

Be the
Future

Climate Change Strategy



**Clackmannanshire
Council**

www.clacks.gov.uk

Comhairle Siorrachd
Chlach Mhanann

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Foreword

The impacts of climate change are becoming increasingly clear with Scotland's ten hottest years having all occurred since 1997 despite record keeping beginning in Victorian times. The urgency to act has been given even greater impetus by the fact that Scotland's highest ever temperature of 35.1°C registered in July 2022.

As a Council with a large estuary and numerous rivers running through it, climate change is likely to become an increasingly significant issue for Clackmannanshire in the near future with increased flash floods, heatwaves and stronger storms all becoming more likely.

These disconcerting trends have galvanised us into being even more ambitious in our actions to help to address climate change and led to us bringing the Council's net zero target forward to 2040 at the latest from 2045.

Setting ambitious net zero targets and the framework to achieving them in this Strategy will allow us to harness the social, financial and economic benefits that the transition to net zero offers such as improved air quality, reduced costs for residents and businesses through greater energy efficiency and waste reduction by moving towards a circular economic model.

With the recent volatility in fossil fuel prices and the cost of living crisis putting increasing financial pressures on residents and businesses alike, we as a Council are determined to create a Climate Change Strategy that will be shaped by meaningful engagement with young people, businesses and residents in order to empower communities, respond to challenges that they face and deliver a just transition to net zero.

Since passing the new net zero targets in August 2022, the Council has engaged 86 residents through Climate Change Forums based in Alva, Menstrie, Dollar, Alloa and at Lornshill Academy. A Climate Emergency Action Plan with specific emission reduction opportunities has been composed based upon input from these Climate Change Forums.

The Climate Emergency Action Plan underscores the huge potential for the Council to lead by example by delivering and facilitating emissions reductions across Clackmannanshire such as through aligning all of our major decisions, budgets and approaches to planning decisions with a shift to net zero while working with partners to support businesses and communities in reducing their emissions.

While this Strategy sets out means of building on the Council's achievements in reducing our contributions to climate change and improving our resilience to the effects of the climate emergency, we recognise that continuing the transition from a fossil fuel-based economy to a carbon neutral and resilient future will require new ways of working, societal shifts as well as a technological transition.

With the seminal sixth assessment report by the Intergovernmental Panel on Climate Change estimating that 3.3 to 3.6 billion people live in environments that are highly vulnerable to the effects of climate change, it is increasingly clear that action to address the climate emergency constitutes a defining humanitarian and economic imperative.

We owe it to future generations to rise to the occasion!



**Councillor Fiona Law,
Spokesperson for Environment
and Net Zero**

Executive Summary

This Strategy sets out a framework for achieving net zero greenhouse gas emissions by 2040 at the latest for the Council’s own operations and by 2045 at the latest for the Clackmannanshire area.

It includes means of aligning all strategic decisions, budgets and approaches to planning decisions with a shift to net zero greenhouse gas emissions in addition identifying emission reduction opportunities to initiate the development of a thematically based Climate Emergency Action Plan.

The six themes are as follows:



Energy, Heat & Buildings



Low-carbon Transport



Waste, Recycling & the Circular Economy



Biodiversity, Carbon Storage & Agriculture



Adaptation, Planning & Organisational Capacity



Economic Development & Sustainable Procurement

The document has been shaped by input from community groups, young people, residents and businesses who attended a series of monthly Climate Change Forums around in Clackmannanshire from September 2022 to March 2023.

Since it is expected that opportunities for decarbonisation will evolve based upon input from consultations in the short-term and from technological advances, new legislation and further engagement in the medium to long-term, it constitutes a starting point rather than an exhaustive list of opportunities.

This Strategy recognises the extensive activity that the Council has previously undertaken to reduce emissions and will aim to add value to this work by augmenting coordination, facilitating robust data gathering, catalysing green decision making across all council service areas and positioning Clackmannanshire to maximise the inward investment and job-creation potential of the transition to net zero.

The Climate Change Strategy underscores the Council’s commitment to a just transition by recognise that even though the impacts of climate change will affect everyone, the most severe impacts are likely to be felt by people who are at greater risks of poverty.

Building on the community engagement through the Climate Change Forums will therefore be pertinent to continuing to develop collaborative solutions with those most exposed to the effects of climate change.

1. Why does climate change matter?

Climate change is caused by heat-trapping gasses, known as greenhouse gases, being released into the atmosphere from the burning of fossil fuels (such as coal, oil and gas) for energy generation, industry and transport.

These greenhouse gas emissions from human activity have led to significant heating in Earth's climate with 2020 and 2016 registering as the joint hottest years globally since modern record keeping began in [1880](#).

This fits into a wider trend with **nineteen of the twenty hottest years on record registering since the year 2000 globally** while **Scotland's top ten hottest years have all occurred since 1997** with records beginning in [1884](#).

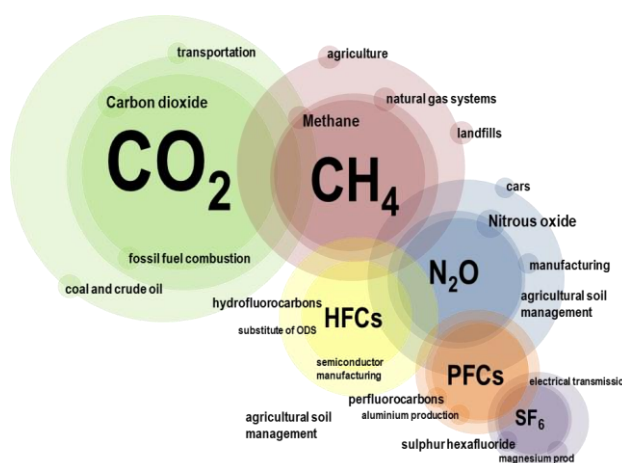


Figure 1 Greenhouse gases (GHG) and their sources

The heatwave of in July 2022 saw a record temperature of 35.1°C in Scotland, 2.2°C higher than the previous record. Temperatures in Clackmannanshire in this period included Menstrie reaching 32°C and Alloa [reaching](#) 31°C.

Despite the fact that there is growing international action to mitigate climate change, including initiatives aiming to limit warming to 1.5°C, even a global average temperature increase of 1.5°C would result in risks to health, livelihoods, water supply, food security, human security and economic growth [globally](#).

A rise of 2°C in global average temperatures would be even more catastrophic.

As highlighted by the image, we are already approaching a global average temperature increase of 1.5°C so it is crucial that adaptation to a continuously changing and increasingly hostile climate constitutes a cornerstone of this Strategy and the Climate Emergency Action Plan.

The Intergovernmental Panel on Climate Change (IPCC)'s Sixth Assessment Report provides the most comprehensive analyses of the latest climate science, impacts and vulnerabilities related to climate change.

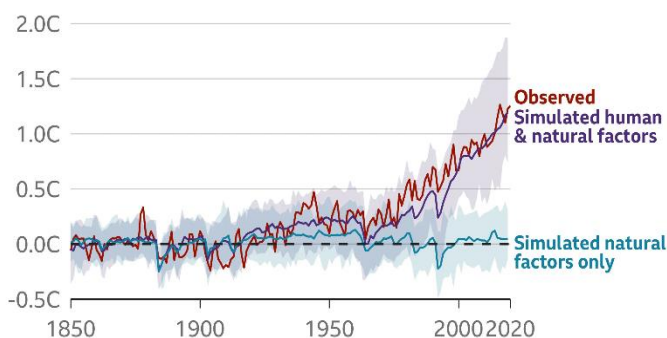


Figure 2 Change in average global temperature relative to 1850 -1900, showing observed temperatures and computer simulations (IPCC, 2021)

It delivers the starkest warning yet on the risks of climate change and highlights that climate change is already affecting many weather and climate extremes in every region across the globe while providing [evidence](#) that observed changes in extremes such as heatwaves, heavy precipitation, droughts and tropical cyclones has strengthened.

The Sixth Assessment Report also notes that human-induced climate change is causing dangerous and widespread disruption in nature and affecting the [lives](#) of billions of people around the world, despite efforts to reduce the risks. Moreover, people and ecosystems least able to cope are being hardest hit.⁷

Climate change is also the single greatest threat to [Scotland's habitats](#). Since many of Scotland's species are highly adapted to specific climatic conditions, the effects of climate change are expected to be drastic.

As a result of these [grave impacts](#) that are projected worldwide, the IPCC argue that immediate, rapid and large-scale reductions in greenhouse gas emissions are needed, alongside urgent actions to mitigate and adapt to climate change.

In Scotland, climate change has led to a warmer climate, changes in rainfall patterns and higher sea-levels. According to [Adaptation Scotland](#), the weather extremes in Scotland have also changed with our hottest days getting hotter and our wettest days getting wetter. Furthermore, climate change is projected to result in higher temperatures throughout the year, more unpredictable and extreme weather conditions and increased flooding, storms and heatwaves in Scotland.

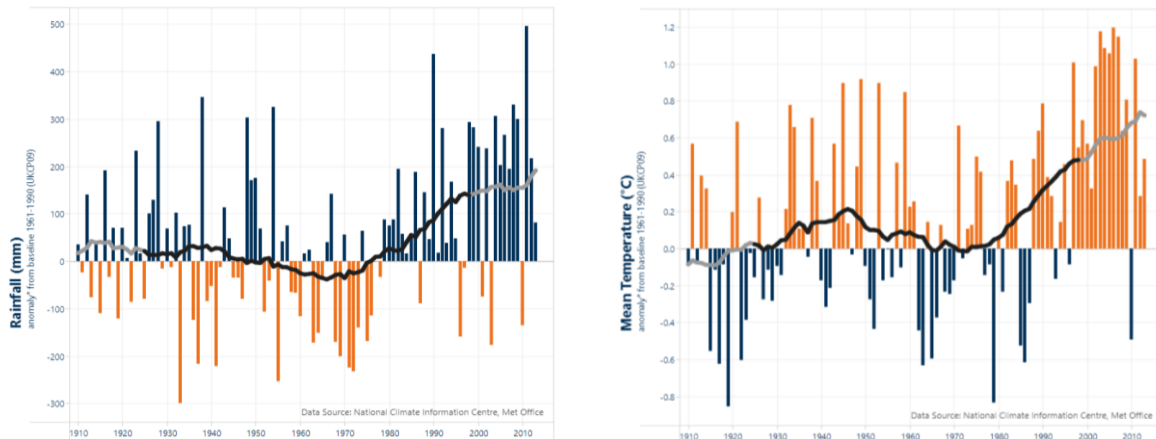


Figure 3 Climate trends for Scotland – Annual Rainfall (mm) and Annual mean temperature (Adaptation Scotland, 2022)

Between 2015 and 2019, 97% of [Scottish lochs and reservoirs](#) that are monitored have increased in temperature. Most warmed by between 0.25°C and 1.0°C per year over this period, although 9% increased by more including some by up to 1.3°C per year.

These changes increase the risk of the development of harmful algal blooms, which can restrict their use for water supply, recreation and as a safe habitat for wildlife. An extension of algal bloom has been noted in Clackmannanshire including in Gartmorn Dam.

The [study](#) by Scotland’s Centre of Expertise for Waters reports that this climate-related impact is initially expected to lead to warming in waters in the south and east of Scotland although it will reach all parts of Scotland by 2040.

Given that Clackmannanshire Council has a large estuary, numerous rivers running through it and a numerous flood risk area; climate change is likely to become an increasingly significant issue.



Figure 4 Alloa in December 2021 following storm Arwen when hundreds of trees were blown down across Clackmannanshire

The Costs of Inaction

Since it is well documented that the [economic benefits](#) of acting on Climate Change far outweigh the costs, there are significant incentives to reduce emissions across all parts of society. Particularly since the worsening of extreme weather events around the world and the consequent [economic losses](#) are becoming increasingly pronounced as emissions increase.

Moreover, BloombergNEF [report](#) record investment in low-carbon energy transition of \$1.1 trillion in 2022, significantly higher than the previous records which were set in 2021, 2020 and 2019 respectively.

The movement to divest from fossil fuels is also accelerating with over 150 pension funds, many leading universities, the Republic of Ireland's Government, The Welsh Assembly, New York City's Government and private sector organisations all making public statements to divest. The approximate value of institutions that have [divested](#) is \$40.51 trillion.

Accordingly, Clackmannanshire has [called](#) for Falkirk Local Government Pension Scheme to divest from fossil fuels due to the growing financial and ecological risks from continued fossil fuel investment.

Climate change adaptation and mitigation measures also have the potential to deliver significant benefits to health and wellbeing. For example, the damage that air pollution can cause to people's health is widely reported. The Royal College of Physicians and the Royal College of Paediatrics and Child Health [report](#) that exposure to outdoor air pollution is attributable to 40,000 premature deaths per year in the UK in addition to being linked to strokes and heart disease, cancer, asthma, obesity, diabetes, COPD and dementia

The [British Heart Foundation](#) estimate that particulate matter air pollution could be attributed to 160,000 heart and circulatory disease deaths over the next ten years in the UK. This is particularly significant within the context of Covid-19, where long-term air pollution was linked to greater risk of [hospitalisation](#).

A further factor of relevance to health and well-being is the fact that some of the most emission-intensive elements of society such as large-scale animal agriculture and international flights, are also those that make the emergence of [future pandemics](#) more probable. These practices therefore constitute multi-faceted threats to long-term sustainability.



2. Climate Change Legislation

International

The Paris Agreement 2015 set a target to keep the global temperature rise below **2°C** above pre-industrial levels and to attempt to limit the overall increase to **1.5°C** and was signed into law by the UK Government.

The regular Conference of the Parties (COP) conferences that followed, including Glasgow in 2021, has led to approximately 200 countries agreeing to take climate change action while regularly enhancing the ambitiousness of their emissions reduction targets in future COP events.

Carbon budgets produced by the Intergovernmental Panel on Climate Change (IPCC), United Nations and the International Energy Agency [demonstrate](#) that preventing **2°C** of warming relies on not burning the vast majority of all proven fossil fuels.

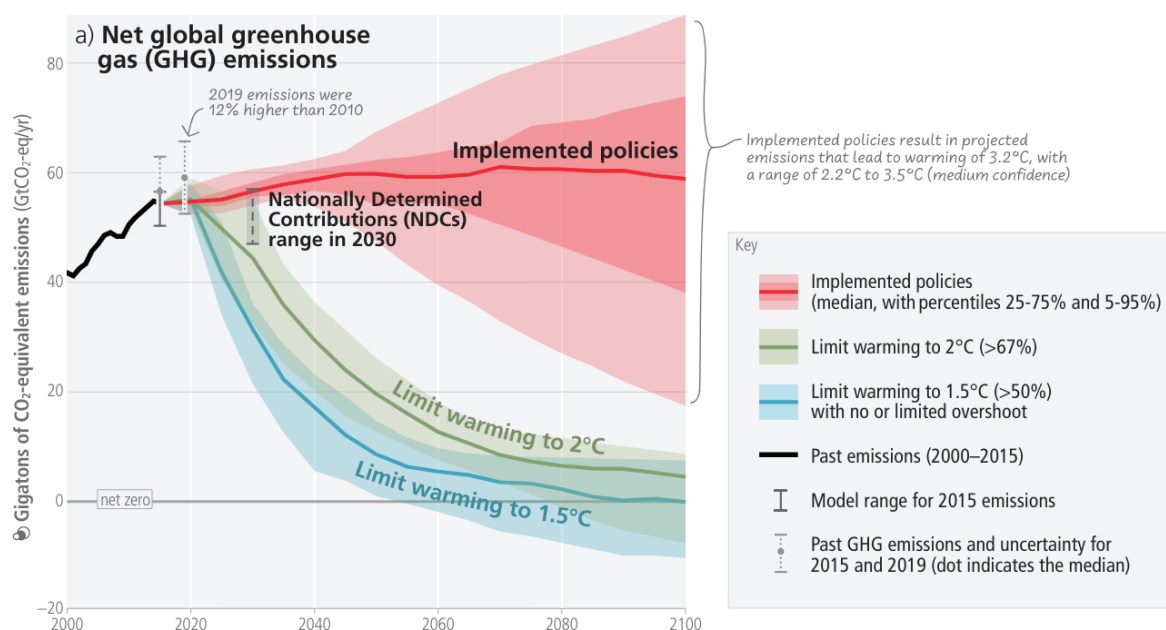


Figure 5 Global emissions pathways consistent with implemented policies and mitigation strategies (IPCC, 2023)

In addition to this emission reduction framework, the United Nation's Sustainable Development Agenda 2030 includes Goal 13: *Climate Action* which sets a requirement for nations to 'Take urgent action to combat climate change and its impacts' by 2030.

