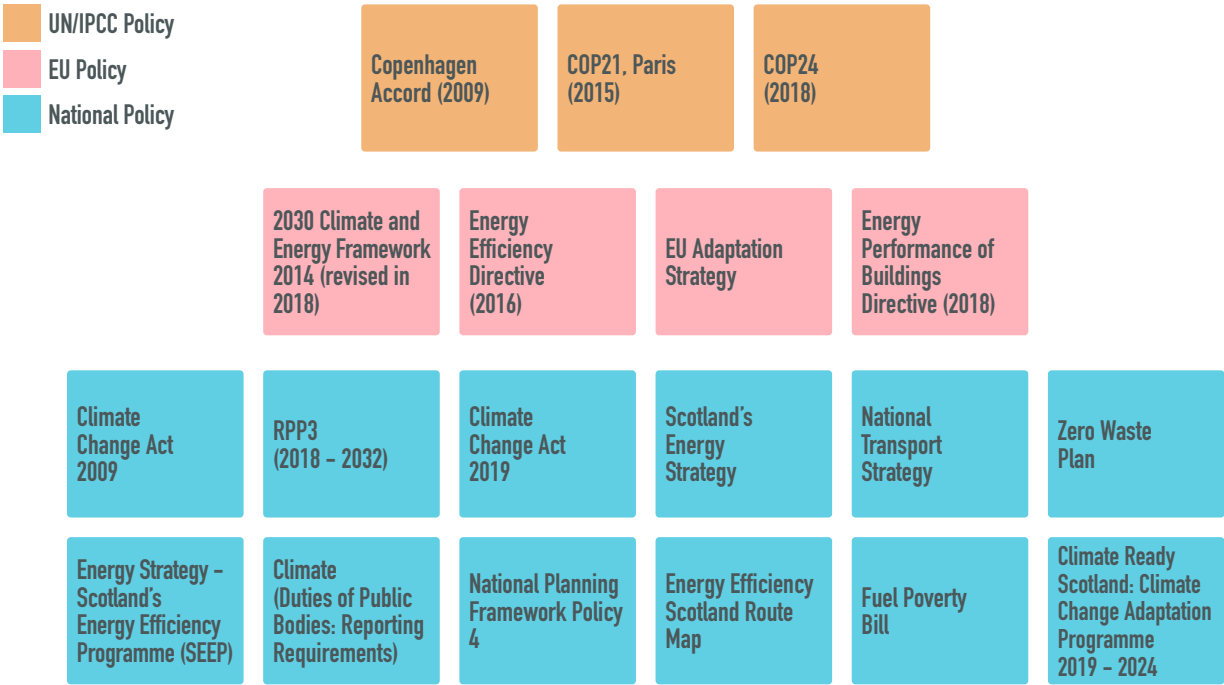
The Science

The global climate is changing at a considerable rate. In the 'State of the UK Climate 2019' report, the Met Office detailed how since 1884, the 10 warmest years recorded have occurred since 2002, whereas the top 10 coldest years were recorded before 1970. In Scotland, climate averages between 2009-2018 compared to averages for 1981-2010 show that:

- **Temperatures have increased by 0.3°C; and**
- **Summers have been on average 11% wetter and winters 5% wetter.**

By comparing current climate averages for 2009-2018 with averages for 1961 to 1990, the change is greater:

- **Temperatures have increased by 0.9°C; and**
- **Summers have been on average 13% wetter and winters 12% wetter.**

In 2018 the Met Office published new climate projection data (UKCP18) with the following headline data for Scotland, assuming current rates of global emissions reduction:

- **Changes in our climate will accelerate, with winters becoming warmer and wetter; and hotter summers with changing patterns and intensities of rainfall in some places;**
- **By the 2050's Scotland could see summer temperatures increased by 4-5 degrees Celsius, with 40-60% more winter rainfall in places;**
- **Rates of sea-level rise are predicted to increase at an accelerated rate, with a global sea level increase of between 0.56-1.12 metres by 2100; and**
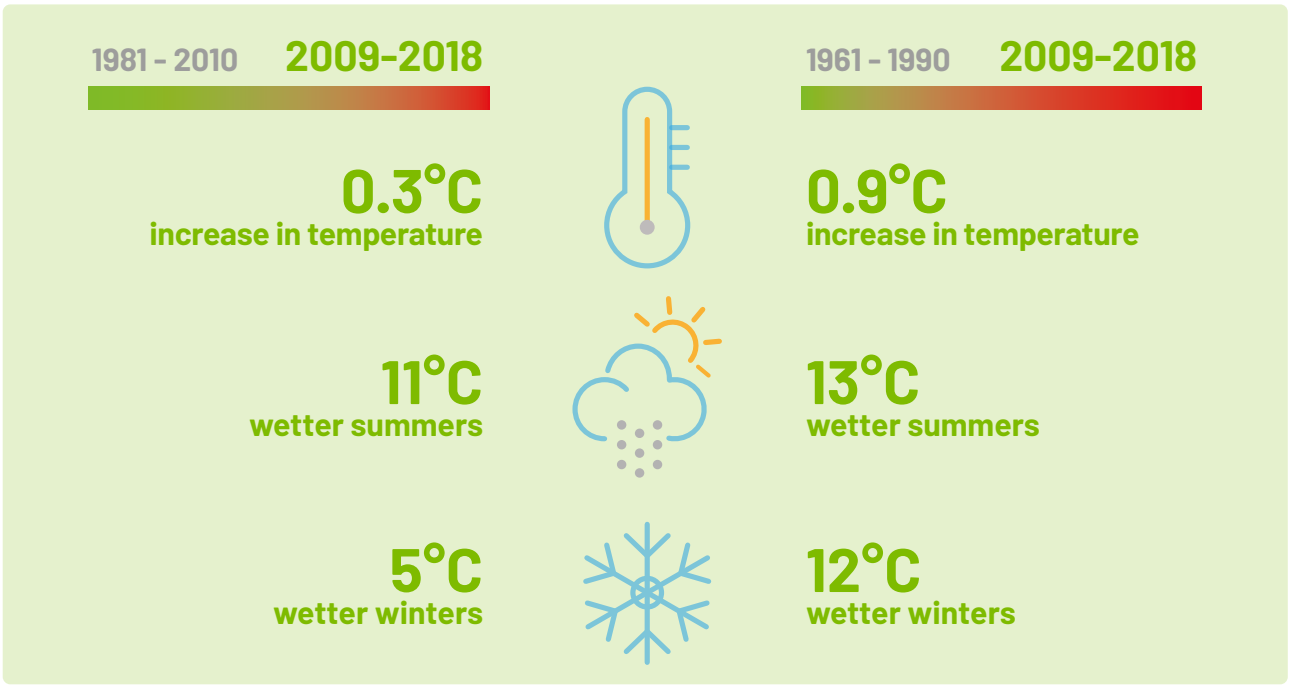- **Weather extremes will become increasingly the norm.**

UN/IPCC Policy	EU Policy	National Policy

Copenhagen Accord (2009)	COP21, Paris (2015)	COP24 (2018)	

2030 Climate and Energy Framework 2014 (revised in 2018)	Energy Efficiency Directive (2016)	EU Adaptation Strategy	Energy Performance of Buildings Directive (2018)

Climate Change Act 2009	RPP3 (2018 – 2032)	Climate Change Act 2019	Scotland's Energy Strategy	National Transport Strategy	Zero Waste Plan
Energy Strategy – Scotland's Energy Efficiency Programme (SEEP)	Climate (Duties of Public Bodies: Reporting Requirements)	National Planning Framework Policy 4	Energy Efficiency Scotland Route Map	Fuel Poverty Bill	Climate Ready Scotland: Climate Change Adaptation Programme 2019 – 2024

Figure 1: External policy drivers

1981 – 2010	**2009-2018**		1961 – 1990	**2009-2018**
	0.3°C increase in temperature			**0.9°C** increase in temperature
	11°C wetter summers			**13°C** wetter summers
	5°C wetter winters			**12°C** wetter winters

Figure 2: Scotland's climate averages

Figure 3: Warming Stripes: a visual representation of the change in Scotland's temperatures as measured over the past 100+ years. Each stripe represents one year, starting in the late 19th century (left) up until 2019 (right). The 'warmer' the stripe the higher the average recorded temperature was that year. (Source: www.showyourstripes.info)
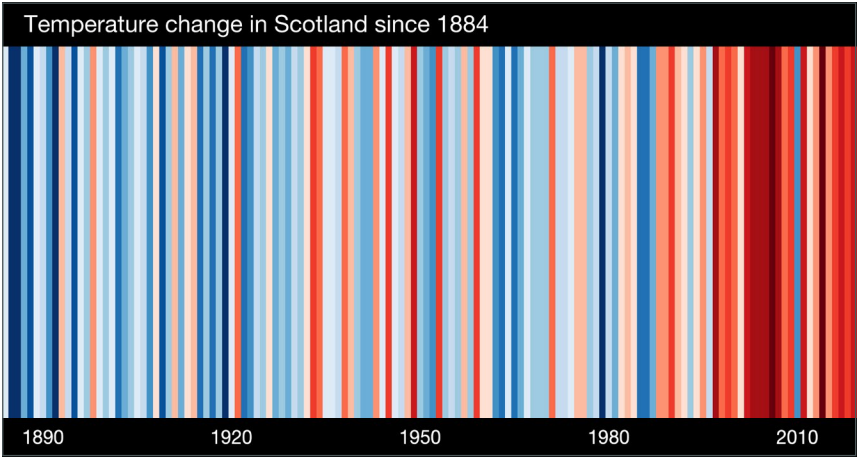
The Financial Case

While financial efficiencies are not the main driver for change in relation to climate change, it is evident that many of the actions likely to be taken will result in reduced costs. For example work to reduce waste, reduce unnecessary travel and cut energy use will bring both service efficiencies and reduced costs. Additionally, this work may mitigate and reduce the financial burden of responding to adverse events such as extreme weather or a public health pandemic.

The weather does not have to be extreme to have a negative impact on the delivery of our services. Relatively small changes, and progressive changes over time, in aspects such as temperature, rainfall, sunshine, snowfall and wind levels can result in disruption. As a local authority that has one of Scotland's largest estuaries running along much of its border, climate change is likely to be a significant issue in the near future. Sea level rise could result in the Council eventually having to choose between investing considerable amounts of money in new hard-engineered sea defences or allowing a degree of 'managed retreat' with an associated loss of land area.

Therefore, by improving organisational resilience against climate changes, the physical and financial consequences of more frequent extreme weather events as they become increasingly common, as well as limiting the effects of gradual changes in our climate.

Financial savings can also be achieved through addressing climate change. For example, the work carried out to reduce energy consumption across much of the estate has resulted in significant cost savings, as well as emissions reduction.

Sustainable Development Goals

The 17 Sustainable Development Goals (SDGs) are a universal call to action to end poverty, protect the planet and improve the lives and prospects of everyone, everywhere. These were adopted by all UN Member States in 2015, as part of the 2030 Agenda for Sustainable Development, and each goal has targets and indicators that UN member states are expected to use in setting their agendas over the next 15 years. Climate Change is at the core of how many of these goals can be delivered and as such, tackling climate change is essential for achieving sustainable development for all.

This Strategy will strive to adhere to the delivery of these goals at a local level, to ensure that West Dunbartonshire successfully works towards global aims of Sustainable Development.

These SDGs are summarised here:

1 END POVERTY
End poverty in all its forms everywhere

2 END HUNGER
End hunger, achieve food security and improved nutrition and promote sustainable agriculture

3 GOOD HEALTH AND WELL-BEING
Ensure healthy lives and promote well-being for all at all ages

4 QUALITY EDUCATION
Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

5 GENDER EQUALITY
Achieve gender equality and empower all women and girls

6 CLEAN WATER AND SANITATION
Ensure availability and sustainable management of water and sanitation for all

7 AFFORDABLE AND CLEAN ENERGY
Ensure access to affordable, reliable, sustainable and modern energy for all

8 DECENT WORK AND ECONOMIC GROWTH
Promote sustained, inclusive and sustainable economic growth, full of productive employment and decent work for all

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

10 REDUCED INEQUALITIES
Reduce inequality within and among communities

11 SUSTAINABLE CITIES AND COMMUNITIES
Making cities and human settlements inclusive, safe, resilient and sustainable

12 RESPONSIBLE CONSUMPTION AND PRODUCTION
Sustainable consumption and production patterns

13 CLIMATE ACTION
Take urgent action to combat Climate Change and its impacts

14 LIFE BELOW WATER
Conserve and sustainably use the oceans, seas and marine resources for sustainable development

15 LIFE ON LAND
Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

16 PEACE, JUSTICE AND STRONG INSTITUTIONS
Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

17 PARTNERSHIPS FOR THE GOALS
Strengthen the means of implementation and revitalise the global partnership for sustainable development

Global Efforts

The Paris Agreement
The Paris Agreement, adopted by world leaders of 195 countries, is the first-ever, legally binding global climate deal. The agreement sets out a global action plan to limit global warming to below 2°C.

Conference of Parties 26 (COP26)
The 26th session of the Conference of the Parties (COP 26) to the United Nations Framework Convention on Climate Change (UNFCCC) will take place in Glasgow in November 2021. The climate talks will be the biggest international summit the UK has ever hosted, bringing together over 30,000 delegates including heads of state, climate experts and campaigners to agree coordinated action to tackle climate change. The UN Climate Change process is central to that collective action and the Council must support the rapid global response required to tackle climate change on all fronts.

THE PARIS AGREEMENT
world leaders of
195
countries in agreement
to limit global warming
to below
2°C

COVID19 – A Green Recovery

The Committee on Climate Change (CCC) published its annual report in June 2020, which provided new advice to the Government on delivering a green economic recovery. The CCC set out the urgent steps that must be taken to begin a green and resilient COVID-19 recovery. The report highlights five key investment priorities:

1. **Low-carbon retrofits and buildings that are fit for the future;**
2. **Tree planting, peatland restoration, and green infrastructure**
3. **Strengthening energy networks;**
4. **Improving Infrastructure for walking, cycling and remote working; and**
5. **Moving towards a circular economy.**

The report also highlighted key opportunities to support the UK's workforce with behaviour change and innovation, including reskilling and training programmes; reinforcing climate positive behaviours, and research and innovation into low carbon and adaptation technologies.

The Council recognises the urgency to integrate these priorities into service delivery for and with the public, and in working towards more sustainable and attractive local communities. COVID19 has shown what is possible when agencies develop collective and partnership responses supported by evidence. As the focus shifts to recovery, we must seize this moment to deliver a better future for West Dunbartonshire. By working with our employees, and by following national policy, the Council can achieve a net zero future.

Scotland's National Performance Framework

This Strategy is also inspired by Scotland's National Performance Framework (NPF). This Strategy largely relates to NPF outcome: 'Environment - We value, enjoy, protect and enhance our environment.

Scotland is a beautiful country and we are blessed with abundant natural resources and architecture to rival the best in the world. The Council recognises that it is our duty to protect and enhance Scotland's abundant natural resources and architecture as it is essential to our economy, culture, way of life and the wellbeing of future generations.

The Council believes that our natural landscape and wilderness are essential to our identity and way of life. Therefore we support taking a bold approach to enhancing and protecting our natural assets and heritage. We want to help ensure all communities can engage with and benefit from nature and green space, through community empowerment and climate justice.

Building on Success

As of 2018-19 (the most recent full set of emissions data at time of writing), the Council has reduced our total emissions by 20.3% against our 2012-13 baseline.

Therefore, we must highlight the good work that has already been achieved, then improve and build upon the range of interventions that have already been implemented. These include (but not limited to):

- **The implementation of energy efficiency projects across our estate and housing;**
- **The Development of the Queens Quay District Heating Network (DHN) in Clydebank;**
- **Converting some of our pool fleet to Electric Vehicles (EVs);**
- **Engaging with schools and the community on waste reduction and greenspace; and**
- **Improving local Biodiversity and planting of native trees and bulbs across West Dunbartonshire**

CO_2

Council has reduced our total emissions by 20.3% against our 2012–13 baseline

02

THEMES
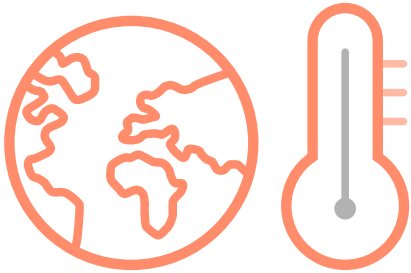
In considering the legislative and policy context, as well as the local position for West Dunbartonshire, the Council has identified nine distinct themes which form the basis of the Strategy to address climate change. These themes will be supported by a range of actions, to be reviewed and reported on an annual basis, which provide a coherent plan for delivery of the aspiration to reduce our environmental impacts, and contribution to climate change.