United Kingdom

The UK Government has set a legally binding target to reach net zero greenhouse gas emissions by 2050, under the 2019 amendment of the 2008 Climate Change Act. It also announced an interim target of a 78% reduction by 2035 compared to 1990 levels in 2021.

the UK Government's [Net Zero Review](#), which was published in September 2022, has noted that "Net zero is the growth opportunity of the 21st century" and that "net zero is creating a new era of opportunity, but government, industry, and individuals need to act to make the most of the opportunities, reduce costs, and ensure we deliver successfully."

Scotland

The Scottish Government has set a legally binding targets to reach net zero greenhouse gas emissions by 2045, under the Scottish Government’s Climate Change (Emissions Reduction Targets) (Scotland) Act 2019. It also set interim targets for a a 90% emissions reduction by 2040 relative to 1990 levels of carbon dioxide, methane and nitrous oxide and 1995 levels of some other less common greenhouse gases.

The act places duties on all public bodies to contribute to emission reduction targets, deliver programmes to increase resilience against climate change and requires Councils to submit a mandatory climate change report to Scottish Government each year.

The Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Amendment Order 2020 requires that, from November 2022, Public Bodies’ Climate Change Duty (PBCCD) reports, including Clackmannanshire Council’s, to include:

- a target date for achieving zero direct emissions of greenhouse gases;
- targets for reducing indirect emissions of greenhouse gases;
- an outline of how the body will align its spending plans and use of resources to contribute to reducing emissions and delivering its emissions reduction targets;
- an outline of how the body will publish its progress on delivering reduction targets; and
- where applicable, what contribution the body has made to deliver Scotland’s Climate Change Adaptation Programme.

Key expectations within the legislation include:

Governance	Finance	Reporting	Accountability
Institutional boards and senior executive teams must ensure that climate change systemically informs strategic investment planning and decision-making processes and is embedded into the management of risks and opportunities across the organisation.	Climate change must be integrated into financial planning and reporting.	Public bodies must consistently, accurately and transparently report all Scope 1 & 2 emissions and all relevant and significant Scope 3 emissions.	It is recommended that climate change targets should be a board level Key Performance Indicator and if targets are missed, a corrective action plan is required.

Additional climate change targets that apply to public bodies include the following:

- Zero direct emissions by 2045 at the latest with interim targets to monitor progress.
- Zero direct emissions from all estate buildings by 2038.
- Net zero targets for indirect emissions that clearly state what is included. If an institution chooses to exclude a source of indirect emissions from its target it must clearly explain the reasoning.

Following the UK’s decision to leave the EU, the Scottish Parliament passed the European Union (Continuity) (Scotland) Act 2021 which provides Ministers with powers to help meet the Scottish Government’s commitment that Scottish laws “*keep pace*” with future developments in EU law where appropriate.

The Scottish Government also approved the Circular Economy Bill to fulfil on ‘Delivering Scotland’s Circular Economy – a *route map to 2025 and beyond*’ which sets out several levers that the Scottish Government intends to use to drive the transition to a fully circular economy thus reducing waste.

The Scottish Government’s Programme for Government also explores establishing a Future Generations Commission to take into account the interests of future generations in decisions that are made today.

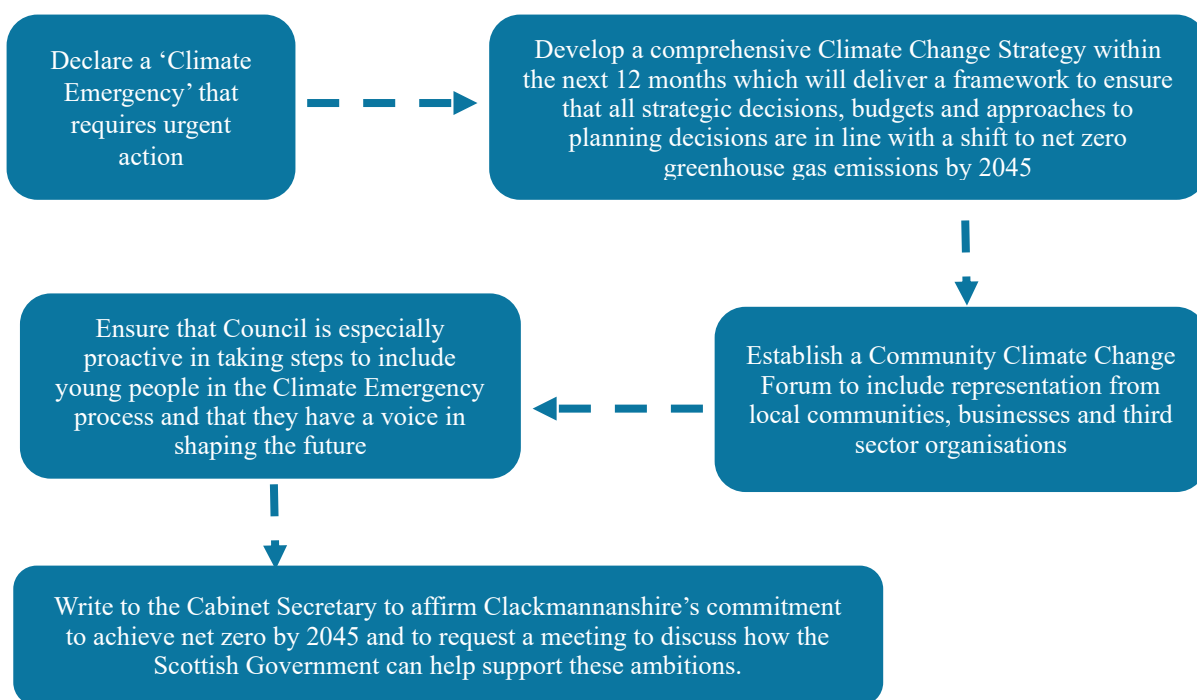
Clackmannanshire Council

The Clackmannanshire Sustainability and Climate Change Strategy was adopted in September 2010 and reviewed in 2016. However, due to the pace of change on the issue, this interim Climate Change Strategy has significantly revised the content and action points from the previous strategy.

On Thursday 19th August 2021, Clackmannanshire Council unanimously passed a motion that:

- 1 Agrees that climate change is one of the most serious challenges facing communities here in Clackmannanshire and across the world;
- 2 Understands that meaningful action at international, national and local level is required in order to safeguard our planet for future generations;
- 3 Recognises that as we emerge from the Covid-19 pandemic, we have a chance to rebuild in a way that delivers a greener, fairer and more equal society;
- 4 Acknowledges the challenges faced by small councils such as Clackmannanshire in taking meaningful, sustainable action;
- 5 Notes the work already underway to deliver this through the City Deal and our ambitious Be the Future Programme

In recognition of the role that the Council has to play, the Council further agreed to:



In line with the ambitions of this motion, this strategy will also ensure that the need to address climate change is embedded in future Council plans and strategies. Clackmannanshire Council's main Strategic documents - *Corporate Plan 2018-22*, *Be the Future*, and our *Local Development Plan* - set out our aspirations to achieve sustainability and aims to make the area more resilient to the impacts of climate change. Incorporating net zero targets and stronger means of restricting high-carbon spending and planning into these reports would be a major opportunity to limit the development of initiatives that are incompatible with net zero targets.

Or as the Scottish Audit Office notes, achieving net zero targets will require policies and strategies to be reviewed to identify conflicts or incoherence with climate change ambitions and to be amended as required.

3. The Role of Clackmannanshire Council

While Clackmannanshire Council is a small Council both in terms of population and land coverage, it has a significant role to play in climate change mitigation and adaptation.

For example, the Council is responsible for services including the provision of schools and education, the collection of waste and recycling, planning and building standards, local transport planning, infrastructure development, local economic development, the provision of libraries, street lighting, and the collection of Council taxes.

Additionally, in delivering these functions, the Council owns and operates a large built estate and is an employer of over 2,000 staff, thereby giving it significant scope to support direct emissions reduction through its own estate and workforce. The scale of this influence is highlighted by the Climate Change Committee below.

Areas that contribute most to Clackmannanshire Council's own carbon footprint include energy consumption from buildings and operations, waste (both operational and domestic household waste), use of council & staff vehicles and the procurement of goods and services. Conversely, afforestation and land management can increase the carbon storage potential of nature and therefore reduce net emissions.

[Rural Councils](#) such as Clackmannanshire are particularly well placed to contribute to net zero targets through land for onshore renewable energy, land for carbon sequestration and reducing emissions from agriculture.

Over one hundred UK Councils have signed up to net zero emissions for their own activities by 2030 and net zero area-wide emissions by 2045. Signatories of the 2030 council targets include Glasgow City, North Lanarkshire, Renfrewshire, Moray, Edinburgh City, Falkirk and East Ayrshire Council.

While 2040 has been identified as achievable for Clackmannanshire Council from the initial analysis of emissions data and potential routes to net zero for the Council's own operations, it is crucial to continue to develop more robust data of the local authority's current carbon footprint and potential emission reduction trajectories in order to establish whether earlier dates are possible. In line with this, the framework set out in Section 6 will allow iterative identification of external emission reduction opportunities for Clackmannanshire in addition to setting out means of developing a more coordinated approach to adaptation.

Given the on-going cost of living crisis, with significant increases in the cost of energy and petrol affecting residents and businesses in Clackmannanshire, harnessing the poverty-alleviation potential of decarbonisation is increasingly pertinent, or as the Committee on Climate Change [notes](#), net zero policies are amongst the most effective to deal with the soaring cost of living.

Furthermore, a Place and Wellbeing Outcomes Assessment was held in partnership with the Improvement Service to consider means of maximising the positive health and well-being impacts of the framework and actions in this strategy.

Businesses' and residents' individual emissions are not counted as part of the PBCCD reporting figures as they do not constitute part of Clackmannanshire Council's own operations, however, the Council has significant scope to facilitate emissions reductions in these areas while delivering a wide-range of benefits.

Since the UK and Scottish Government have both set targets to reach net zero, by 2050 and 2045 respectively, there are significant funding opportunities for projects that contribute towards these objectives. Accordingly, in the process of moving to net zero, Clackmannanshire will aim to create thousands of new jobs and investment opportunities in renewable energy, recycling and green projects.



Internal emissions

Clackmannanshire Council has completed annual reports for the Public Bodies Climate Change Duty (PBCCD) from the financial year of 2013/14 to 2022/23.

The next iteration will cover the financial year of 2023/24 and was submitted on 30 November 2024. While the overall emissions do not yet include some significant areas of the Council's carbon footprint such as waste, means of including these in future reports are set out in Section 6. Below there is a chart showing Clackmannanshire's emissions for the Council's own activities and their corresponding financial year.

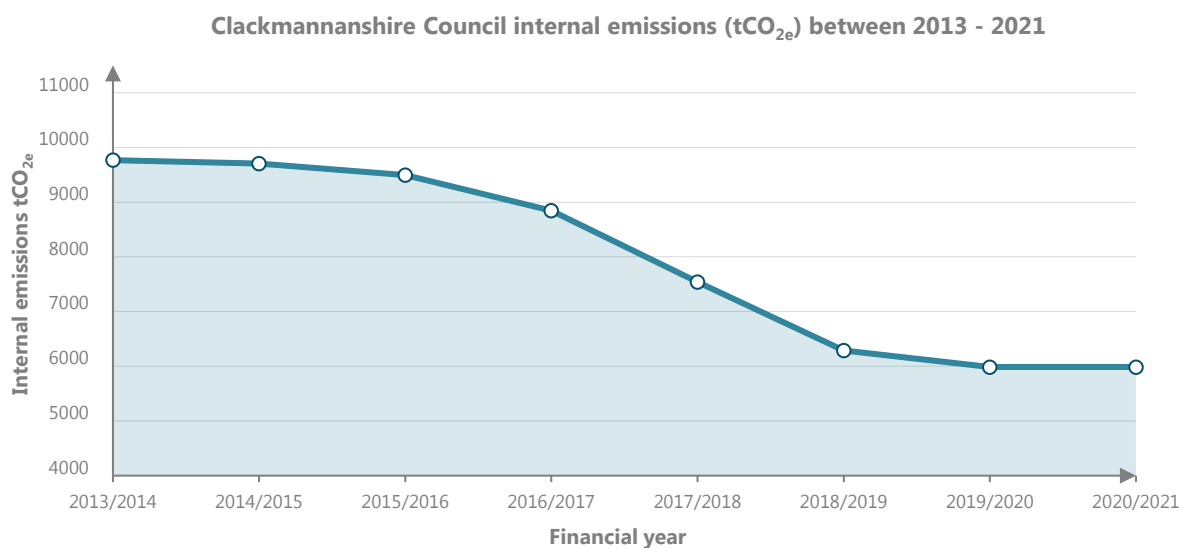


Figure 6 Clackmannanshire Council internal emissions (tCO_{2e}) between 2013 – 2021 (PBCCD Report)

It is important to note that while consistent emission reductions are a positive sign of progress, a large proportion of the decreases in emissions resulted from the Council selling buildings combined with the national decarbonisation of electricity.

Accordingly, greater efforts will need to be made in order to ensure a continuation of this trend since a reduction of emissions in key areas such as waste and transport will require behavioural changes in addition to the decarbonisation of business as usual.

Spending Alignment

The Scottish Audit Office notes that achieving the net zero targets will require policies and strategies to be reviewed to identify conflicts or incoherence with climate change ambitions and to be amended as required. Steps have already been taken to deliver on this, with the Council's General Services Revenue and Capital Budget 2022/23, published in March 2022, 32 setting out how the Clackmannanshire's Capital Programme aims to stimulate a green investment-led recovery to positively impact the area's economic performance as detailed in the Council's Local Outcome Improvement Plan (LOIP).

In line with this, central theme of the Council's General Services Revenue and Capital Budget 2022/23 investment report is an increased focus on green investment to support the Council's journey to Net Zero. While this report sets strong foundations for investment towards net zero, it also recognises the need for this Climate Change Strategy to include a framework to ensure that all strategic decisions, budgets and approaches to planning decisions are in line with a shift to net zero greenhouse gas emissions by 2045.

Specific alignment of the Council's Capital Programme and green investment can be found in the below table:

	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	Total 2027-32	Total 2032-37	Total 2037-42	20 years Total
Innovation Hub	200	1164							1364
Delivery City Deal (RPMO)	100	100							200
Renewable Energy Projects	30								30
Active Travel Route Railway Station		560							560
Flood Protection	57	235	86	86	86	430	430	430	1840
Tillicoultry Flood Protection		150	250	300	2500	2800			6000
Building energy management system	32	8							40
Cycle Routes	222	100	100	55					477
Active Travel Route		2000							2000
Street Lighting Replacement	258	258	258	258	259	1297	1303	1305	5196
Vehicle Replacement	563	800	1000	1000	1000	5000	5000	5000	19363
Total	1462	5375	1694	1699	3845	9527	6733	6735	37070

Figure 7 Green investment through Clackmannanshire Council's Capital Programme (in £'000)

External Emissions

Clackmannanshire's external emissions by sector are summarised in the table below. The data illustrates how industry emissions are by far the largest contributor, accounting for 37.1% of emission in Clackmannanshire. This is followed by commercial gas and electricity at 23.8%, and then Transport at 14.08% in 2021. The Department for Business, Energy & Industrial Strategy's emission [figures](#) also indicate that total public sector emissions are a small proportion of the area-wide total at 2.01%.