These priority themes and supporting actions are cross cutting and are the responsibility of all Council services. Reducing our impacts on climate change is a key strategic commitment of the Council, as reflected in this Strategy. Each theme has mandatory national and international policy drivers that help drive change and solidify responsibility for the Council and its services (Table 1).
These themes apply to Council operations and wider engagement with the community of West Dunbartonshire as a whole.

All Council services have responsibility to deliver on actions for each theme, but some services will have key responsibility. The development and delivery of actions for each theme will be carried out via the Climate Change Action Group (Climate Change Action Group).

Climate Change Strategy Themes

1 Energy & Water & Assets
- Climate Change (Scotland) Act 2009
- Climate Change (Duties of Public Bodies: Reporting Requirements)(Scotland) Order 2015
- Scottish Government's RPP3 (Low Carbon Scotland – Meeting our Emissions Reduction Targets 2018-2032)
- Scottish Government's Conserve and Save: Energy Efficiency Action Plan (2010)
- Scotland's Energy Strategy: The Future of Energy in Scotland (2017)
- 'Climate Change (Emissions Reduction Targets)(Scotland) Act 2019'
- Committee on Climate Change (CCC) - Net Zero – The UK's contribution to stopping global warming (2020)
- Energy Efficient Scotland Programme
- Scottish Non-Domestic Sustainability Building Handbook
- Scottish Domestic Sustainability Building Handbook
- Fuel Poverty (Targets, Definition and Strategy)(Scotland) Act 2019

2 Housing
- Climate Change (Scotland) Act 2009
- Climate Change (Duties of Public Bodies: Reporting Requirements)(Scotland) Order 2015
- Scottish Government's RPP3 (Low Carbon Scotland – Meeting our Emissions Reduction Targets 2018-2032)
- Scottish Government's Conserve and Save: Energy Efficiency Action Plan (2010)
- Scotland's Energy Strategy: The Future of Energy in Scotland (2017)
- 'Climate Change (Emissions Reduction Targets)(Scotland) Act 2019'
- Energy Efficient Scotland Programme
- Scottish Domestic Sustainability Building Handbook
- Fuel Poverty (Targets, Definition and Strategy)(Scotland) Act 2019

3 Waste & Circular Economy
- Climate Change (Scotland) Act 2009
- Climate Change (Duties of Public Bodies: Reporting Requirements)(Scotland) Order 2015
- 'Climate Change (Emissions Reduction Targets)(Scotland) Act 2019'
- Waste (Scotland) Regulations 2012
- Scotland's Zero Waste Plan 2010
- Making Things Last - A Circular Economy Strategy for Scotland
- The Deposit and Return Scheme for Scotland Regulations 2020

4 Sustainable Travel
- Climate Change (Scotland) Act 2009
- Climate Change (Duties of Public Bodies: Reporting Requirements)(Scotland) Order 2015
- 'Climate Change (Emissions Reduction Targets)(Scotland) Act 2019'
- Scottish Government's RPP3 (Low Carbon Scotland – Meeting our Emissions Reduction Targets 2018-2032)
- Transport Scotland: Transport Strategy II
- National Planning Framework 4 (NPF4)

5 Sustainable Procurement
- Procurement Reform (Scotland) Act 2014
- Scottish Sustainable Procurement Action Plan
- Scottish Government's Sustainable Procurement Tools
- Scottish Government's Sustainable Procurement Guidance
- Government Buying Standards
- EU Green Public Procurement Criteria (s)

6 Biodiversity, Landscape & Greenspace
- Scottish Biodiversity Strategy
- Scotland's Biodiversity: It's in your hands
- The 2020 Challenge for Scotland's Biodiversity
- Nature Conservation (Scotland) Act 2004.
- The Wildlife and Natural Environment (Scotland) Act 2011 (WANE Act)
- Wildlife and Countryside Act 1981
- Scottish Biodiversity List
- Habitat Regulations 1994 and their amendments in Scotland
- Nature Conservation (Scotland) Act 2004
- The Wildlife and Natural Environment (Scotland) Act 2011 (WANE Act)
- Wildlife and Countryside Act 1981
- Greenspace Biodiversity Action Plan 2018-2020
- Glasgow and Clyde Valley Green Network Blueprint
- National Planning Framework 4 (NPF4)

7 Climate Impacts, Risk & Adaptation
- Adaptation Reporting Power - created as part of the Climate Change Act (2008)
- Climate Ready Clyde (CRC) - Adaptation Strategy and Action Plan (The Plan)
- Climate Ready Scotland: Scottish Climate Change Adaptation Programme 2019
- National Planning Framework 4 (NPF4)

8 Schools & Education
- Eco-Schools Scotland
- Sustainable Development Goals (SDGs)
- Curriculum for Excellence through Outdoor Learning
- Outdoor Learning Strategy
- Forest Schools
- Learning in Local Greenspace (SNH implementation of the Scottish Biodiversity Strategy Route Map to 2020 Priority Project 6)

9 Communities & Health
- Fuel Poverty (Targets, Definition and Strategy)(Scotland) Act 2019
- Climate Ready Scotland: Scottish Climate Change Adaptation Programme 2019
- Just Transition Commission: advice on a green recovery (2020)
- National Planning Framework 4 (NPF4)

Table 1: Summary of themes and related policies.

03
WORKING TOWARDS NET ZERO

As a large public sector organisation and 'major player' under the Climate Change (Scotland) Act 2009, the Council has a responsibility to set ambitious but achievable targets that reflect national Greenhouse Gas (GHG) emissions reduction targets set by the Scottish Government.

Net zero refers to achieving an overall balance between emissions produced and emissions taken out of the atmosphere. Simply, this means that for all the emissions produced there must be mitigating actions in place to remove the same level of emissions from the atmosphere. This is illustrated in Figure 5. The interventions range from land-use change methods, tree-planting, rewilding, peatland restoration, investing in carbon-offsetting charities, technical solutions that draw carbon from the air, or Bioenergy with Carbon Capture and Storage (BECCS).
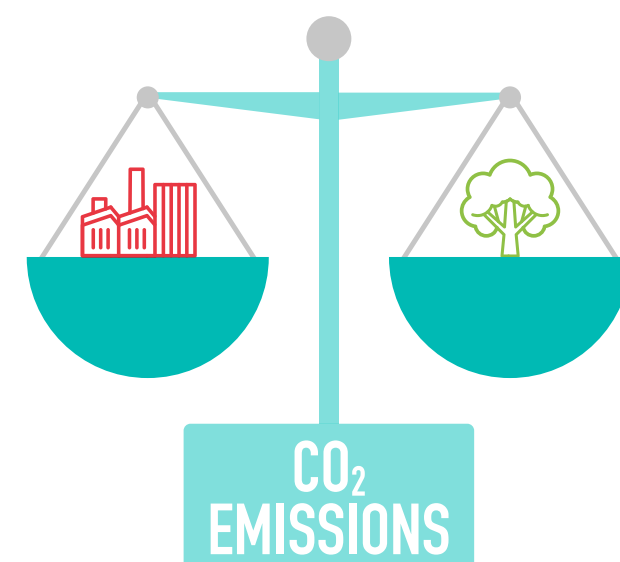
Figure 5:
Illustration of the Net Zero concept. After the appropriate mitigation measures have been implemented, bodies must sequester the same amount of GHG emissions that they are emitting from their operations

Carbon Removal and Offsetting

The reduction of emissions through mitigation measures and projects is the most important means of reducing our environmental impact and associated costs. However, to ensure that the Council and our community are Net Zero by 2045, we must look for ways to physically remove carbon from the atmosphere from our own land and 'offset' some of the carbon that we are emitting, for example by investing in or purchasing of carbon removal initiatives. To offset means the action or process of compensating for carbon dioxide emissions arising from our operations and wider human activities, by participating in schemes designed to make equivalent reductions of carbon dioxide in the atmosphere.

Since the Council does not own or operate much forestry or peatland to remove carbon from the atmosphere, we must also take part in initiatives for replanting forests and reinstating peatlands which could be used to offset our emissions.

The Council has already started this journey through existing and planned tree planting initiatives on our own land. Additional areas will need to be assessed on existing Council-owned land to identify further opportunities for direct carbon removal.

Therefore, theoretically the Council could achieve net zero by simply purchasing offsets. However, it is our duty as a public body to use offsetting responsibly to aid us in our journey towards net zero, not drive it. We must reduce our emissions, but also consider the likelihood that prices for offsetting are likely to go up as these practices become more popular when net zero targets are more widely adopted.

Therefore, we will follow guidance from Scottish Government as it becomes available, and will ensure that the purchasing of offsets will be undertaken carefully to ensure they are of the highest quality.

West Dunbartonshire Net Zero Carbon Budget

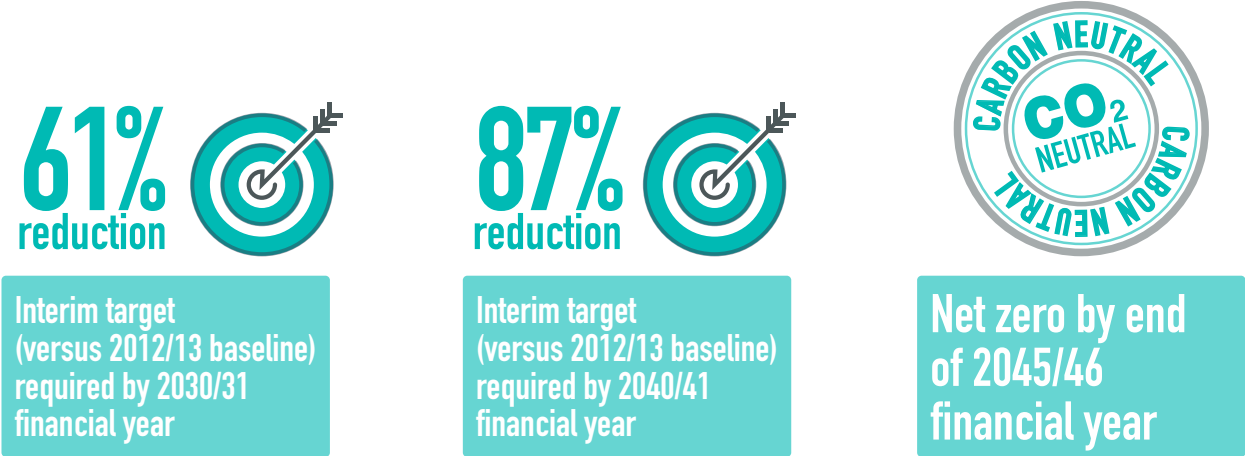In order to set a net zero pathway and actions for this Strategy the following information was collated;

- **An understanding of greenhouse gas emissions for the Council at a set starting point (our new 2012-13 'Baseline year')**
- **An understanding of greenhouse gas emissions reduction for the Council since the starting point (the 'Status Quo monitoring scenario') and;**
- **Consideration of future emissions projections.**

Emissions reduction pathway to net zero

Appendix I details how emissions have been projected out to 2045 under a 'Status Quo' monitoring scenario, including grid electricity projections to account for future decarbonisation of the grid itself. Such a scenario is insufficient to achieving 'net zero'.

A long-term 2045 net zero emissions reduction target has been set for the Council. This has been developed in a way that mirrors the emission reduction trajectory set by Scottish Government for Scotland in light of the Climate Emergency. Since Scottish Government is using a baseline of 1990 and the Council is using a baseline of 2012/13 (our first full year of data), our starting points are significantly different. Therefore, we have instead devised an approach whereby we have matched their level of ambition (as shown in the following chart) and have a parallel pathway to net zero despite the different starting points.

Therefore, in order to achieve net zero by 2045 in line with national interim targets set by Scottish Government, the Council will adopt the following:

61% reduction

Interim target (versus 2012/13 baseline) required by 2030/31 financial year

87% reduction

Interim target (versus 2012/13 baseline) required by 2040/41 financial year

CARBON NEUTRAL CARBON NEUTRAL · CO₂ NEUTRAL

Net zero by end of 2045/46 financial year

These interim targets can also be expressed in absolute values as:

2030/31 target – Reduction of emissions by 20,235 tCO2e versus 2012/13 baseline (32,961 tCO2e)

2040/41 target – Reduction of emissions by 28,719 tCO2e versus 2012/13 baseline (32,961 tCO2e)

The following chart shows this is approximately in line with the level of ambition proposed by the Scottish Government (green pathway) in the most recent update to the Climate Change Act. The aquamarine line illustrates a 'Status Quo' scenario if the Council were to do nothing from 2020 onwards, with emission levels decreasing slightly due to the decarbonisation of the electricity grid.
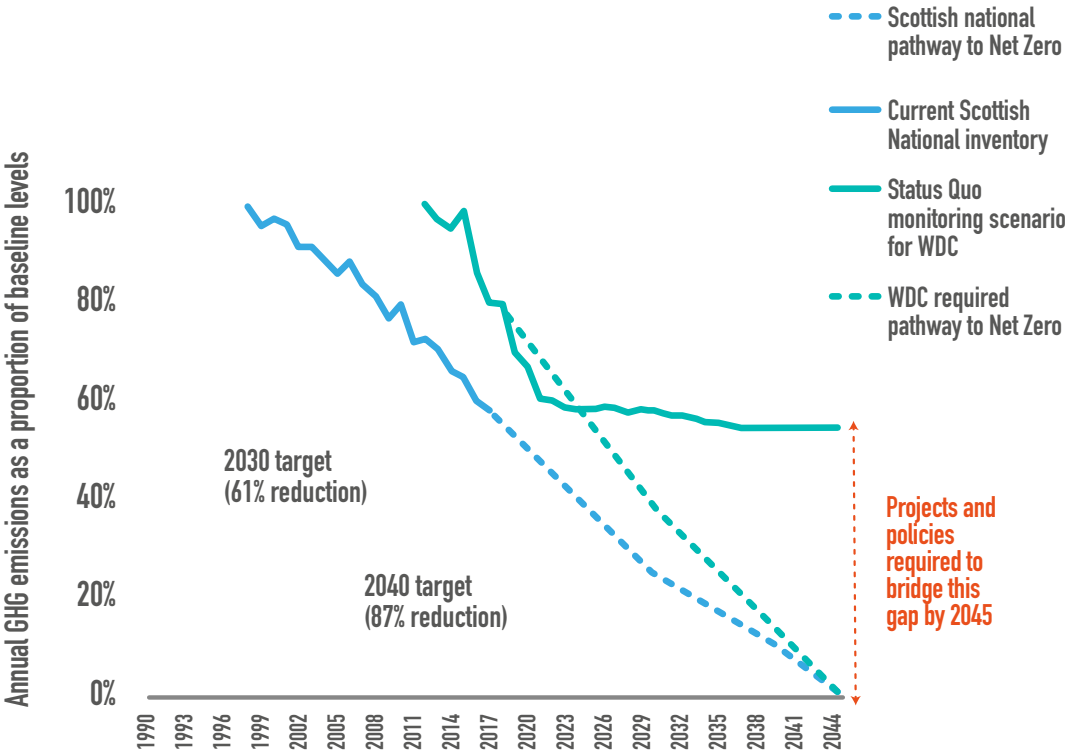

Legend:
- - - Scottish national pathway to Net Zero
—— Current Scottish National inventory
—— Status Quo monitoring scenario for WDC
- - - WDC required pathway to Net Zero

2030 target (61% reduction)

2040 target (87% reduction)

Projects and policies required to bridge this gap by 2045

Annual GHG emissions as a proportion of baseline levels

Figure 6:
Pathway to net zero detailing national Scottish pathway in comparison to the pathway required for West Dunbartonshire Council.

04
DELIVERING THE STRATEGY

Reviewing Progress

This Strategy currently focusses on our operational emissions, adaptation activities and wider engagement with the staff and public on environmental challenges. It is essential that all internal stakeholders play their part in taking forward, whilst also reviewing, developing and implementing new actions as issues emerge. With this in mind, we will amend and evolve the Strategy to reflect ongoing changes in wider climate change policy and technological innovations, etc.

The Strategy will be reviewed annually and progress on actions may be altered with more explicit quantitative targets being added if necessary. Every five years it will go through a full progress review and then an updated Strategy will be published as a result.