Calendar Year	Industry Total	Commercial Gas and Electricity Total	Public Sector Total	Domestic Total	Transport Total	Land use and forestry (Net Emissions)	Agriculture Total	Waste Management Total	Grand Total
2005	210.7	163.3	18.0	137.2	79.8	22.3	29.8	7.4	668.5
2006	208.6	168.7	18.0	136.4	80.4	21.0	27.9	7.2	668.1
2007	225.2	218.6	21.3	134.4	81.9	20.5	29.9	7.1	738.8
2008	224.8	227.0	21.3	133.5	80.4	20.3	28.7	5.9	741.9
2009	187.2	165.4	16.3	121.5	78.8	19.4	28.5	5.1	622.3
2010	223.9	226.2	20.6	129.2	77.5	19.4	29.9	5.6	732.2
2011	212.9	208.2	19.2	113.5	74.9	18.5	28.7	4.7	680.7
2012	218.7	173.6	15.1	121.5	72.8	18.3	25.6	4.3	649.8
2013	213.8	175.8	15.1	117.1	70.0	18.9	25.0	4.6	640.4
2014	198.2	142.4	12.5	98.7	70.6	18.5	24.3	4.8	569.9
2015	193.6	165.3	14.6	97.5	71.5	18.9	25.3	4.9	591.6
2016	199.5	168.4	13.4	88.5	72.7	20.2	25.8	4.7	593.1
2017	198.0	152.8	14.8	86.8	72.5	20.2	25.4	5.1	575.6
2018	210.9	158.3	13.5	84.2	71.4	20.6	24.6	5.1	588.5
2019	202.8	159.4	11.2	82.7	70.3	20.8	23.6	4.9	575.7
2020	216.3	112.7	12.9	78.0	56.3	22.8	22.5	4.9	526.3
2021	171.1	133.3	9.1	80.8	70.2	22.4	22.6	5.0	514.5
2022	188.3	120.8	10.2	68.1	71.5	22.1	21.7	4.9	507.5

Figure 8 Estimated territorial greenhouse gas emissions by sector in Clackmannanshire 2005-2022 (kt CO₂e)

While regional emission in Clackmannanshire have shown a downwards trajectory since 2005, a revision of the benchmark from 2018 onwards to include Agriculture Livestock, Agriculture Soils and Landfill emissions data led to an increase between 2017 and 2018.

As highlighted by the chart below, Clackmannanshire’s per capita emissions, at 9.8 tCO_{2e}, are higher than the Scottish average of 7.1 tCO_{2e}. Additionally, out of the 32 Scottish local authorities, Clackmannanshire has the 11th highest per capita emissions.

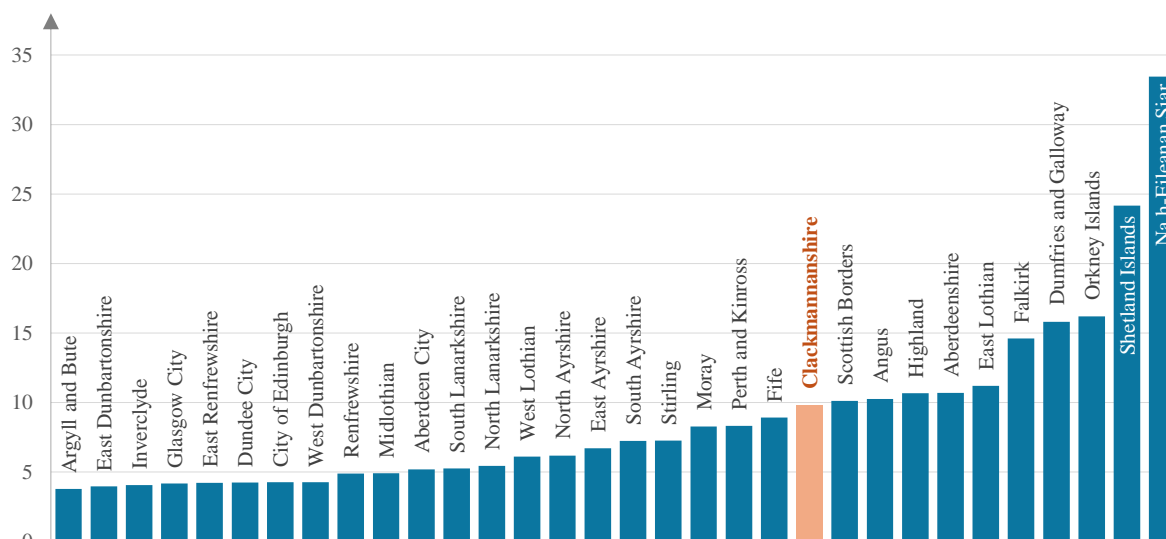


Figure 9 Estimated per capita territorial emissions in kt CO_{2e} ranking for 32 local authorities in Scotland (DEFRA, 2024)

The disproportionate significance of industry emission to Clackmannanshire is part of the reason for the above average per capita emissions with 3.6 tCO_{2e} for industry emissions in Clackmannanshire compared to an average of 1.12 tCO_{2e} across Scotland as a whole.

When large industrial sites are excluded from this total, which is relevant since the Department for Business, Energy & Industrial Strategy identifies large industry sites as out with the scope of influence of Local Authorities, Clackmannanshire’s industry emissions per capita decline significantly to 1 tCO_{2e} per capita, although this remains higher than the 0.57 tCO_{2e} average for this metric in Scotland.

When all areas that Local Authorities are considered to have limited scope to influence are discounted (large industrial sites, railways, motorways and land-use) per person emissions in 2022 decline to a total of 345.5 ktCO_{2e} or 6.7 tCO_{2e} per person.

	Commercial Gas & Electricity Total	Public Sector Total	Domestic Total	Industry Total	Transport Total	Agriculture Total
Clackmannanshire	120.8	10.2	68.1	51.3	71.4	23.7
Scotland	3067.8	1178.6	7367.2	3081.2	8132.4	7636.4

Figure 10 Highest emission source excluding large industrial sites, railways, motorways and land-use

The contributors to this total, as outlined in the table below, are commercial at 34.96%, Transport at 20.66%, Domestic Gas and Electricity at 19.71%, Industry Gas and Electricity at 14.84%, Agriculture at 6.86% and Public Sector emission at 2.95%.

The fact that both Domestic, Commercial and Industry emissions make up a combined 69.51% of emissions that the local authority has major scope to influence, underscores the significant of transitioning building emissions from gas, which is the heating sources for approximately 80% of UK buildings. It also emphasises the value that Clackmannanshire Council can add to net zero targets by working with employers and residents in the region to achieve a just transition to net zero.

While in-scope transport emissions are below average in Clackmannanshire at 1.37 tCO_{2e} per person compared to 1.49 tCO_{2e} on average in Scotland, they still makeup a significant proportion of overall emissions in the area.

4. Net Zero Delivery Framework

Net Zero emission targets for Clackmannanshire Council and the Clackmannanshire area can only be achieved by adopting a coordinated approach with local, regional and national delivery partners.

Accordingly, the Net Zero Framework comprises of the management structures required to deliver net zero targets in addition to an engagement process to gather critical feedback on environmental targets in Clackmannanshire from young people, businesses, delivery partners and residents. The Strategy will be reviewed in five years, unless there is a change in the Scottish Government sooner.

Two Place and Wellbeing Assessment workshops were held to pull together expertise and perspectives from attendees to consider and how the framework and actions in this strategy could affect the wellbeing of the people of Clackmannanshire.

Councils are facing funding challenges and financial support and / or a greater economy of scale will be required to deliver on key elements of net zero targets including heat pumps and large low-emission vehicles.

In line with this, the Scottish Government's Net Zero, Energy and Transport Committee has recognised the [crucial role](#) Councils have to play to meeting net zero targets and the Scottish government should provide councils with extra financial support in future budgets, as well as helping them access specialist knowledge.

In a [press release](#), the Convenor of the committee, Edward Mountain said: *"Over the course of almost a year of evidence-taking, it's clear that unless key barriers facing local government are dealt with, we will not reach net zero by 2045."*

Local authority body Cosla called the report a *"watershed moment"* for combatting climate change and noted that *"...Cosla has been open that local authorities can't do that effectively without the increased support of Scottish government."*

As UK Government and Scottish Government both having statutory net zero targets, developing the Climate Emergency Action Plan and emissions reduction framework at the Council constitutes a strong opportunity to secure additional funding.

Climate Emergency Board

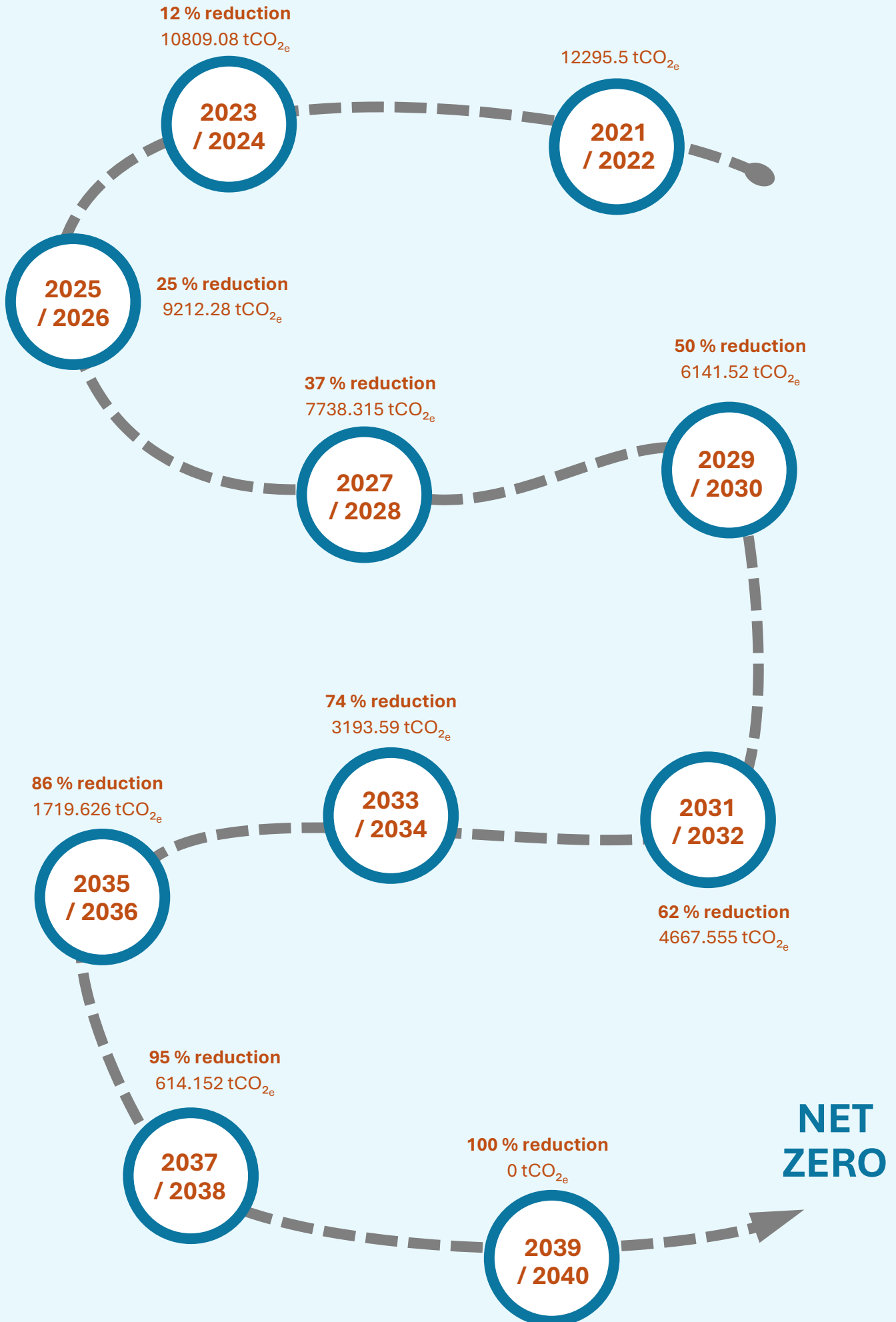
The Climate Emergency Board held its first meeting in September 2022 and comprises of elected members from each political party at Clackmannanshire Council and senior officers from key service areas across the Council.

It is responsible for developing and overseeing the Climate Emergency Action Plan with specific actions to progress net zero targets under the six themes set out in Section 7. The Climate Emergency Board is supported in its work by the Council's Energy and Sustainability team. It has also endorsed interim targets leading up to net zero for the Council's own operations by 2040.

The annual Public Bodies Climate Change Duty report provides means of quantifying the Council's emissions following the establishment of an updated baseline.

The fact that area-wide emissions are significantly larger than Clackmannanshire Council's own emissions renders engagement and collaboration with partners as crucial to maximising the Council's impact on decarbonisation. The emission reduction targets, and Climate Emergency Action Plan were both shared with the Climate Change Forums for input and feedback.

Roadmap to achieve Net Zero for Council's own operations by 2040



Climate Change Forums

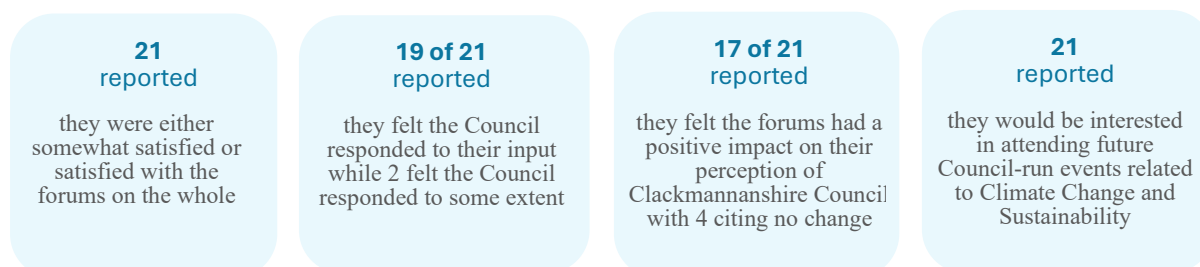
The establishment of a Climate Change Forum in each of the five ward areas of Clackmannanshire provided a space for dialogue between communities, businesses, young people, residents and the Council so that communities can be involved in shaping and delivering the Council's climate change targets.

Climate Change Forums met monthly in **Alva, Menstrie, Dollar, Alloa** and at **Lornhill** Academy to shape the Climate Emergency Action Plan and gather input on the Council's climate change work from Autumn 2022 to early 2023.