Governance

Successful implementation of the Climate Change Strategy will require internal governance at both strategic and operational levels.

To ensure that this Strategy is delivered effectively, a new Climate Change Action Group has been launched involving senior management from each Council service area, ensuring shared responsibility of climate targets and objectives for their own service areas.

The Climate Change Action Group will be accountable for the operational delivery of the Strategy and action plan. This group will measure progress by each service and will ensure climate change targets and objectives are being met. These will be measured annually through our internal performance system to ensure ownership, and to mainstream Climate Change across service areas. Actions will each be developed, agreed then allocated to their relevant service areas, with the Climate Change Action Group assessing the feasibility of delivering such action(s); the agreement of timelines for their delivery, and the operational details of achieving the action(s). This will be a continually evolving process.

The Climate Change Action Group will meet on a quarterly basis and will also involve engagement from external bodies who will provide useful support and advice on delivering Climate Change targets.

The long-term nature of this Strategy allows time to deliver these actions up to the 2045-46 financial year. Deliverables can be amended or revised periodically as national or international climate change measures change, with actions being allocated accordingly. Furthermore, in order to achieve net zero by 2045-46, innovations and advancements through both technology and the way in which we work, must occur at a global and national level in order for the Council to respond accordingly and set realistic actions that can be achieved in the current financial environment.

A Climate Change Action Plan (CCAP) will be developed, with each service focussing on areas

that the Council can make the biggest impact, and developing actions and approaches to climate change measures over time. The role of the Sustainability Team is to coordinate, stimulate and motivate Climate Change action for the Council, with service areas having to plan, implement and deliver actions as they best understand how their areas work. This is key to effective ownership of Climate Change action and in insuring that Climate Change is mainstreamed in what they do over time.

Cross-Cutting Policy

The Council will ensure that current and future policies and strategies integrate Climate Change as a key facet of their objectives.

Governance of Climate Change action will become more mainstreamed throughout our operations when this Strategy cross-cuts across all other major Council policy documents – including (but not limited to) the WDC Strategic Plan; Community Empowerment Strategy; Local Development Plan 2 (LDP2); Economic Development Strategy and renewables planning guidance.

Inspiring change

The Council is committed to inspiring change in line with the Scottish Government ambition to change behaviours and empower communities to take responsibility for mitigating against, and adapting to, the impacts of climate change. Any 'behaviour change' intervention is most likely to be successful when it works in an integrated way. Programmes that look to bring together individual, social and material elements in a coherent way, to create new and lasting social norms, are most likely to be successful.

Examples of such programmes that can help reduce environmental impacts in the Council are:

- **Including Climate Change in staff induction, training, team meetings etc., akin to introducing the importance of health and safety at work;**
- **Having staff complete mandatory e-learning modules on an annual basis for continued personal development;**
- **Ensuring staff know and understand organisational expectations regarding Climate Change behaviours and how to mitigate them;**
- **Having management set climate change targets for their services and lead by example;**
- **Having a dedicated climate change communications plan and associated 'brand' for staff to recognise and work towards;**
- **Producing visuals/infographics to illustrate consumption trends; and**
- **Encouraging the rotation of Green Champion roles amongst staff – to help normalise Climate Change and Sustainability practices across the Council.**


Energy & Water & Assets

The Council will continue to take action to reduce energy consumption and improve energy and water efficiency in our buildings and across our operations. We will also take into account the rationalisation and improved utilisation of our offices, depots and other buildings, ensuring that we respond adequately to the green recovery of the Covid19 pandemic and futureproofing our assets for a net zero.

Energy consumption (via heat, power and water), including their subsequent emissions, are dependant on many factors (both social and economic). Some of these factors can be addressed in the short term, while others need to be considered over long periods of time which involves strong and sustained data records from these energy sources. In recent years significant progress has been made in better understanding, monitoring and recording these energy sources in order to reduce consumption and improve practice.

Energy and Water currently make up 44% of the overall carbon footprint, so it is important that we continue to make efforts to reduce consumption and emissions from energy and water to have a greater chance of getting to net zero by 2045. We will therefore maintain or exceed the current energy reduction target of 2% set in our previous Energy Strategy.

energy and water currently make up 44% of the overall carbon footprint
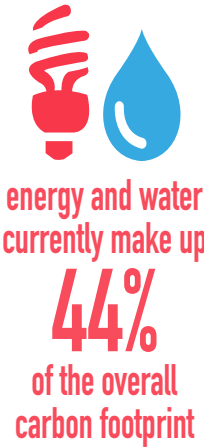
We are currently developing a pilot Local Heat and Energy Efficiency Strategy (LHEES) to improve our efforts, which will set the Strategy and framework for reducing energy demand and decarbonising the heat supply in the Clydebank area and Queens Quay heat network.

LHEES aim to establish area-based plans and priorities for improving the energy efficiency of buildings, and decarbonising heat. These will then be developed and expanded to other areas across West Dunbartonshire.

It is the first step in the Council developing and adopting a wider 20 year Strategy that will strive towards achieving net zero emissions from buildings by 2045, and removing poor energy efficiency as a driver for fuel poverty. More details on this can be found in Appendix 2.

Housing

The Council will continue to take action to reduce energy consumption and improve energy efficiency in our social housing and fuel poor households, ensuring fuel poverty and the decarbonisation of housing are key to achieving a net zero carbon future.

This will require the implementation of high standard energy efficiency improvements to all existing domestic Council stock and future developments, whilst minimising overheating risks and ensuring future resilience to the impacts of climate change.

Furthermore, where technically feasible and cost effective, we will consider retrofit, renovation and maintenance of existing domestic buildings over the construction of new buildings and developments - mitigating our environmental impacts from Land Use Change (LUC), resource extraction and development, and wider supply chain emissions.

Waste & Circular Economy

The Council will take action to manage waste sustainably by reducing, reusing, recycling and recovering waste to improve resource efficiency whilst working towards a circular economy. According to Zero Waste Scotland, A circular economy "is part of the solution to our global climate emergency - one in which products, services and systems are designed to maximise their value and minimise waste. It's an all-encompassing approach to life and business, where everything has value and nothing is wasted. In simple terms, it can be explained as 'make, use, remake' as opposed to 'make, use, dispose'."

For the Council to avoid waste and move towards a circular economy we must make efforts to develop a new corporate waste management, reduction, reuse and recycling plan detailing corporate standards, targets and staff guidance for our waste activities, including improving infrastructure.

This will establish true costs of waste disposal and assigning responsibility to services through transparent accounting.

Action will be taken on waste from domestic households, researching ways to transition to a zero waste and circular economy by supporting national efforts, and in developing a domestic waste Strategy for West Dunbartonshire. Waste makes up around 47% of our Council emissions (45% from Household Waste and 2% from our own operational waste) so making efforts to reduce our environmental impacts by shifting towards circular waste practices will make a considerable reduction in emissions to achieve net zero.

waste makes up around 47% of our Council emissions

Sustainable Travel

The Council will take action to encourage active travel through walking, cycling and public transport and deploy sustainable alternatives to decarbonise transport.

For the Council to better transition to more Sustainable modes of transport and active travel alternatives, it is important that we develop and implement a new Sustainable Travel Action Plan and associated Policy for both the Council and West Dunbartonshire.

Transport makes up around 9% of our Council emissions, but major cost savings can also still be made in addition to reducing carbon emissions and harmful air pollution across West Dunbartonshire.

Sustainable Procurement

The Council will take action to meet the needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of reducing carbon emissions, generating benefits for society and the economy and minimising damage to the environment.

Procurement behaviours influence the environmental impacts and overall carbon emissions of our operations. We must ensure that action is taken to inspire positive change in staff and contractor behaviours by continuing to embed carbon and climate change targets into the procurement process, and to hold suppliers and contractors, etc. accountable for the impacts that they have on the environment.

Biodiversity, Landscape & Greenspace

The Council will make efforts to improve and increase local plant and animal species diversity, including greenspaces, parks and wider landscapes; with the aims of improving local ecology, health and wellbeing.

This means the Council needs to embed biodiversity and landscape management and the Food Growing Strategy into organisational targets by ensuring that it is considered in all appropriate decision-making. Biodiversity, Greenspace and Landscape, like any other climate change interventions, should be integrated into what the Council does both operationally and through positive behaviours.