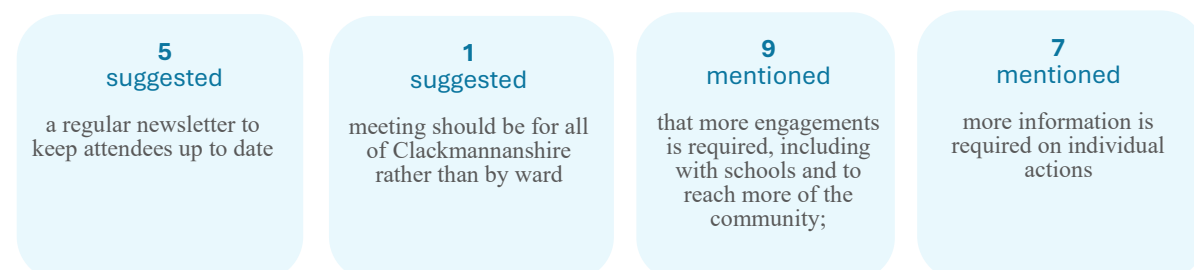


Figure 11 Photo from one of the Climate Change Forum meetings held in Dollar

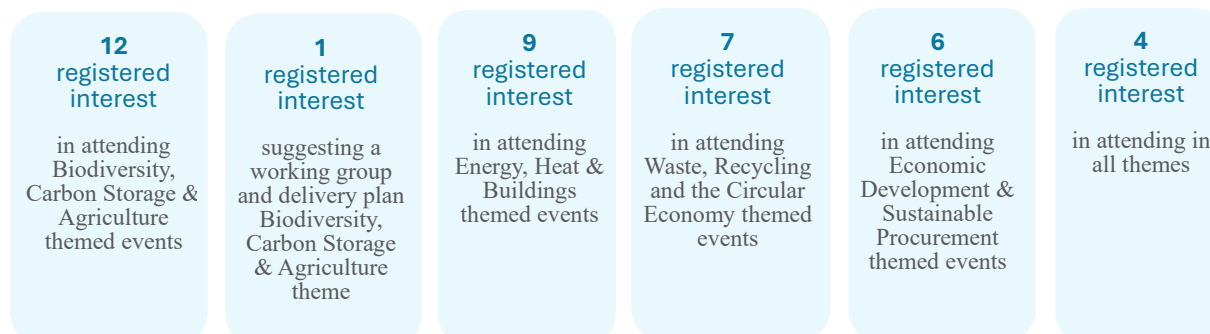
A survey was sent to attendees of the Climate Change Forums to request input on what future attendance could look like and gather feedback on the Climate Change Forums. It was completed by **21 attendees** and the feedback was very positive with the following highlights:



For the nature of future engagement, the following points were cited by the **21** respondents:



When promoted about events by specific themes, respondents cited the following:



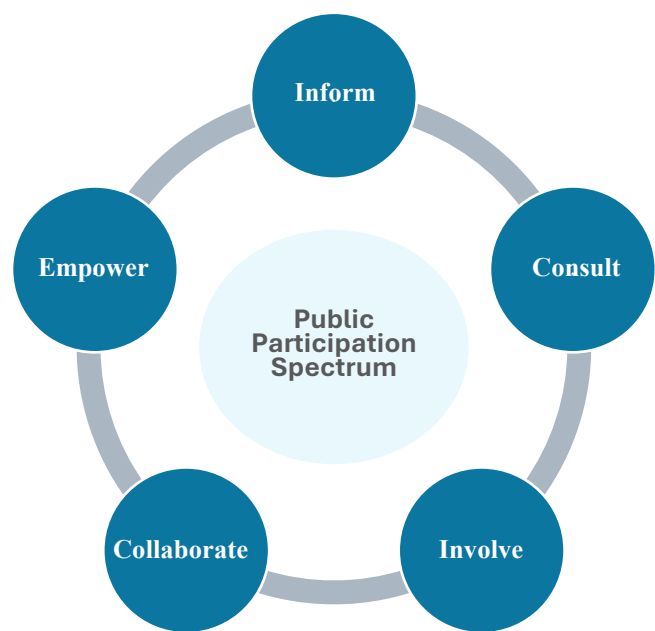
A total of **86 people** attended the five Climate Change Forums although there were some forum meetings where attendance could have been higher with six respondents suggesting that greater attendance would have beneficial.

Forum	Attendees (excluding repetition from previous forum)	Total Attendees for each specific forum (including repetition)	School-aged attendees at each forum
Menstrie	20	20	4
Alva	17	22	3
Lornshill	7	14	3
Alloa	22	30	1
Dollar	20	27	4
Total	86	NA	15

Behavioural and societal change are significant cornerstones of achieving net zero: the Climate Change Committee have [calculated](#) that over 60% of changes required to reach net zero will require some degree of societal or behavioural change while the recent IPCC [report](#) concluded that demand-side measures can reduce global GHG emissions by 40-70% by 2050.

Therefore, in setting an ambition to reduce emissions to net zero, the Council recognises the need for on-going public involvement in shaping collective future actions while public involvement is also essential for dialogue around lifestyle change on a range of key issues like diet and personal travel.

The Climate Change Forums' approach to engagement has been developed with reference to the five categories of participation in the [Public Participation Spectrum](#), while also drawing upon the [Guiding Principles](#) from the Scottish Government's Public Engagement Strategy for Climate Change.



Guiding Principles of Net Zero Engagement

- Our approach will be **inclusive** and accessible to all
- Our approach will **put people first** and place people at the heart of all that we do
- We will listen to and engage with experts to ensure an **evidence-based** approach
- Climate justice and a **just transition** will be embedded within our approach
- We will continue to encourage a **participative** society with two-way dialogue on climate change
- We will take a **positive** approach that outlines a vision for climate action that promotes the many benefits
- We will be **open and transparent** to make sure people can see and understand our actions

By adopting these principles, the Climate Change Forums began a process of emphasising placed-based action by empowering communities to develop localised solutions to climate change.

The development of the Forum has been based upon alignment with Community Planning Partnership, Scotland's International Environment Centre, the Improvement Service and other partners to ensure that a coordinated approach is adopted, and that good practice is shared.

There are also likely to be significant future opportunities for communities to take on direct action on Climate Change. For example, the Scottish Government's Programme for Government for 2021-22 sets out [ambitions](#) to explore participatory budgeting as part of community-led climate action and are particularly keen to involve schools and young people.

5. Strategic Themes

A thematic approach to the development of an updated Climate Change Strategy has been identified as means of maximising the financial, economic and social benefits of a transition to net zero.

The six themes are as follows:

Theme 1:	Energy, Heat & Buildings
Theme 2:	Low-carbon Transport
Theme 3:	Waste, Recycling & the Circular Economy
Theme 4:	Biodiversity, Carbon Storage & Agriculture
Theme 5:	Adaptation, Planning & Organisational Capacity
Theme 6:	Economic Development & Sustainable Procurement

An overview of relevant legislation and current decarbonisation projects from the Climate Emergency Action Plan have been outlined under each of the six themes.

Climate Emergency Action Plan

A Climate Emergency Plan will set out actions under each of the six themes in this strategy and create means of providing tangible action points and evidence of the impact of the Climate Change Forums' input.

These actions will ensure that cost-saving and resource efficiency initiatives are fully exploited while also rendering the Council investment-ready to deliver against climate targets and create high-value green jobs. Each action in the Climate Emergency Action plan will be assigned to a Team at the Council who will be responsible for implementing the action by its corresponding completion date and providing updates on progress. All actions in the Climate Emergency Action plan will be reviewed quarterly by the Climate Emergency Board.

Some preliminary opportunities have been identified in each theme in the section below to provide initial actions for the Climate Emergency Action Plan. The Council's Corporate Performance Management System, Pentana, will also be used to register risks and ensure strategic oversight.

Collectively, this structure sets out means of following the [Audit Office's](#) recognition of the essential need for climate change plans to have robust governance arrangements and the capability to resolve any conflict between partners, priorities, and policies.

Scottish Audit Office's Recommendation for Net Zero Governance

Good governance ensures accountability and transparency. It requires:

- monitoring, evaluating, reporting, and verifying plans with clear timeframes:
 - o public bodies should use monitoring frameworks and policy trackers, benchmarking, milestones
 - o information on costs of policies and proposals should all be monitored and reported
 - o reporting should be annual, accessible, and transparent; agreed standards for bodies to measure progress would allow consistency
- feedback mechanisms to review how things work as they are being implemented
- processes for how projects will be upscaled and alternatives proposed where projects are not delivering what is expected
- effective scrutiny, oversight, and challenge by elected members and non-executive board members.

Theme 1: ENERGY, HEAT AND BUILDINGS

Heating and powering our buildings are a significant contributor to CO₂e emissions. As highlighted in previously domestic gas and electricity accounted for 20.8% of greenhouse gas emissions in Clackmannanshire in 2020. Since there are almost 25,000 dwellings across Clackmannanshire, there are major opportunities to reduce emissions in this area while saving residents and businesses money through energy efficiency initiatives.

The Fuel Poverty (Targets, Definition and Strategy) (Scotland) Act received Royal Assent on 18 July 2019 and sets out the four main drivers of fuel poverty:

- energy prices;
- income;
- energy efficiency of the home;
- and how energy is used in the home.

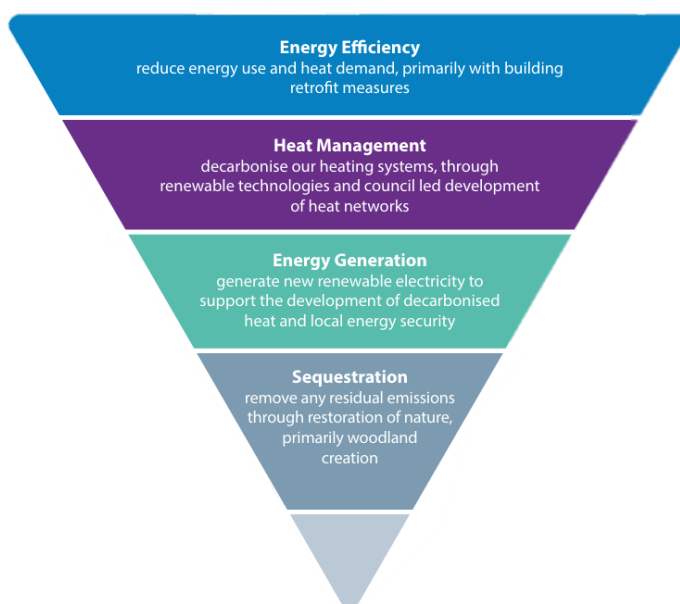


Figure 12 Energy hierarchy

Energy Generation, Demand and Heat Network

Generation of renewable energy brings major advantages for the local area and the council such as local energy supply resilience; income from projects to invest in other areas of decarbonisation and helping meet increased electrical demand. New council planning policy following the publication of Scottish Governments National Planning Framework 4 will be vital for enabling projects, along with communication with DNOs around electricity grid constraint.

Successfully decarbonising building heat supply will be crucial to reach net zero carbon. Decarbonising heat has the potential to reduce the carbon emissions of the built environment in the region by up to 95%. Many low carbon heating technologies are already operating in Scotland. The electrification of heat must be prioritised firstly in off gas grid areas. Coordination with Distribution Network Operators (DNOs) will be vital to ensure the electricity grid can handle this increase in demand. Any heating system transition must not result in increased fuel poverty.

Hydrogen may play a part in 2035-2045. This depends on a UK Government policy decision, due 2026, on whether heating buildings is a priority for hydrogen as a fuel. This will determine if a predominantly electric or hydrogen pathway will be followed. A key role is the development of heat networks. Scottish Government have set a specific target for heat supplied by heat networks (6TWh by 2030) and provided significant funding (£300million).

There are also challenges with upfront costs of certain low-carbon heating systems, such as heat pumps, which will require lower prices and a greater economy of scale to emulate the larger scale adoption of this technology in countries such as [Finland](#). Decoupling the wholesale price of gas from electricity would also significantly reduce the running cost of heat pumps and other low-carbon technology.

Energy Efficient and Demand Reduction

80% of all anticipated homes existing in the UK by 2050 have already been built so improving the energy efficiency of the homes we have is essential. There is a significant scope for Clackmannanshire Council to decarbonise buildings within its own estate while driving and supporting the decarbonisation of buildings across the Council area. This offers multiple benefits since increasing the energy efficiency of houses and, thereby reducing the exposure of households to high bills, is one of the most effective means of alleviating fuel poverty.

Scottish Government policies and laws on energy, heat and buildings include the following:

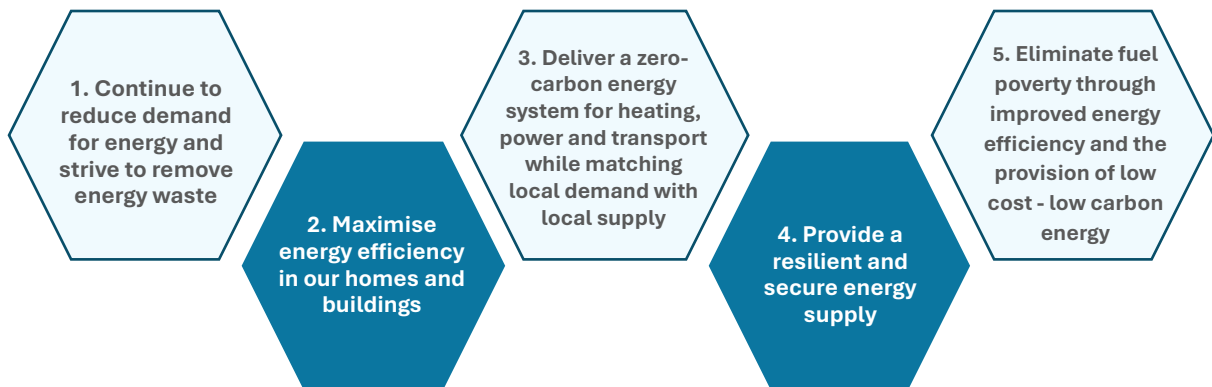
- all new homes consented from 2024 to use zero emission heating;
- minimum energy efficiency standards for the domestic private rented sector;
- all buildings to achieve a good level of energy efficiency;
- a new net zero carbon standard for new public buildings;
- all social housing meets EPC Band B, or is as energy efficient as practically possible by 2032, within the limits of cost, technology and necessary consent.

The Scottish Government's Heat in Buildings Strategy sets out how specific requirements to:

- meet its net zero and interim net zero targets. This will require:
- emissions from homes and buildings having to fall by 68% by 2030 against 2020 levels;
- the vast majority of the 170,000 off-gas homes currently using fossil fuels to switch to zero emission heat;
- an estimated 50,000 non-domestic buildings switching to zero emission alternatives;
- at least 1 million on-gas homes switching to zero emission alternatives by 2030;
- use of systems that have zero direct GHG emissions such as individual electric heat pumps / connection to heat network or electric systems such as storage heaters, and systems that have very low emissions such as hydrogen;
- significant progress toward all homes reaching EPC C by 2035;
- reducing emission intensity of gas by blending green gas to at least 20% volume.

Our priorities

The Council is going to advance more actions to fully decarbonise the energy use across Clackmannanshire and achieve just transition to a net-zero economy. The main actions for the next years will be focused on achieving 5 priorities:



Strategies underpinning this theme:

- Heat in Buildings Strategy
- Energy Efficient Scotland Route Map
- Fuel Poverty y (Targets, Definitions and Strategy) Scotland) Act
- The Heat Networks (Scotland) Act
- Scottish Energy Strategy
- Local Housing Strategy
- Regional Energy Masterplan
- Local Development Plan
- Wellbeing Economy Strategy
- Tenant Participation Strategy

What has Clackmannanshire Council done so far

The Council approved the [Regional Energy Masterplan](#) in November 2023, developed in partnership with Stirling Council as part of City Region Deal. The plan identifies renewable energy potential, explores methods of energy efficiency, and makes recommendations of potential initiatives across Clackmannanshire and Stirling for the next 10-15 years. The Plan includes the Local Heat and Energy Efficiency Strategy (LHEES) and Delivery Plan for both councils.

The Council's Home Energy Advice Team provides [support](#) to low-income houses in fuel poverty by providing energy efficiency improvements and money and benefits advice, consolidating energy debt and accessing funding to help to alleviate the rising cost of living. The team also holds surgeries and regular community-based events to engage residents.

Over the past 12 years the Council's Energy and Sustainability team have secured over £18.5m in Government funding to improve the energy efficiency in homes resulting in an estimated emissions reduction of over 13,000 tonnes of CO_{2e} in annual savings or over 334,000 tonnes of CO_{2e} in estimated lifetime savings.