Climate Impacts, Risk & Adaptation

The Council will make efforts to make our communities, green networks and infrastructure more adaptable to a changing climate and reduce the risks and vulnerability to unavoidable impacts. A major part of these efforts will be to contribute to and Support the Climate Change Adaptation Plan for the Glasgow City Region, currently being developed by Climate Ready Clyde (CRC). This will also involve the mainstreaming of adaptation into other key Council plans and strategies.

Schools & Education

The Council will work more closely with schools to better consider the environment and Climate Change in all operations; to act in a Sustainable way; and to educate and empower pupils to take action on Climate Change to influence future generations.

This will include ensuring that all schools achieve Eco-Schools Green Flag status by 2025. We will increase participation in the Eco Schools programme via improved local support and pilot projects with appointed schools.

Communities & Health

The Council will take action through positive engagement with equality groups and the wider community, including (but not limited to) local businesses and health & social care partnerships. This will be achieved through engagement with, and empowerment of, the wider public within and outside West Dunbartonshire.

With support from Climate ready Clyde (CRC) and wider Glasgow City region, we will develop Climate Change engagement tools to support community capacity building, particularly in being prepared for, and responding to, the impacts that Climate Change and extreme weather events will have on infrastructure and public health and wellbeing.

We will also continue to support West Dunbartonshire businesses in becoming carbon neutral and climate resilient. This will require leadership from West Dunbartonshire public sector building owners and social landlords to demonstrate opportunities stimulate supply chains and drive technology cost reductions through effective procurement.

APPENDIX 1
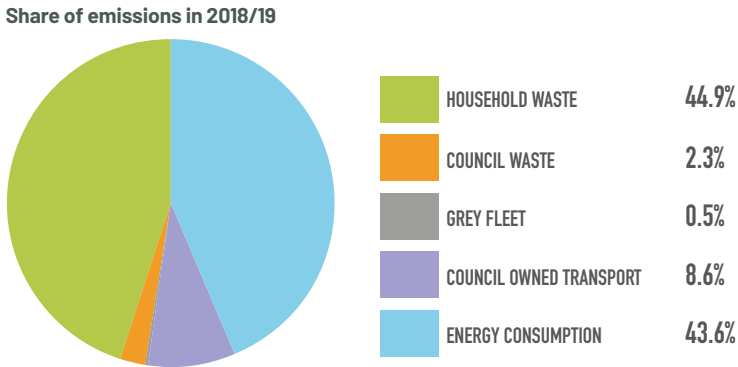## CARBON FOOTPRINT & ORGANISATIONAL BOUNDARY

Baseline Year

Organisational Boundary

In line with the World Resources Institute Greenhouse Gas Protocol, the organisational boundary sets out which assets are to be included in the footprint and how any shared assets will be accounted for. The organisational boundary is defined for each emissions source below.

1. **Emissions from Council owned transport;**
2. **Emissions from grey fleet transport (staff car mileage);**
3. **Emissions from heat, power and water from Council operations (e.g. energy consumption);**
4. **Emissions from household waste; and**
5. **Emissions from Council waste.**

The baseline year for this Climate Change Strategy is the 2012/2013 financial year. Based on the organisational boundary outlined above, the Council's carbon footprint for 2012/13 was 32,961 tonnes of carbon dioxide equivalent (tCO2e). A breakdown of the emissions share is detailed within the Appendix and also displayed below;

Share of emissions in 2012/13

HOUSEHOLD WASTE	19.4%	
COUNCIL WASTE	3.1%	
GREY FLEET	1.5%	
COUNCIL OWNED TRANSPORT	8%	
ENERGY CONSUMPTION	67.9%	
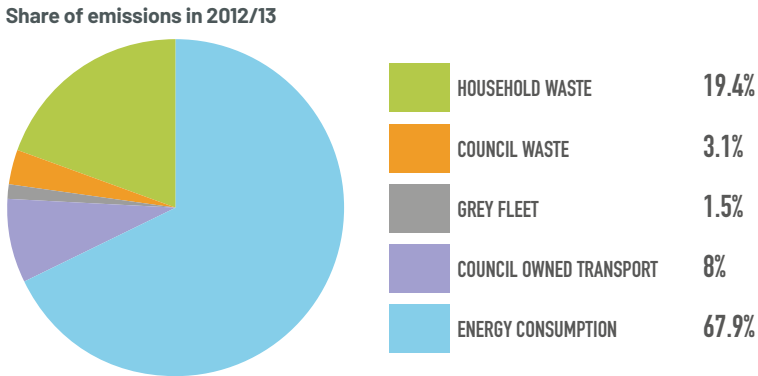
'Status Quo' monitoring scenario

The last year of reporting was completed in November 2019 for the 2018/19 financial year. The total footprint of 26,266 tCO2e can be broken down as follows:

Share of emissions in 2018/19

HOUSEHOLD WASTE	44.9%	
COUNCIL WASTE	2.3%	
GREY FLEET	0.5%	
COUNCIL OWNED TRANSPORT	8.6%	
ENERGY CONSUMPTION	43.6%	

It is worth noting here that the significant change in household waste and Council waste emissions since 2012/13 are largely down to large fluctuations in waste emission factors. Household waste consumption (tonnage) has seen a small increase, while Council waste consumption (tonnage) has reduced slightly since 2012/13.

The Council previously set a target to reduce its calculated 2012/13 baseline carbon footprint by 5,061 tCO2e by the end of 2019/20. This equates to a percentage reduction of 15.4%.

Since 2012/13 and the most recent reporting year (2018/19), a 20.3% reduction in emissions has already been achieved so this target therefore has already been met and exceeded over two years in advance.

2012/13 Baseline Year

The baseline year for this Climate Change Strategy is the 2012/2013 financial year. Based on the scope outlined above, the Council's carbon footprint baseline, for 2012/13 was 32,961 tCO2e. The table and graph below illustrate the components of that footprint in terms of carbon emissions:

Emission source	Activity	2012/13 Emissions (tCO$_2$e)	Share
Grid electricity	Energy consumption	13,593	41.2%
Natural gas	Energy consumption	5,051	15.3%
Gas oil	Energy consumption	3,544	10.8%
Water	Energy consumption	190	0.6%
Diesel	Transport	2,401	7.3%
Car mileage (grey fleet)	Transport	471	1.4%
Petrol	Transport	111	0.3%
Kerosene	Energy consumption	15	0.0%
Council waste	Council waste	1,020	3.1%
Household waste	Household waste	6,411	19.4%
Commuting	Transport	24	0.1%
Gas oil	Transport	131	0.4%
Total		32,961	100%

*Emission factors provided by BEIS to calculate this footprint
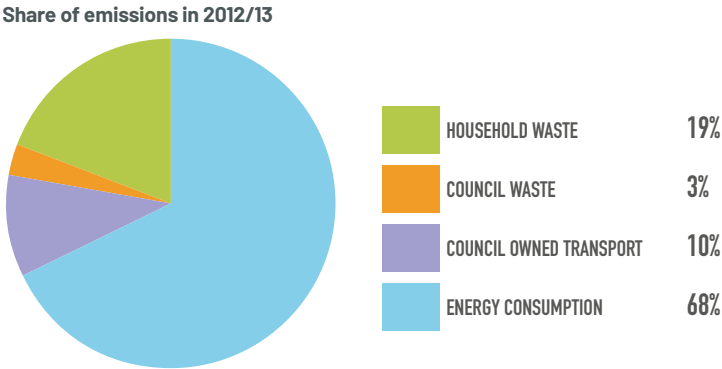
'Status Quo' monitoring scenario

The table below shows the progress from the baseline year to the latest reporting year (2018/19). A 20% reduction in emissions has already been achieved:

Year	Emissions (tCO$_2$e)	% Annual reduction	% Reduction from baseline
2012/13	32,961		
2013/14	31,931	-3.1%	-3.1%
2014/15	31,451	-1.5%	-4.6%
2015/16	32,549	3.3%	-1.2%
2016/17	28,387	-12.6%	-13.9%
2017/18	26,433	-5.9%	-19.8%
2018/19	26,264	-0.5%	-20.3%

The last year of reporting was completed in November 2019. The total footprint of 26,264 tCO2e can be broken down as follows:

Emission source	Activity	2018/19 Emissions (tCO$_2$e)	Share
Grid electricity	Energy consumption	6,154	23.4%
Natural gas	Energy consumption	4,635	17.7%
Gas oil	Energy consumption	480	1.8%
Water	Energy consumption	185	0.7%
Diesel	Transport	2,190	8.3%
Car mileage (grey fleet)	Transport	136	0.5%
Petrol	Transport	76	0.3%
Biomass	Energy consumption	4	0.0%
Council waste	Council waste	617	2.4%
Household waste	Household waste	11,787	44.9%
Total		26,264	100%

*Emission factors provided by BEIS to calculate this footprint
**Does not include kerosene or commuting in 2018/19 although these emissions were negligible
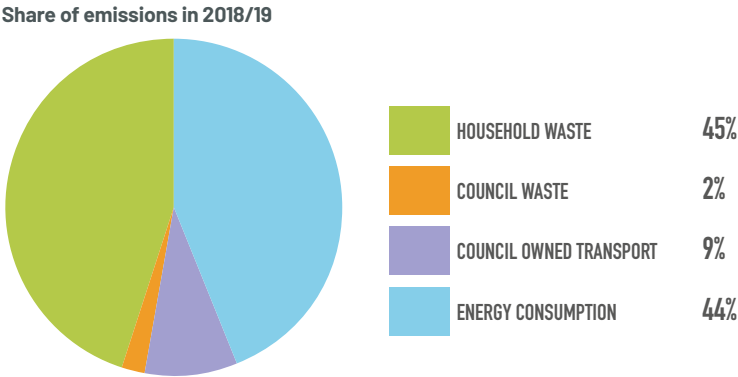
Share of emissions in 2012/13

HOUSEHOLD WASTE	19%
COUNCIL WASTE	3%
COUNCIL OWNED TRANSPORT	10%
ENERGY CONSUMPTION	68%

Share of emissions in 2018/19

HOUSEHOLD WASTE	45%
COUNCIL WASTE	2%
COUNCIL OWNED TRANSPORT	9%
ENERGY CONSUMPTION	44%

It is worth noting here that the significant change in household waste and Council waste emissions since 2012/13 is largely down to large fluctuations in waste emission factors. Household waste consumption (tonnage) has seen a small increase, while Council waste consumption (tonnage) has reduced slightly since 2012/13.

Consideration of future emissions projections

The graph below shows both the reported emissions from 2012/13 to 2018/19 and then the 'Status Quo' monitoring scenario projection out to 2045/46. This scenario represents a 'Status Quo' case and assumes no further work is done between now and 2045 to reduce carbon emissions other than work/projects that have already been carried out and as the electricity grid becomes decarbonised, including efficiencies to internal combustion engines within vehicles, etc. It also accounts for known future estate changes and other organisational changes that will impact emissions.

Please note, the 'Status Quo' scenario makes some broad assumptions about the future of the electricity grid factor out to 2045/46. All other emission factors remain equal to the latest UK emissions factor dataset as published in 2019 by BEIS.

Historic emissions and BAU projection
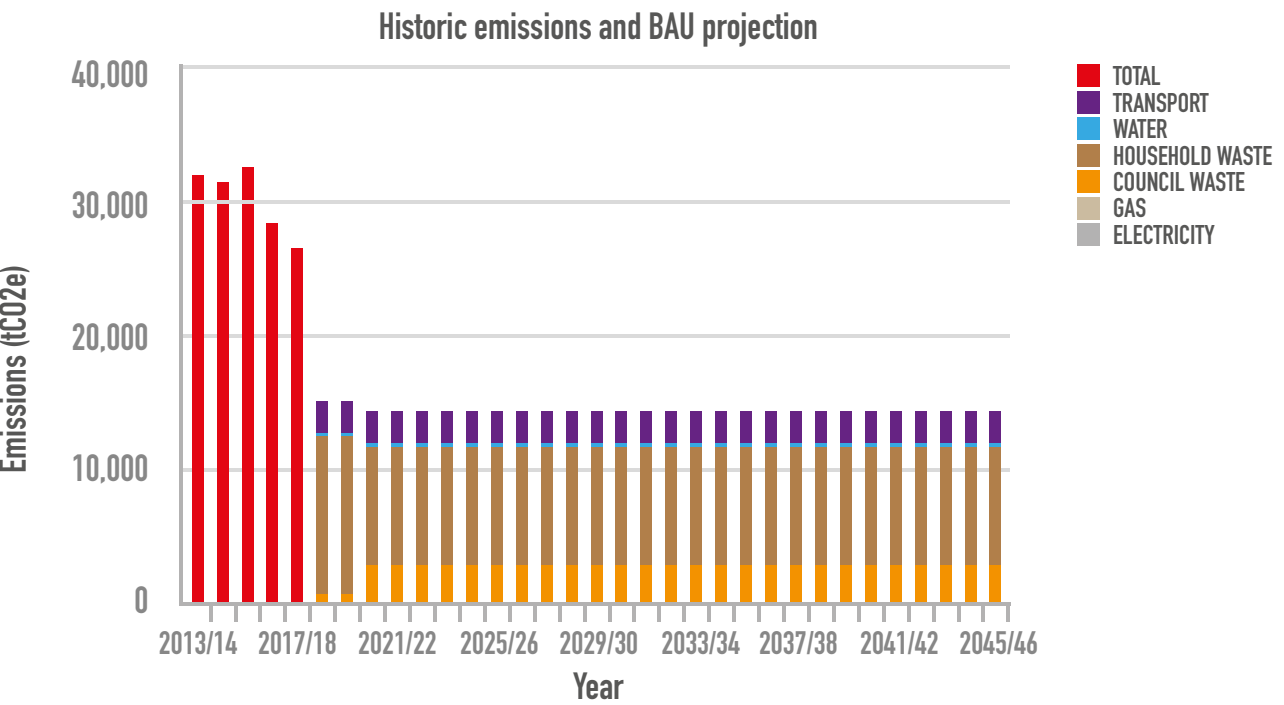
Grid Electricity (kWh) – Generation & Transmission & Distribution losses		
Financial year	**kg Co2e/kWh**	**Source**
2018/19	0.3072	Conversion factors for company reporting 2018
2019/20	0.2773	Conversion factors for company reporting 2019
2020/21	0.25319	Conversion factors for company reporting 2020
2021/22	0.143973988	https://www.gov.uk/government/collections/energy-and-emissions-projections
2022/23	0.136487789	https://www.gov.uk/government/collections/energy-and-emissions-projections
2023/24	0.114810129	https://www.gov.uk/government/collections/energy-and-emissions-projections
2024/25	0.107985515	https://www.gov.uk/government/collections/energy-and-emissions-projections
2025/26	0.110973054	https://www.gov.uk/government/collections/energy-and-emissions-projections
2026/27	0.111334347	https://www.gov.uk/government/collections/energy-and-emissions-projections
2027/28	0.107784291	https://www.gov.uk/government/collections/energy-and-emissions-projections
2028/29	0.097670797	https://www.gov.uk/government/collections/energy-and-emissions-projections
2029/30	0.105490596	https://www.gov.uk/government/collections/energy-and-emissions-projections
2030/31	0.099682999	https://www.gov.uk/government/collections/energy-and-emissions-projections
2031/32	0.090531224	https://www.gov.uk/government/collections/energy-and-emissions-projections
2032/33	0.085465594	https://www.gov.uk/government/collections/energy-and-emissions-projections
2033/34	0.076053887	https://www.gov.uk/government/collections/energy-and-emissions-projections
2034/35	0.063736642	https://www.gov.uk/government/collections/energy-and-emissions-projections
2035/36	0.059706996	https://www.gov.uk/government/collections/energy-and-emissions-projections
2036/37	0.050854735	https://www.gov.uk/government/collections/energy-and-emissions-projections
2037/38	0.041229154	https://www.gov.uk/government/collections/energy-and-emissions-projections
2038/39	0.041229154	Assumed flat post this year as no further data available
2039/40	0.041229154	Assumed flat post this year as no further data available
2040/41	0.041229154	Assumed flat post this year as no further data available
2041/42	0.041229154	Assumed flat post this year as no further data available
2042/43	0.041229154	Assumed flat post this year as no further data available
2043/44	0.041229154	Assumed flat post this year as no further data available
2044/45	0.041229154	Assumed flat post this year as no further data available
2045/46	0.041229154	Assumed flat post this year as no further data available

*Emission projections for grid electricity, accounting for the decarbonisation of the grid lowering carbon Conversion Factors

APPENDIX 2
ENERGY, WATER & RENEWABLES

Energy Consumption from Heat and Power

The type of fuel used is also important as each type emits different amounts of carbon. The table below shows that in terms of energy consumption from heat and power, over half of the energy used in the Council in 2018/19 was from natural gas supplies and over 40% from electricity, indicating that heating and lighting of Council owned properties are a major contributor to emissions and therefore significant reductions from these areas will be required to meet 2045 targets.