There is also on-going work on council-managed buildings with the Council's Housing Service investing in this area for well over a decade to improve the energy efficiency of our schools, homes and libraries while lowering carbon emissions. The Housing Team has also undertaken significant work on housing quality standards, energy efficiency in social housing and the fuel poverty agenda. This includes on-going work to make council-managed buildings more energy efficient and less dependent on fossil fuels and substantial retrofitting and renewable energy investments being made in housing stock, our schools, libraries and public buildings.

Further areas of work include upgrading streetlights to save energy and making various funding bids with local and regional partners to develop feasibility studies and costed business plans for green energy generation initiatives. The council's Street Lighting Inventory shows 10,275 street light units (including switch gear - which consumes electricity), 94% of which have been converted from Sodium lanterns to high efficiency LED lanterns since 2015. LED lanterns use approximately 30% of energy equivalent of the sodium units.

Challenges

Successfully decarbonising energy use in the region will be a significant task, with several barriers to overcome while implementing decarbonisation technology such as:

- Planning.
- Readiness of technologies such as hydrogen: equipment suppliers and local infrastructure.
- Grid connection – impacts of scale or timeline for connection.
- High cost of investment and payback.

It is important that all actions taken to achieve net-zero and deliver a net zero carbon economy do not exacerbate inequality. Those who can least afford the required actions must not be disproportionately affected, and heat decarbonisation must not exacerbate fuel poverty. A key barrier raised in the stakeholder engagement, particularly for homeowners and SMEs was the investment required to implement low carbon solutions. It is crucial that all individuals and businesses are made aware of funding and support available to help them transition their energy use to net-zero. Adequate funding must be made available for those who cannot afford the required measures.

Another key barrier is the current skills gap and supply chain limitations for several key low carbon technologies. For many low carbon solutions, such as insulation or heat pumps, there is currently a lack of skilled and trusted installers available to undertake works at the rate required per year to achieve local and national targets. Action must be taken to ensure that enough installers of low carbon technologies are being trained and accredited to reliably transition our buildings to net zero.

Grid constraints can delay projects or sometimes increase cost of investment. Moreover, a number of current production and industrial process rely on combustion to enable the high temperatures required for production – the ability of hydrogen to replace natural gas in the process is not fully understood.

KPI	Baseline Value	Interim Target	2045 Target
% reduction in total carbon emissions from energy use	2005	75% reduced by 2030 ¹	Net Zero ²
% reduction in residential heat demand	2015	15 % by 2032 ²	25% ³
% household in fuel poverty	2019	Less than 15% by 2030 ³	Less than 5% by 2040
% homes at set EPC levels: where technically feasible and cost effective to do so	2019	100 % EPC C better by 2033 ⁴	95 % EPC A-B ⁵
% of total energy (including transportation) to be generated from renewables	2018	50% by 2030 ⁵	95%
% of buildings with low carbon heat source	2021	75% non-domestic by 2032 58% domestic by 2032 ²	55% non-domestic by 2032 10% domestic by 2032 ²

¹ Climate Change (Emissions Reduction Targets) (Scotland) Act 2019

² Scotland's Climate Change Plan 2018-2032 Update

³ Fuel Poverty (Targets, Definitions and Strategy) (Scotland) Act 2019

⁴ Energy Efficient Scotland: Decarbonising Scotland

⁵ Scottish Energy Strategy, 2017

Theme 2: LOW-CARBON TRANSPORT

Transport is Scotland's largest sectoral emitter, accounting for 10.9 MtCO_{2e} or 26% of Scottish emissions⁶ in 2021 while in Clackmannanshire it accounted for 12.8% of overall emissions in Clackmannanshire, or approximately 0.065 MtCO_{2e}.

The National Audit Office underscores the significance of transport emissions in their 2022 report on addressing climate change in Scotland: "Travel and transport emissions will need to be radically reduced to allow Scotland to meet its net zero targets and mitigate the impacts of climate change."

Given Clackmannanshire Council's role as an employer over 2,050 staff and as a local authority responsible for planning and transportation services to the public, it has huge scope to reduce emissions while improving air quality and active travel infrastructure.

Sustainable transport

The sustainable transport hierarchy highlights the different modes of transport with the least emission intensive at the top of the pyramid. Our net zero targets can only be achieved with a modal shift away from transport on the lower end of the diagram to more sustainable modes that are higher up the sustainable transport hierarchy.

This is a significant challenge since cars account for 38% of all transport emissions and approximately 48.7 billion vehicle kilometres were driven by motor vehicles on Scottish roads in 2019. Nevertheless, there is 15.3% reduction against the 2019 baseline reflecting the ongoing changes to travel patterns through 2021 post COVID-19, including increased use of digital connectivity which enables people to work and connect with others remotely.

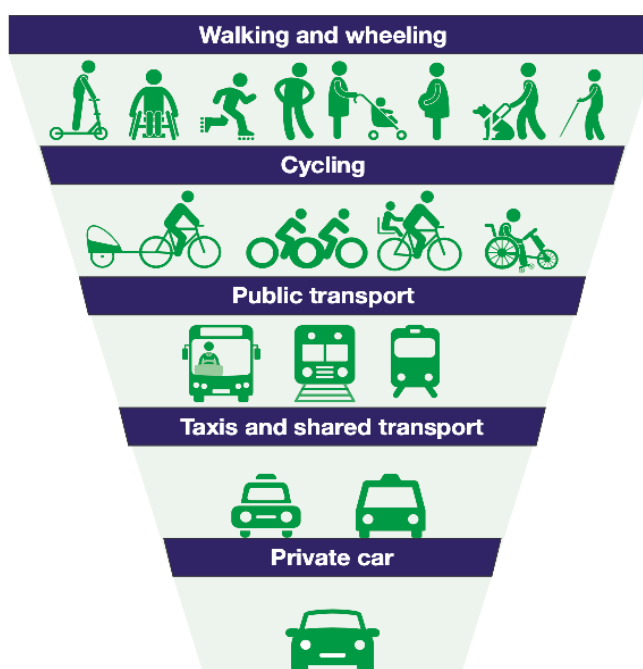


Figure 13 Sustainable transport hierarchy

While there are several employees who need to use a vehicle while at work, including a large proportion of our social workers, housing officers, roads workers and tradespeople, the pandemic has shown that a significant proportion of our office-based staff are able and willing to successfully work from home. Digital working and remote meeting therefore have significant potential to build on the emissions reductions that have been documented during the pandemic.

Low carbon transport modes

It is also important to note, that while there is a role for electric and hydrogen vehicles in reducing emissions, the emission-intensive manufacturing process combined with the fact that individual vehicles still contribute toward congestion and poor air quality through particulate matter from their tyres and brakes means that a transport-based model of private vehicles is inherently sub-optimal from a health, social and environmental lens even when vehicles are electric or hydrogen powered.

Carbon-reduction modelling has concluded that it will not be possible to reach net zero emissions through technological solutions alone. Reducing car use is essential for the transport system to be decarbonised at a pace that meets the statutory emissions targets set by the Scottish Parliament. Therefore, national planning guidance (NPF4) is already setting out the concept of 20 minute or liveable neighbourhoods.

⁶ excluding shipping and aviation

Active travel

Active travel including walking, wheeling and cycling is associated with [improvements](#) in mental health and reduced risk for all-cause mortality, it has the potential to reduce detrimental health impacts by reducing [motorised traffic](#) while providing benefits to [local economies](#). Therefore, barriers to active travel, particularly safety concerns, hamper people's access to exercise.

Public transport

Public transport also has the potential to encourage [active travel](#) while reducing [carbon emissions](#) and improving access to services and facilities and connect [communities](#). Certain groups in the population are disproportionately affected by the lack of available and affordable [public transport](#) while some people find it necessary to purchase a car even when they cannot [afford](#) it. To comprehensively understand access needs, it is essential to commit to listening to voices from a diverse range of groups and demographics.

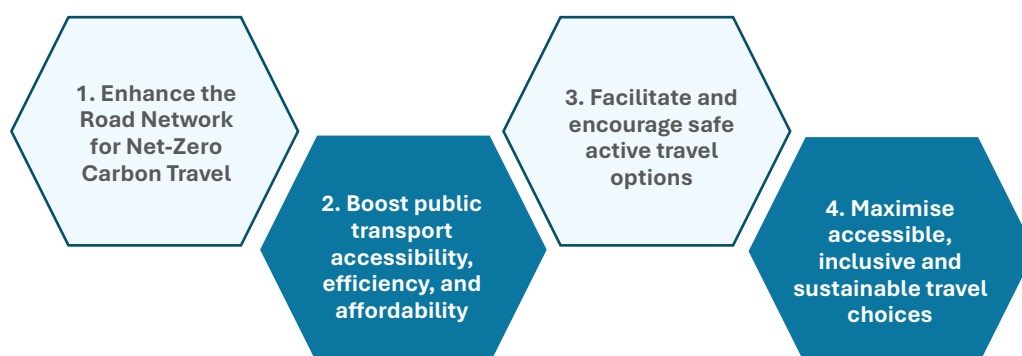
Consequently, there is a firm financial case for facilitating active transport options for residents and businesses which is likely to have been strengthened by recent energy, fuel and food price increases. There are health-based implications for all residents in Clackmannanshire from a low proportion of people using active and public transport since motorised transport can increase risk of accidental injury and [disrupt communities](#) while potentially reducing levels of physical activity and [social interactions](#). The volume and speed of traffic and long commutes can also be [detrimental](#) to health.

Specific Scottish Government legislation to address transport emission includes:

- reducing car kilometres by 20% by 2030;
- phasing out the need for new petrol and diesel cars and vans by 2030;
- working with public bodies to lead the way by phasing out the need for new petrol and diesel light commercial vehicles by 2025 and larger new vehicles by 2030;
- Scotland's rail services being decarbonised by 2035

Our priorities

The Council is going to advance more the implementation of the sustainable transport principles and contributing into the reduction of carbon emissions. The main actions for the next years will be focused on achieving 4 priorities:



Strategies underpinning this theme:

- National Transport Strategy 2
 - Strategic Transport Projects Review 2
 - National Planning Framework 4
 - Scottish Government Climate Change Plan Update 2020
 - Route Map to 20% Reduction in Car km
 - SEStran Regional Transport
- Local Transport Strategy
 - Local Development Plan
 - Active Travel Plan
 - Electric Vehicle Strategy
 - Staff Travel Plan
 - School Travel Plan

What has Clackmannanshire Council done so far

Significant investments are being made in active travel network through the City Region Deal and in partnership with Sustrans while other sustainable transport initiatives include the following:

- supporting bus services;
- school travel planning including cycle training in primary schools;
- electrification of the Council's fleet, replacement of the waste vehicles leading to save 273 tCO₂
- promotion and delivery of the Council's pool car programme that helps employees leave their car at home / avoid car ownership;
- upgrading our traffic counters to generate stronger data;
- promoting the roll out of the National Entitlement Card and Young Scot for U22 free bus travel;
- establishing Alloa Active Travel Hub through the Scottish Government's Town Centre funding to convert the former public toilets;
- real time planning information screens installed at Shillinghill.

Employee mileage claims by kilometre decreased from 542,952 in 2019/20 to 416, 971 in 2022/23 This amounted to a reduction of 23.2% or an emission savings of 21.5 tCO_{2e}. During Covid-19 restriction 2020/21 the reduction was 58.66% clearly reflecting the potential savings that digital working can offer the Council.

Clackmannanshire Council spend around £175,000 per year on supported bus services, in addition we also support door to door accessible service for those who cannot use conventional public transport (£50,000 per year). RTPI screen have been installed at Murray Square (although at the time of writing they are vandalised and not operational) and Shillinghill. We are currently looking at the feasibility of making Murray square into a mobility hub. We are involved in the Forth Valley Bus Partnership and are currently involved in a study looking at bus priority.

We are still using recycling techniques where possible to reduce carbon emissions. The council as a whole are looking at using Hydrogenated Vegetable Oil (HVO) in Council diesel vehicles which can reduce emissions by up to 90%.

With road maintenance we are looking at moving away from hot mixed asphalts to warm mix which also helps reduce the amount of gas oil needed to heat the material.

Challenges

There is clearly a strong role for the Council in ensuring that sustainable transport modes are a realistic option for residents and businesses in Clackmannanshire. More specifically, when considering land allocations in the Local Development Plan and at new planning applications, it is essential that developments are in areas with good access to a choice of modes high up on the sustainable transport hierarchy. This may require us to take tough decisions at Council to stay no to unsustainable development.

Despite the Council replacing numerous fossil fuel powered vehicles with renewably powered ones, obstacles remain. For example, at present the cost of heavy electric vehicles is approximately three times the cost of a fossil fuel powered equivalent, so this transition will be quite depending on the capital funding allocated. The availability of fleet maintenance is also a challenge as manufacturer back up for alternatively fuelled vehicles is not fully in place.

Infrastructure is the key element to a successful transition. We have grown the charging infrastructure within Council operating depots and will continue to do so in the coming years. Electrical capacity at each site is going to be a significant issue, due to the age of some buildings the electrical supply is very low with little to no spare capacity to operate charging units.

As yet there is no clear indication of what is going to be the preferred option for heavy vehicles, manufactures are still in the development stage and continue to experiment with new concepts. Hydrogen and gas are the most likely options going forward but even this brings its own infrastructure issues.

KPI	Baseline Value	Interim Target	2045 Target
% of city centre journeys by active travel	2019	At least 20% by 2030 ⁷	Increase of 30% ⁷
% of increased usage of local public transport	2022 26% of population	25% by 2030	50%
% reduction in carbon emissions from public transport	2018	80% by 2030 ⁸	100 % ⁸
% reduction in carbon emissions from Council business travel	Target will be set in the new Staff Travel Plan		
% of new petrol or diesel cars or vans	2018	0 % by 2032 ⁹	0%
% reduction in carbon emissions from road traffic in the wide area	2019	More than 40% by 2032	75%
% car kilometres	2019 268.4 X10 ⁶ car kilometres	20% reduced by 2030 ⁹	>20 % reduced
% of Ultra Low Emission Vehicles	2019	45% by 2032	100%
% Council light commercial fleet vehicles with low-carbon alternatives	2019	100 % by 2035	100 % ⁹

⁷ National Transport Strategy 2

⁸ Decarbonising the Scottish Transport Sector

⁹ Climate Change Plan update 2020

Theme 3: WASTE, RECYCLING AND THE CIRCULAR ECONOMY

Even though waste accounted for 1.6 MtCO₂e or only 3.7% of emissions in Scotland in [2022](#), approximately 80% of Scotland's carbon footprint comes from our consumption of goods, materials and services.

Waste also constitutes one of the major areas of emission reduction potential for Clackmannanshire Council by virtue of the Council being responsible for the collection and disposal of a range of municipal wastes.

While the available data on the provision of waste has not been included in Clackmannanshire Council's overall footprint in previous years, it is important that it is incorporated and accounted for in the target to reach net zero by 2040 since it is within council control.

As highlighted by the [linear economy](#) diagram, a short-term approach is centred on waste disposal while we need to transition towards the long-term goal of prevention, reuse, remanufacture and recycling.

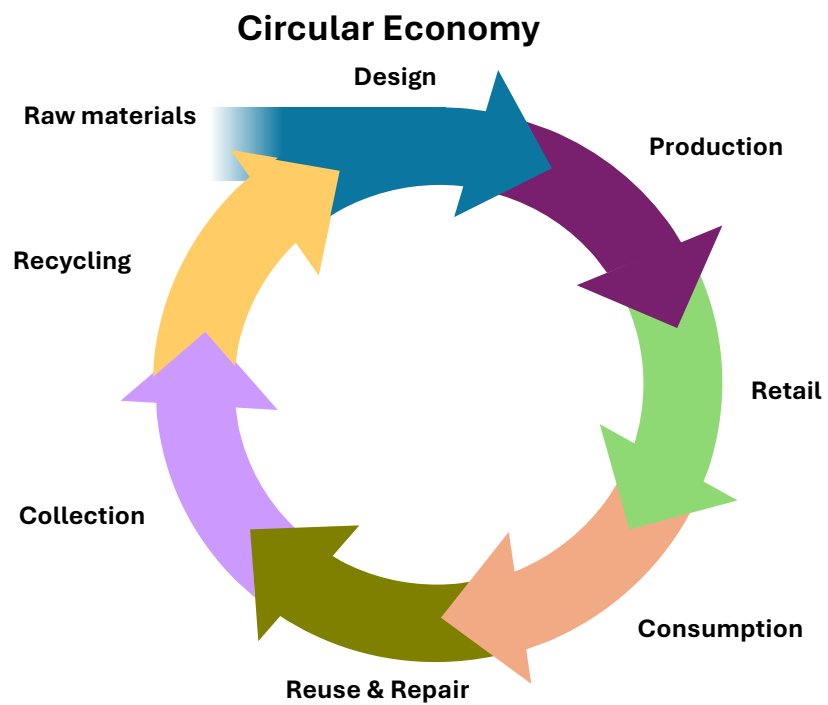


This is supported by an independent review by the Scottish Government on the waste that notes that preventing waste from occurring in the first place is by far the [best option](#), such as through reducing waste and increasing recycling.

This review also found that incineration is currently [less damaging](#) to the environment than landfill, which was supported by a Zero Waste Scotland study that notes that sending one tonne of residual municipal waste to energy from waste currently has a carbon impact of 306 kg CO₂/t or 27% lower than sending it to landfill.

However, the study also notes that while energy from waste plants have helped to reduce emissions from residual municipal waste, the decarbonisation of the grid in Scotland and the UK has been so successful that energy from waste is no longer considered a [low-carbon solution](#).

This recognition has led to the Scottish Government announcing a moratorium on the building of new waste-to-energy plants in June 2022, which means that Councils in Scotland will be told not to grant planning permission to new incinerators to ensure that Scotland doesn't have an over capacity in future years. The six sites currently operating in Scotland will continue to do so while plans for 11 more have already been approved so their construction will go ahead.



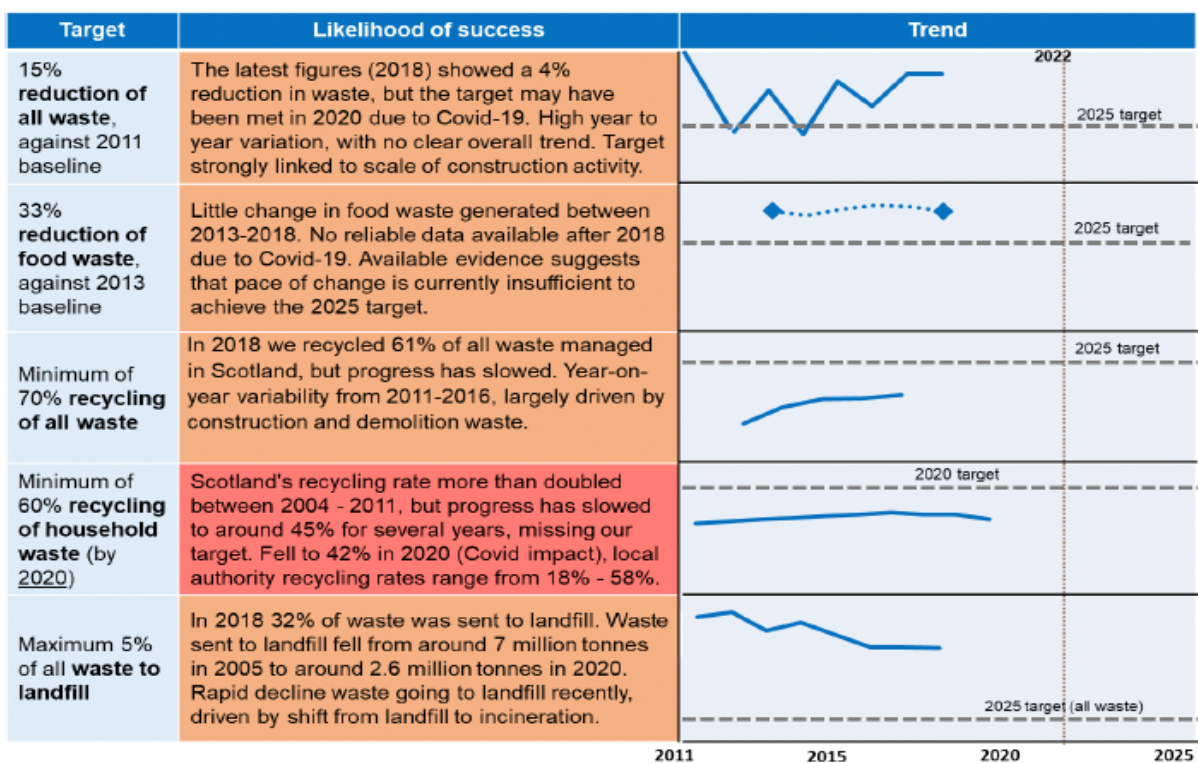
Scotland's circular economy targets, as outlined in the Scottish Government's Climate Change Plan, include:

- banning biodegradable municipal waste to landfill by 2025;
- reducing waste sent to landfill by 5% by 2025;
- recycling 70% of all waste by 2025;
- reducing the amount of waste produced by 15% compared to 2011 levels.

Other legislation includes:

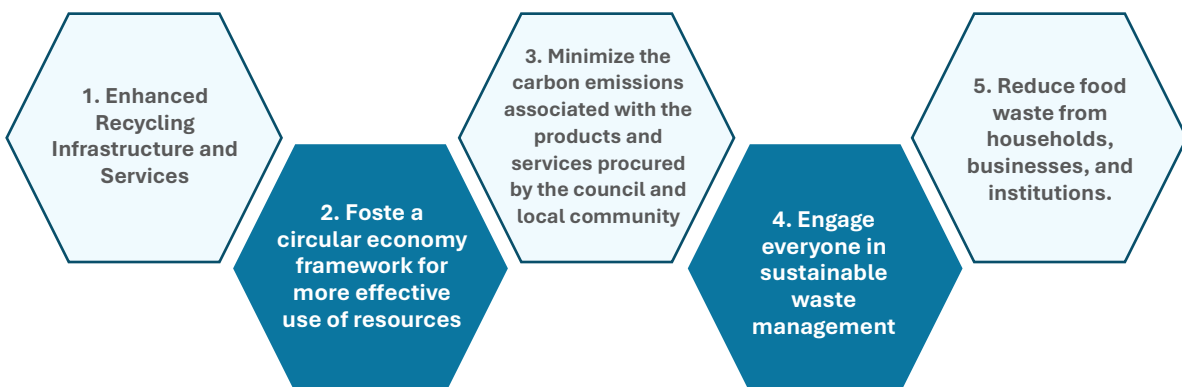
- a ban on many single-use plastics including cutlery, plates, stirrers, straws, balloon sticks and polystyrene food containers and cups from 1 June 2022.

Further targets and progress against them is outlined in the image below from the 2022 progress report towards waste targets in Scotland.



Our priorities

The Council is going to advance more the implementation of the sustainable transport principles and contributing into the reduction of carbon emissions. The main actions for the next years will be focused on achieving 4 priorities



Strategies underpinning this theme:

- Making Things Last: a circular economy strategy for Scotland (2016)
- Circular economy and waste route map to 2030 (consultation)
- National Planning Framework 4
- Local Development Plan
- Zero Waste Strategy 2012-22
- Household Waste & Recycling Collection Policy 2023
- Wellbeing Economic Strategy

What has Clackmannanshire Council done so far

Clackmannanshire Council's Zero Waste Strategy 2012-22 aims to ensure that the Council meets the relevant targets set out in the Zero Waste Plan and reduces the impact of waste management on the environment. The Council continues to collaborate with partners on the procurement of a medium term (10-15 years) disposal solution that is compliant with the ban on biodegradable municipal waste to landfill by 31 December 2025. This solution will be in the form of thermal treatment (waste to energy), which is projected to lead to emissions savings in the short to medium term.

As highlighted by the 2021 Zero Waste Scotland data, despite having an above average recycling rate for Councils in Scotland, a significantly higher proportion of waste was sent to landfill than other local authority areas. Decreasing the proportion of waste going to landfill therefore constitutes an opportunity to reduce emissions.

The Waste Service is currently working with Zero Waste Scotland on an options appraisal of the waste and recycling collection service to develop options to maximise the volume and quality of recyclates recovered which was approved by Council in May 2023.

Clacks Good Food Partnership developed a bid to join the Sustainable Food Places UK Network (Bronze status) and has secured support funding for a coordinator, who began work in April 2022, to contribute to the wider Wellbeing Economy aims to promote community food growing, reduce poverty, develop local economic food enterprises and improve wellbeing. The partnership has drafted a Food Charter which will aim to have organisations and individuals pledge to reduce food waste, avoid packaging and where there is waste redistribute surplus or recycle.

The reduce, reuse, repair and recycle hierarchy is also promoted to improve resource efficiency and contribute to the transition towards a circular economy - where materials are reused as opposed to the traditional approach of making items, using them and then throwing them away.

Emissions from waste have also been Incorporated into the Public Sector Climate Change Duty Report process and are therefore counted in Clackmannanshire Council's own carbon footprint.

KPI	Baseline Value	Interim Target	2045 Target
% reduction of food waste	2013	33% 2025	>33%
% reduction of all waste	2011	15% 2025	>25%
% household waste recycled / composted	2024	60% 2020	>60%
% of all waste to landfill	2024	Maximum 5% 2025	<5%
% of all biodegradable municipal waste	2024	0% 2025	0%

Theme 4: BIODIVERSITY, CARBON STORAGE AND AGRICULTURE

There are strong parallels between the grave observed changes to the climate described in *Chapter 1* and the observed damage to the planet's biodiversity over the last few decades. For example, the World Wildlife Foundation's 2020 Living Planet [Report](#) reported that there had been an average **68% drop** in mammal, bird, fish, reptile, and amphibian populations since 1970.

Additionally, a recent [survey](#) by Bugs Matter found a **decline of almost 60%** in flying insects in the UK in the last 20 years. Since most of our food and soil health is dependent upon insects this trend could have significant implications on society.

As [noted](#) by Nature Scotland: *"Climate change is the single greatest threat to Scotland's habitats, whether they're found on our mountain tops or our seabeds. Some habitats will be directly affected. More often, climate change will alter the intricate ecological balances that let plants and animals grow and thrive. Many of Scotland's species are highly adapted to specific climatic conditions, meaning that climate change will have drastic effects. Again, the impacts may be direct or indirect."*

The co-occurrence and synergistic interaction of climate change, loss of biodiversity and effects on food production have an exponential multiplier effect on human health compared to when these conditions are experienced separately. For example, food production and processing, retail, distribution and consumption, as well as food waste, contribute to climate change through the emissions of greenhouse gas.

Biodiversity provides us with food, soil, fuel, clean water, health, wealth and other vital services which means that their degradation can contribute to food insecurity. High quality, biodiverse environments are also better able to provide us with important services such as flood alleviation, pollution filtration, water purification, soil formation and pollination of our crops. Safeguarding biodiversity and ecosystems are therefore fundamental to climate resilient development. Recent IPCC [analyses](#), drawing on a range of lines of evidence, suggest that maintaining the resilience of biodiversity and ecosystem services at a global scale depends on effective and equitable conservation of approximately 30% to 50% of Earth's land, freshwater and ocean areas, including currently near-natural ecosystems.

Accordingly, land is an essential resource to tackling climate change. [In 2021](#) forestry and land use extracted 4 MtCO_{2e} from Scotland– this equates to 9.62% of Scotland's total emissions. In addition to capturing and storing carbon, trees and woodland reduce the impacts of flooding, provide habitats for displaced species and shade in a warming climate, which will be particularly important during heatwaves.

There are also health based benefits to increasing natural space and negative impacts to health from increased urbanisation of natural spaces including exposure to [poor air quality](#). Additionally, blue spaces, defined as all forms of natural and manmade surface water, have a [positive link](#) with health. However, Scotland and the UK's current approach to land use threatens biodiversity and therefore weakens our ability to mitigate and adapt to climate change.

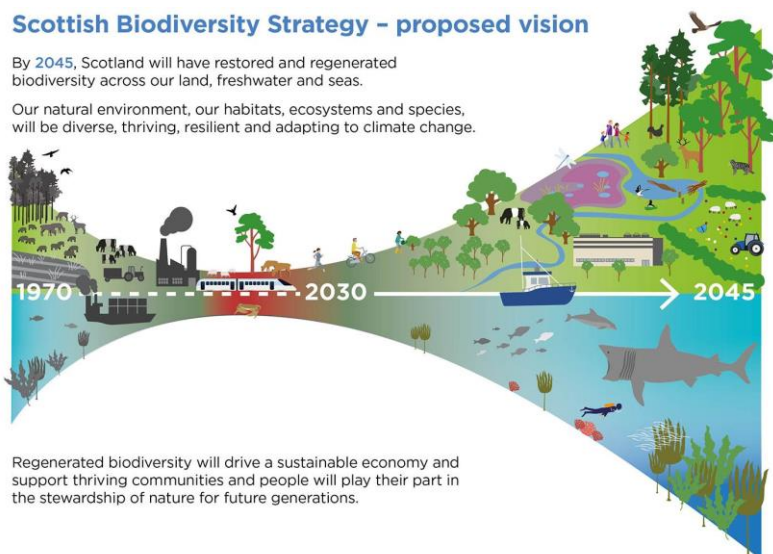


Figure 14 Proposed vision of Scottish Biodiversity Strategy

The Scottish Government's Programme for Government 2021-22 includes a commitment to introduce a Natural Environment Bill, putting in place key legislative changes and statutory targets to restore and protect nature. It also commits to publishing a new biodiversity strategy underpinned by a 5 year delivery plan, including changes in the way we use and manage land and our approach to protecting habitats and ecosystems.