Fuel used	kWh	% share
Natural gas	25,196,802	53.3%
Grid electricity	20,032,901	42.3%
Gas oil	1,735,431	3.7%
Biomass	257,530	0.5%
Renewable electricity	89,843	0.2%
Total	47,312,507	100%

Annual Emissions reduction pathway to net zero

In order to achieve net zero by 2045, the Council will be required to:

- **Achieve a 3.5% annual reduction (versus 2012/13 baseline) every year up until 2030/31; and**
- **Achieve a 2.6% annual reduction (versus 2012/13 baseline) every year after 2030/31 (out to 2045/46).**

Context

Energy consumption (via heat, power and water), including their subsequent emissions, are dependant on many factors (both social and economic). Some of these factors can be addressed in the short term, while others need to be considered over long periods of time which involves strong and sustained data records from these energy sources. In recent years significant progress has been made in better understanding, monitoring and recording these energy sources in order to reduce consumption and improve practice.

West Dunbartonshire's total energy consumption from heat and power in 2012/13 was estimated as 67,469,118 kWh and had reduced almost 30% to 47,312,507 (largely due to a combination of: energy efficiency projects; estate changes/building closures; and the decarbonising of the electric grid, etc.) kWh by 2018/19. Currently, emissions from these sources make up 43% of the overall carbon footprint, so it is important that we continue to make efforts tor reduce our emissions from energy and water to have a greater chance of getting to net zero.

WDC energy consumption 2018/19 (by fuel)

RENEWABLE ENERGY	0.2%
BOIMASS	0.5%
GAS OIL	3.7%
GRID ELECTRICITY	42.3%
NATURAL GAS	53.3%
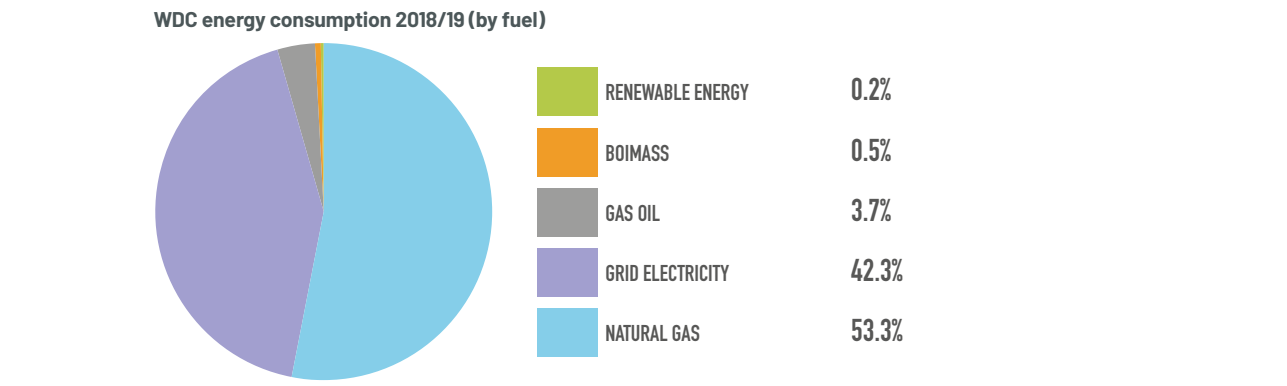
This amount of energy consumption is equivalent to almost 3500 homes being powered for the year or over 7000 return trips from Scotland to New York.

Additionally, water use from Council owned buildings and services has seen roughly a 3% reduction in consumption since 2012/13. However, emissions from water makes up less than 1% of overall emissions and so the ability for this fuel source to impact heavily towards a net zero target is low but there are opportunities to make significant cost savings and improve behaviours in advance of water.

Water use	Consumption (m³)	Emissions (tCO$_2$e)
2012/13	364,235	190
2018/19	353,998	185

[1]Post 2030/31 annual reduction is reduced as the Scottish Government aims to have achieved close to decarbonisation of the electricity grid by 2030 and therefore savings will be harder to come by after this point (projects to reduce electricity emissions will no longer be effective in terms of carbon mitigation).

Energy Hierarchy

The Council will follow the principles of the energy hierarchy (see Figure 3) as developed by the Scottish Government. This approach first looks to reduce the amount of energy consumed before employing more advanced techniques and technologies, such as renewables, to reduce energy. The most cost-effective way to reduce emissions is to reduce the amount of energy used in the first place. This is why reducing consumption is such an important pillar of this Strategy. It can be usually be done cheaply and in the short term (often by staff empowerment change methods).

ENERGY REDUCTION
Energy conservation – prevent unnecessary use of energy

ENERGY EFFICIENCY
Energy needed is used as efficiently as possible

RENEWABLES
Generating energy using sustainable, renewable technology

LOW EMISSION
Low impact methods of utilising fossil fuels eg. carbon capture and storage

CONVENTIONAL
Generating energy using conventional, high impact fossil fuels

Figure 3 Energy hierarchy – the Council's approach to energy efficiency in buildings

District Heating Networks (DHN) & Local Heat and Energy Efficiency Strategies (LHEES)

The concept of Local Heat and Energy Efficiency Strategies (LHEES) was introduced in 2016 and is being piloted as part of the Energy Efficient Scotland programme. LHEES aim to establish area-based plans and priorities for improving the energy efficiency of buildings, and decarbonising heat.

One way to do this is via District Heating Networks (DHN). DHNs aim to distribute large-scale sources of heat over a large geographic area and connect multiple buildings in a heat network. These networks are a particularly attractive option in dense urban areas, and have been cited as a way of tackling fuel poverty while also reducing building and housing management costs.

Our DHN at Queens Quay in Clydebank is operated through an energy centre. Within the energy centre, heat pumps extract water from the River Clyde. This water is transported via district heating pipes to homes and businesses to heat them. Additional pipes mean public buildings such as Clydebank College and Leisure Centre and other businesses into the town centre can be supplied.

The energy centre also accommodates gas boilers, pressurisation units and distribution pumps together with a building control and management system to operate and monitor the system.

Each property connected to the district heating network will have a Hydraulic Interface Unit (HIU) which is similar in size to, and looks like, the traditional boiler it replaces. This device allows tenants and landlords to switch on heat and hot water as and when it is required. It also allows them to monitor the amount of energy consumed to ensure they are billed accurately for it.

Building upon this success, the Council are now developing a pilot LHEES and report which will set the Strategy and a framework for reducing energy demand and decarbonising the heat supply in the Clydebank area, across the timeframe of the Energy Efficient Scotland programme.

It will seek to identify local solutions to reduce emissions from buildings and tackle fuel poverty across all building types within the town of Clydebank, from the boundary with Glasgow City Council on the River Clyde, northwards using Great Western Road as a boundary and to a westerly limit of Mountblow Road.

It plans to identify opportunities for additional connections to the Queens Quay DHN. It will also explore the feasibility and costs of other energy efficiency measures across this area and build on existing programmes, explore alternative heating solutions and opportunities with a focus on solutions and technologies around energy efficiency and heat decarbonisation.

This LHEES pilot is the first step in the Council developing and adopting a wider 20 year Strategy that will strive towards achieving net zero emissions from buildings by 2045, and removing poor energy efficiency as a driver for fuel poverty.

Renewables

Utilising renewable energy technologies can rapidly reduce emissions (and costs), particularly within heating and power. The Council currently has the capacity to produce renewable electricity via solar panels and renewable heat via biomass boilers. With increasing decarbonisation of the electricity grid, Council emissions from gas heating will rise proportionately over the next decade, necessitating a further transition to renewable heat sources over this period.

Throughout the year, 2018/19, the Council generated the following amount of renewable energy;

Technology	Renewable energy type	Total consumed by the organisation (kWh)
Solar PV	Electricity	89,843
Biomass	Heat	231,770

Therefore, last year, less than 0.5% of our locally generated electricity and around 1% of our heat comes from renewable sources. So the potential to grow is considerable.