Scottish Government legislation that aligns with the Biodiversity theme:

- The Nature Conservation (Scotland) Act 2004 introduced a duty for public bodies in Scotland to further the conservation of biodiversity. This biodiversity duty is about taking care of nature all around us, not just in specific protected sites and for particular species. Fulfilling our Biodiversity Duty can help address wider outcomes such as:
 - ensuring compliance with the legislation and helping Scotland to meet its national and international biodiversity targets
 - helping Scotland address biodiversity loss and the climate emergency while contributing to a green recovery and a net zero future;
 - demonstrating examples of working in a socially responsible and ethical way by safeguarding biodiversity and environmental assets for future generations;
 - contributing to sustainable development and the quality of life in Scotland.
- The Wildlife and Natural Environment (Scotland) Act 2011 introduces a requirement for all public bodies to report every 3 years on their compliance with their duty to further the conservation of biodiversity through the publication of biodiversity duty reports.
- The 2020 Challenge for Scotland's Biodiversity sets out the major steps needed to improve the state of nature in Scotland. Scotland's 2020 Challenge aims to:
 - protect and restore biodiversity on land and in our seas, and to support healthier ecosystems
 - connect people with the natural world, for their health and wellbeing and to involve them more in decisions about their environment
 - maximise the benefits for Scotland of a diverse natural environment and the services it provides, contributing to sustainable economic growth

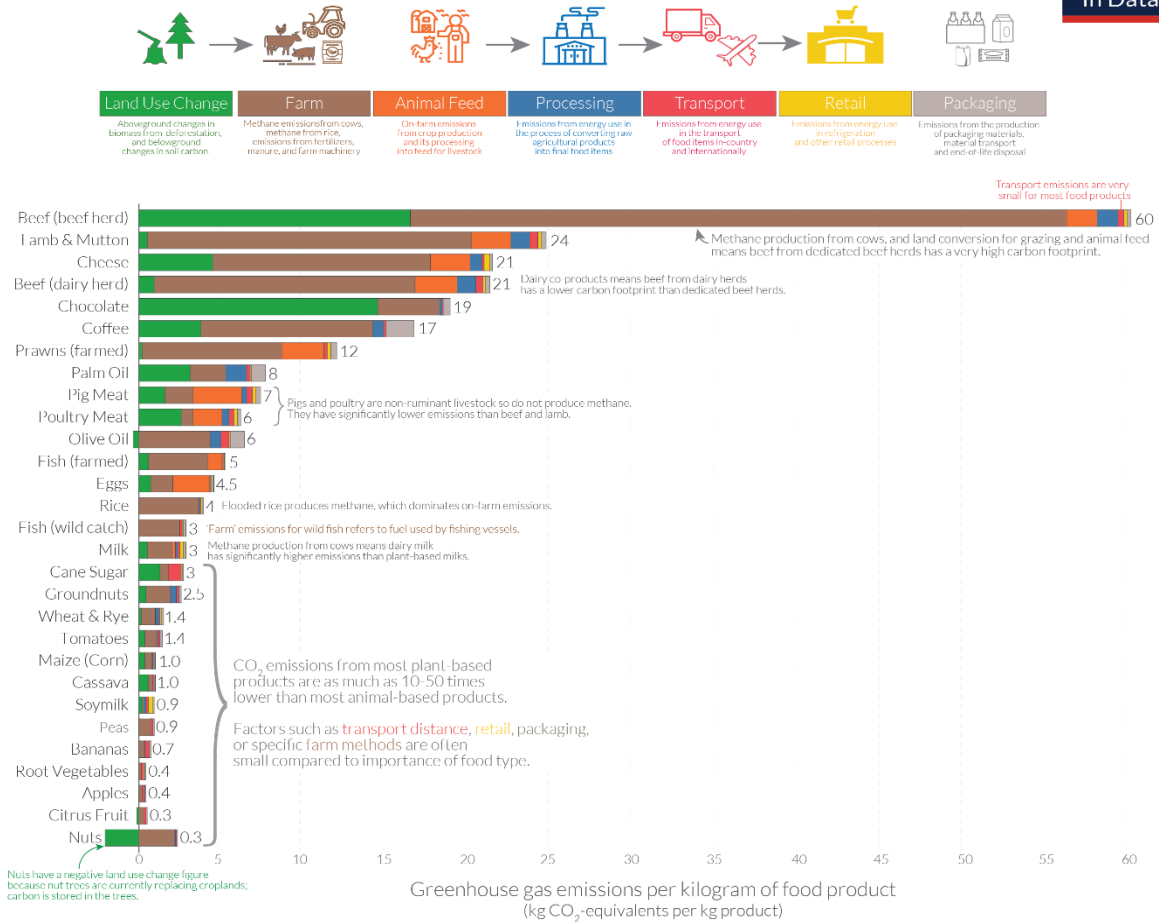
The UN Food and Agricultural Organisation has [calculated](#) that the world's agri-food systems account for 31% per of human-caused GHG emissions. Emissions are disproportionately skewed towards certain types of food, in particular, red meat.

Behavioural change is of major significance for decarbonisation with the Climate Change Committee calculating that over 60% of changes required to reach net zero will require some degree of societal or behavioural change.

Scottish Government legislation that aligns with the Agriculture theme:

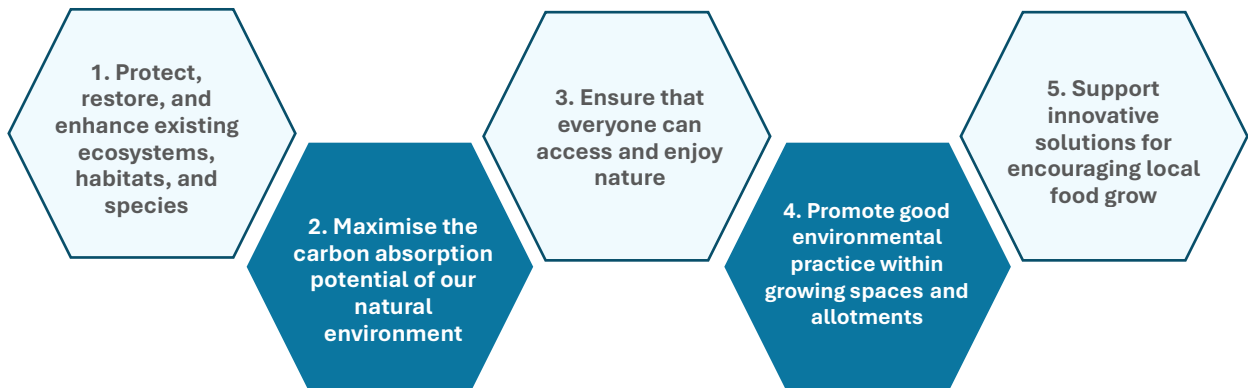
- The Good Food Nation Bill passed in 2022:
 - creates links between policy at the national and local levels and for local authorities and health boards in order to collaborate to create good food nation plans.
 - Establishes Food Commission to scrutinise and make recommendations of the good food nation plans and progress reports.
- The Community Empowerment Act (2015) places a duty on local authorities to provide allotments and outlines that this entails to take reasonable steps to ensure:
 - that the number of people on their waiting list does not exceed half the total number of allotments owned and leased by the authority;
 - that a person on the list does not wait more than five years for an allotment

Food: greenhouse gas emissions across the supply chain



Our priorities

The Council will continue to improve biodiversity and the role of ecosystems in adapting to climate change advance and contributing into the reduction of carbon emissions. The main actions for the next years will be focused on achieving 5 priorities:



Strategies underpinning this theme:

- The Nature Conservation (Scotland) Act 2004
- Wildlife and Natural Environment (Scotland) Act
- Good Food Nation Bill
- Community Empowerment Act (2015)
- Biodiversity Strategy to 2045
- Local Development Plan
- Pollinator Strategy
- Local Biodiversity Action Plan
- Forestry and Woodland Strategy
- Community Food Growing and Allotment Strategy

What has Clackmannanshire Council done so far

Clackmannanshire Council is developing a Pollinator Strategy and a Local Biodiversity Action Plan to set out a range of commitments that will help to improve biodiversity and the role of ecosystems in adapting to climate change.

Our Energy and Sustainability team, in particular our countryside ranger service, advises on how to protect and enhance wildlife across a range of Council services including infrastructure, roads, land, flooding & bridges and development management. The team works with communities, promote awareness of conservation work and manage sites to conserve and enhance biodiversity in the Council area, screen planning applications for any potential impacts on biodiversity and undertake school engagement on the importance of biodiversity. Some other tasks they undertake include:

- working with The Conservation Volunteers to improve the countryside and protect the environment
- using funding from Naturescot to support pollinators and raising awareness of their importance
- providing outdoor learning to people across Clackmannanshire
- helping community volunteer projects to protect nature
- collaborating with the Dollar Community Development Trust to meet their aims to “*reduce Dollar’s carbon footprint and protect their beautiful surroundings*”
- supporting the Alva Glen Development Trust and Gartmorn Dam Development Trust to protect nature
- monitoring bat, owl and badger populations
- delivering on Naturescot habitat restoration projects

Alongside the Countryside Rangers other services such as Land Services, Roads and Planning have contributed to delivery of our Biodiversity Duty, with notable achievements including the Council’s participation in the Inner Forth landscape Initiative and ongoing work with the successor of this project – Climate FORTH.

The Council is a partner of Forth Climate Forest funded through the Woodland Trust’s Emergency Tree Fund. This is a ten-year programme of tree planting projects for a range of well-being, climate and ecological benefits within the Forth Valley Area. The project will deliver canopy, connectivity, and carbon targets.

Work is also ongoing to designate Local Nature Conservation Sites in order to ensure these are given considerations during planning applications and by landowners. Officers actively encourage partnership working with external organisations such as the NHS and Clackmannanshire Third Sector Interphase to develop projects that will have a positive impact on biodiversity such as The Clacks Good Food Partnership.

It is recognised that a Council-wide approach to the conservation of biodiversity that further embeds biodiversity considerations into corporate & service plans, policies, strategies and operations is required so that all decision-making takes account of the potential impacts on local biodiversity. This led to Clackmannanshire Council [passing](#) the Edinburgh Declaration to adopt a Council-wide approach to the conservation of biodiversity.

The Council is also reviewing its Community Food Growing and Allotment Strategy to identify ways of facilitating community food growing.

Challenges

Capturing the benefits of biodiversity for climate change is challenging due to the complex and multifaceted interactions between ecosystems and climate systems. Biodiversity contributes to climate regulation through carbon sequestration, maintaining ecosystem resilience, and supporting water cycles, but quantifying these benefits is difficult. Additionally, the benefits of biodiversity are often long-term and diffuse, making them hard to capture in short-term economic analyses and policy frameworks.

Limited data and specific research around Clackmannanshire area remains one of the hardest challenges preventing the Council to capture specific contributions of biodiversity to climate mitigation and adaptation efforts. As a result, translating the ecological importance of biodiversity into actionable, measurable outcomes for climate policy remains a significant challenge.

While agriculture is not directly within Clackmannanshire Council’s remit, it is still a significant source of greenhouse gas emissions that the Council can influence. We can aim to do this through engaging with businesses to support decarbonisation in conjunction with supporting sustainable consumer behaviours.

In line with this, the Council has worked with partners to help to create a Good Food Charter to promote healthy and local eating.

KPI	Baseline Value	Interim Target	2045 Target
Number of new trees planted in the Council area	2024 10000 annually	Approx. 10000 annually	Approx. 10000
% of residents Walking distance withing 5 minutes to nearest green or blue space	2013 71%		
% of remaining carbon absorbed by our natural environment to achieve net zero emissions	This will be established when establishing the Carbon Budget		
Area of Council open space managed for biodiversity			
Number of designated Local Nature Conservation Sites	0 sites 2024	17 sites	21 sites
% of school and pre-school children that have regular access to the natural environment as part of their education			

Theme 5: ADAPTATION, PLANNING AND ORGANISATIONAL CAPACITY

Approximately 3.3 to 3.6 billion people live in places that are highly vulnerable to climate change while a high proportion of species are also vulnerable to climate change. Current unsustainable development patterns are increasing [exposure](#) of ecosystems and people to climate hazards. However, there are feasible and effective adaptation [options](#) which can reduce risks to people and nature. One of the key challenges for planning and adapting to climate change is the fact that the climate is projected to become increasingly hostile until decades after net zero being reached globally due to a lag in when emissions are emitted and when the full climatological repercussions of the emissions take their toll (a process known as thermal inertia). Furthermore, the pace of change could be significant: Scotland's top ten [hottest years](#) have all occurred since 1997 with records beginning in 1884.

Adaptation Scotland has documented the following long-term climate change trends for Scotland based upon a comprehensive review of data.

Climate Projections for Scotland

- Average temperatures will increase across all seasons
- Weather will remain variable and may become more variable
- Typical summers will be warmer and drier
- Typical winters will be milder and wetter
- Intense, heavy rainfall events will increase in both winter and summer
- Sea levels will rise



Figure 15 Sauchie in December 2021 after storm Arwen – hundreds of trees were blown over across Clackmannanshire

The effects of climate change like sea-level rising, flooding and lower crop-yields can result among the main drivers of the economic impacts and long-term [GDP losses](#) in Scotland. Estimations of these impacts go up to £200m to £250m per year.

A climate that is continuously changing presents clear public health risks such as death and injury from extreme weather, flooding and heat waves. Additional health concerns that stem from climate change and the fossil fuel economy include air pollution, challenges for food and water security, the spread of disease, populations becoming displaced and increased levels of mental ill health.

Some parts of Clackmannanshire's population are particularly vulnerable to the potential impact of climate change on health including those with existing health conditions, the elderly and those living in flood risk areas. Wide engagement and a coordinated approach have also been identified as crucial for climate change resilience. As noted by the IPCC:

“Climate resilient development is facilitated by international cooperation and by governments at all levels working with communities, civil society, educational bodies, scientific and other institutions, media, investors and businesses; and by developing partnerships with traditionally marginalised groups, including women, youth, Indigenous Peoples, local communities and ethnic minorities. These partnerships are most effective when supported by enabling political leadership, institutions, resources, including finance, as well as climate services, information and decision support tools.”

Engagement work is also important beyond adaptation based goals, since, as noted previously, over 60% of changes required to reach net zero will require some degree of [societal or behavioural change](#). Moreover, community involvement in maintaining and designing the places that they live in can build a sense of ownership, belonging and attachment while reducing [social isolation](#) and improving [mental health](#).

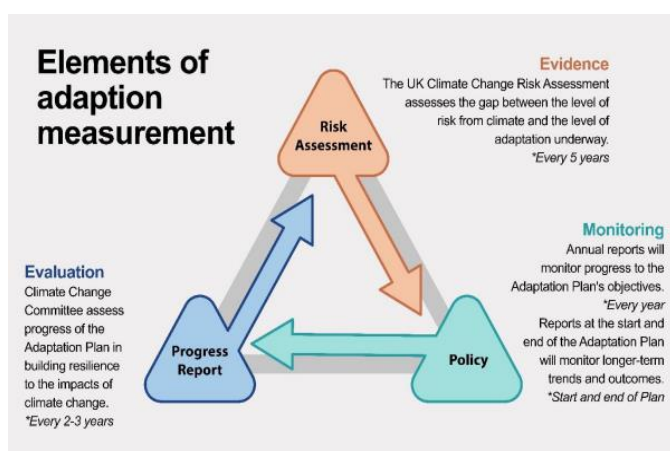
The transition to a climate-smart council requires a fundamental transformation of workforce and other outside sectors that facilitate the supply of skills needed for this transition.

The new National Planning Framework (NPF4) part of the Scottish Government’s Programme for Government 2021 aims to take:

“an ambitious approach to prioritising emissions reductions’, integrating land use and transport, focusing on place based outcomes, supporting green economic recovery which promotes nature based solutions, and supporting the concept of 20-minute neighbourhoods. We will involve the relevant Economic Development body in assessing potential economic benefits of proposals for development identified in NPF4 as being of national or regional significance.”

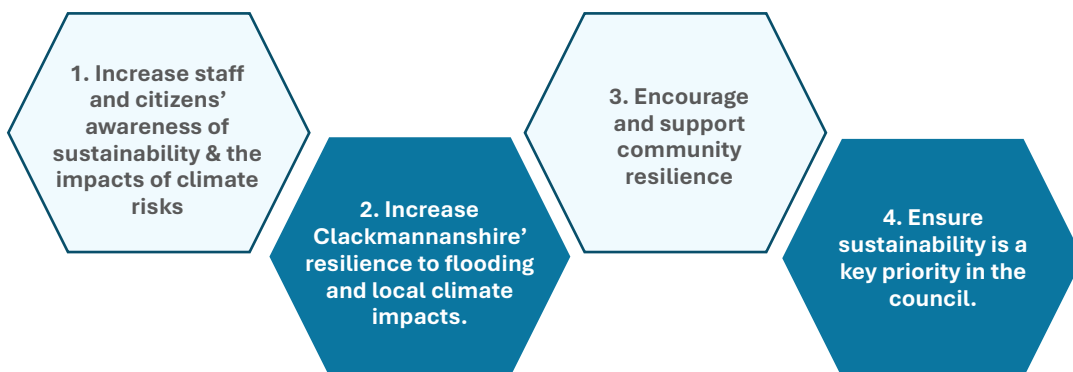
The Scottish Government opened during 2024 a consultation on the Climate change - National Adaptation Plan 2024 to 2029, establishing also a framework how to monitor the progress of adaptive measures in Scotland. The strategy has the following outcomes:

1. Nature Connects across our land, settlements, coasts and seas
2. Communities are creating climate resilient, healthy and equitable places.
3. Public Services and Infrastructure are collaborating in effective, inclusive adaptation action.
4. Economies, businesses and industries are adapting and realising opportunities in Scotland’s Just Transition.
5. Scotland’s international role supports climate justice and enhanced global action on climate adaptation.



Our priorities

The Council is going to advance more the implementation of the sustainable transport principles and contributing into the reduction of carbon emissions. The main actions for the next years will be focused on achieving 4 priorities:



Strategies underpinning this theme:

- National Planning Framework 4
- Scottish Government Climate Change Plan Update 2020
- Climate Change - National Adaptation Plan 2024 to 2029
- Flood Warning Development Framework 2022–2028
- Local Development Plan
- Flood Risk and Surface Water Management Plans
- Severe Weather Plan

What has Clackmannanshire Council done so far

The Council works with the Scottish Environmental Protection Agency (SEPA) as part of the Flood Risk Management Planning process and, with other responsible authorities, is a member of two Local Plan Districts (LPD) out of the 14 covering all of Scotland; The Forth LPD and The Forth Estuary LPD. The work carried out with these partners contributes positively towards the sustainable protection of our communities and our environment. Clackmannanshire also have five active flood/resilience groups/teams along the Hillfoots; Menstrie, Alva, Tillicoultry, Dollar Lodge Park and Muckhart. The groups/teams are robust and well organised with well-developed and agreed flood action plans, equipment and training and a variety of agreed triggering mechanisms to help respond to flood events.

They also have network group meetings in addition to meeting regularly with Council Officers who support all the groups. Officers attend and participate when the groups are testing their plans (at least once a year) or equipment. Menstrie, Alva and Muckhart are resilience groups so have a wider remit, whereas Tillicoultry and Dollar Lodge Park are primarily focused on flood risk.



Figure 16 Testing of Watergate System by Local Flood Group (TIDECO) in Tillicoultry – 29th June 2021

We are also developing a project in partnership with the Muckhart Flood Group, the Forth Rivers Trust and Nature Scot to see the introduction of a suite of Natural Flood Management measures to protect properties at risk in the Kirkhill and Cairns Place area of Muckhart. Further work and agreement with landowners are needed but this project has the potential to substantially reduce the risk of flooding if it can be achieved.

Furthermore, the Council is collaborating with a range of partners on adaptation initiatives such as Climate FORTH (Furthering Our Resilience Through Heritage) - a new project for Inner Forth Futures which is in its development phase due to a grant being provided by the National Lottery Heritage Fund to facilitate and demonstrate the transformative action needed to transition to a climate literate, ready and resilient place.

Establishing Climate Change Forums across the five wards of Clackmannanshire in addition to coordinating adaption initiatives with a wide-range of partners, including the third sector, neighbouring local authorities, different levels of government, the private sector, residents and community groups is an initial means of complying with the IPCC's recommendation, although extra effort will need to be made to reach out to communities that are disproportionately vulnerable to climate change.

KPI	Target
Ensure climate change strategic risk in Council Corporate Risk Register is expressed in terms of climate impacts	Complete
Use Adaptation Scotland's Capability Framework to guide action and track improvement	Annual assessment
No. of events organised with specific themes on climate change	5 events annually
Perceptions about climate change as a problem	Annually
Help develop Forth Valley Adaptation Partnership	2025

Theme 6: ECONOMIC DEVELOPMENT AND SUSTAINABLE PROCUREMENT

Industry emissions are by far the largest area of Clackmannanshire's carbon footprint - accounting for 56% of overall emissions in 2021. Given local authority's role as a service provider of economic development, a significant provider of contracts and being home to over 1,100 business who collectively employ tens of thousands of people, there is a major role for the Council in facilitating emissions reductions in this area.

Economic Development

Economic development has significant potential to contribute to sustainability and the mitigation of climate change; there are important opportunities to reduce environmental degradation and tackle inequality through introducing more efficient practices in existing organisations and encouraging the creation of new, small enterprises that enhance diversity in the business community and provide opportunities for community empowerment and delivery of 'green' goods and services.

The Scottish Government's [National Strategy for Economic Transformation](#) sets out an ambition to *"demonstrating global leadership in delivering a just transition to a net zero, nature-positive economy, and rebuilding natural capital."*

Some specific points in it and the Scottish Government's Programme for Government 2021-22 include:

- The Community Wealth Building Bill
 - enables more people and local communities to have a stake in, own, access and benefit from the wealth the Scottish economy generates
 - enhances the role that councils, health boards and other anchor public sector organisations play in supporting economic development and advancing a wellbeing economy
 - legislate for them to consider their economic footprint and role within a wider place system
 - Wellbeing Economy Framework, a toolkit to support local councils and regions across Scotland
- The Community Empowerment Act will be reviewed:
 - to consider how local communities can have greater influence over how local public assets are used
 - take on the ownership or management of land or buildings, community-based delivery of services, or more say in how assets are used, services are delivered and resources are allocated
- The Scottish Government's Climate Emergency Skills Action Plan 2020-2025 includes a priority to develop the future workforce for the transition to net zero.

It is a statutory requirement for some large businesses in the UK to calculate their carbon footprint, there will need to be a similar requirement for all enterprises at some point between now and the 2040s if net zero is to be achieved. Since both the UK and Scottish Governments have committed to net zero targets, this appears to be increasingly likely.

Furthermore, by virtue of gathered operational emissions data since 2013/2014, there is potentially a role for Clackmannanshire Council to support businesses through this process either directly or by signposting to funding opportunities for carbon accounting and developing emission reduction strategies.

Sustainable Procurement

The Scottish Government recognises that the climate criteria in public procurement exercises increases the ask of suppliers. Consequently, they developed a staged approach to the statements and guidance with the amount of information increasing over time, allowing suppliers to build their climate knowledge and capability. The Sustainable Procurement Tools can support buyers in embedding climate objectives into their procurements.

Alongside the Tools, this platform hosts Climate Literacy eLearning providing guidance to suppliers and Bidder Climate Change Plan Templates with guideline on how to populate it. They also recognise the need for upskilling procurement and economic development staff by providing Climate Literacy eLearning on the Sustainable Procurement Tools to boost their climate capability. There are also sections on each of Scottish Government's Climate Change Guidance documents including Climate and Energy, Carbon in Production, Vehicle Emissions and Climate Change Adaptation.

In line with the statutory guidance, it requires that before the Council buys anything, it must think about how it can improve the social, environmental and economic wellbeing of the area in which it operates, with specific guidance on economic, social, health-related and environmental factors.

A commodity or service strategy is required for all the Council's regulated procurements. It assists officers to:

- understand and scope requirements to achieve the optimum combination of whole life costs and quality to meet the end user(s) requirement
- and use a sustainability test to help maximise the positive impact that the procurement process can provide in terms of social, economic and environmental impact associated with the requirement

Additionally, as part of our Annual Procurement Report, we will be required to record the number of regulated contracts awarded during the reporting period that included a climate related requirement in addition to measuring our success on the climate emergence and sustainable economic recovery.

The utilisation of the Sustainable Procurement tools also contributes to carbon reducing initiatives under procurement of energy-using equipment (e.g. ICT, laboratory equipment, white goods, audio-visual and others) or the use of energy in the delivery of a service that is being procured (such as printing and professional services) including the following:

- Significant replacement of lighting with LEDs
- A further enhancement of our multifunctional managed print contract (3rd generation)
- Significant replacement of on premises storage of IT server space with Cloud Storage and off-site storage.

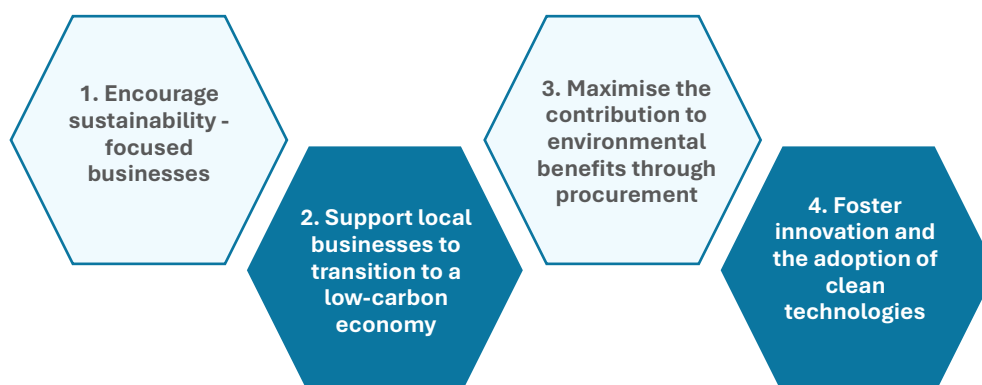
Construction procurements all follow standard terms and conditions which are industry standard and have embedded sustainability, energy and environmental considerations built in as standard including external wall insulations, roof and render upgrades.

Specific Scottish Government legislation to address sustainable procurement includes:

- Procurement Reform (Scotland) Act 2014 places a duty on the Council before carrying out a regulated procurement to consider how in conducting the procurement process it can improve the economic, social and environmental wellbeing of the area.
- Scottish Procurement and Property Directorate 3/2022 sets out more recent advice and guidance on taking account of climate and circular economy guidance in procurement. Key points include:
 - demonstrate how procurement is being used to support Scotland's response to the climate emergency
 - requiring evidence in public bodies' organisational procurement strategies of how climate and circular economy will be accounted for in procurement activity while reporting progress against commitments in annual procurement reports.

Our priorities

The Council is going to advance more the implementation of the sustainable procurement principles and contributing into the reduction of carbon emissions. The main actions for the next years will be focused on achieving 4 priorities:



Strategies underpinning this theme:

- National Strategy for Economic Transformation
- Community Wealth Building Bill
- Community Empowerment Act
- Climate Emergency Skills Action Plan 2020-2025
- Procurement Reform (Scotland) Act 2014
- Local Development Plan
- Local Outcome Improvement Plan
- Councils Procurement Strategy
- Wellbeing Economic Strategy
- Clackmannanshire Investment Strategy

What has Clackmannanshire Council done so far

Clackmannanshire Council's Local Development Plan includes a strategic objective centred on environmental sustainability. The LPD To deliver a sustainable pattern of development that supports community cohesion, reduces greenhouse gas emissions, supports waste minimisation and ensures that new development consistently contributes to environmental protection and enhancement by:

- ensuring that new development does not result in growth in Clackmannanshire's net greenhouse gas emissions;
- minimising the release of greenhouse gas emissions from natural sources including protection of carbon-rich soils, minimising waste and encouraging woodland expansion where appropriate;
- delivering a step change towards improved energy and water conservation and efficiency, and increasing the production of renewable energy to meet Government targets;
- adapting to the impacts of climate change by ensuring that new development is appropriately 'climate proofed' to remain resilient to predicted future climatic conditions and to protect existing development from the adverse effects of climate change;
- reducing overall flood risk and promoting sustainable flood management techniques;
- managing and reducing pollution, to contribute to the improvement of our air and water quality;
- safeguarding soil quality and quantity;
- minimising our waste and maximising opportunities for recycling, composting and efficient and sustainable disposal of residual waste.

Additionally, the Council's Economic Development Team works with partners, businesses and third sector organisations across Clackmannanshire to support economic growth, employability, skills development, and community wealth building. Specific work related to climate change that the team is undertaking includes developing projects in partnership with Business Support partners, including University of Stirling University and Business Gateway, to provide both group workshop sessions and 1-2-1 support to small and medium enterprises (SMEs) and third sector organisations to create a net zero or low carbon strategy or action plan, and to signpost businesses to green funding opportunities.

The Council has also adopted the National Procurement Journey as the Council Procurement Policy and our corporate procurement process. As part of this process, the Sustainable Procurement Duty is built into the Council’s tender authorisation forms which must be completed before any tender process commences.

In January 2019 the Council approved the Procurement Strategy and the Action Plan to comply with the requirements of the Procurement Reform (Scotland) Act. It also demonstrates how the Flexible Framework Self-Assessment Tool will provide a Sustainable Action Plan to establish the performance level of sustainable procurement across the council and commits to establishing systems to record the impact of procurement policies and practices. The Strategy and the action plan contain measure relevant to climate change:

- establish systems to record the impact of procurement policies and practices on the council's climate change duties;
- utilise the Scottish Government’s sustainable prioritisation tool to identify and prioritise procurement activity;
- utilise the Flexible Framework Self-Assessment Tool to provide a Sustainable Action Plan to establish the performance level of sustainable procurement across the Council;
- create and manage a sustainable register to capture, monitor and report on the sustainable outcomes achieved via procurement activity, and link to related internal and external reporting requirements.

The Council also works in very close collaboration with the Centre of Expertise for [Local Authorities Scotland Excel](#) in the development and use of national frameworks. All of their frameworks are aligned with the Scottish Sustainable Action Plan which encourages buyers to take a holistic view of the social, economic, environmental implications of the product or services.

Challenges

In the wake of the Covid-19 pandemic, there are many unknowns and significant challenges facing the UK economy. The Wellbeing Economy Strategy and LOIP provide an exciting opportunity to place Clackmannanshire at the forefront of the green recovery, delivering sustainable economic growth, and new green jobs, whilst significantly reducing carbon emissions. Annual funding and uncertainty around the amount of funds remains a major challenge across services. Moreover, supporting local businesses during the cost of living crises can be challenging at a time when businesses have multiple priorities.

KPI	Baseline Value	Interim Target	2045 Target
% of contracts awarded during the reporting period that included a climate related requirement	No data		
No. of grants awarded to reduce the climate impact	2024 12 annually	2030 20 annually	25 annually
No. of organisations attending workshops	2024 20 annually	2030 40 annually	100 annually
No. of organisations benefitting from Expert Help support	2024 8 annually	2030 20 annually	40 annually
No. of organisations developing a net zero or carbon reduction strategy or action plan	2024 8 annually	2030 20 annually	40 annually

Conclusion

The recent report by the Intergovernmental Panel on Climate Change highlights that action to mitigate and adapt to the effects of climate change is more urgent than ever with the 2020s to be the critical decade across society and the economy with a decisive shift from planning to action and rapid progress on decarbonisation. 116

Given this imperative and recent temperature records being broken in Scotland and around the world, Clackmannanshire Council has set out a bold and ambitious framework for achieving net zero greenhouse gas emissions by 2040 at the latest for the Council's own operations and by 2045 at the latest for the Clackmannanshire area.

It includes means of aligning all strategic decisions, budgets and approaches to planning decisions with a shift to net zero greenhouse gas emissions in addition to continuously identifying specific emission reduction opportunities under six themes that are being operationalised in the Climate Emergency Action Plan.

A series of Climate Change Forums have also been held across Clackmannanshire to empower young people, residents and businesses to contribute to and shape Clackmannanshire's net zero targets. Additional events will be undertaken to continue to involve communities in our climate change work.

The strategy also sets out the clear economic, financial, social and health based advantages of delivering net zero targets and the fact that these multi-faceted benefits are more important than ever within the context of the on-going cost of living crisis.

Climate Emergency Action plan

Theme 1: ENERGY, HEAT AND BUILDINGS

No.	Action	Priority	Lead	Partner	Timeframe for completion	Comments / Progress
1.	Develop a long-term investment programme to meet the Council's obligations in relation the Scottish Government's latest New Social Housing Net Zero Standard (SHNZS) decarbonisation targets as part of the review of the 30-year HRA business plan.	1, 2 & 5	Housing Team	Property Team	Short-term 2024 - 2026	The project is on-going and the team is waiting for the feedback from Scottish Government.
2.	Review of the Local Housing Strategy (LHS) based on the needs within Clackmannanshire of the current and future housing stock and compliance with the soon to be realised Social Housing Net Zero Standard (SHNZS).	1, 2 & 5	Housing Team		Short-term 2024 - 2026	Work has begun on the new Housing Needs and Demands Assessment (HNDA) and is expected to be completed in late 2025. This assessment will be predict the needs in the housing stock in future and aid in planning to ensure its energy efficiency.
3.	Strategic Housing Investment Plan (SHIP)	1, 2 & 5	Housing Team		Annually	The SHIP details planned new supply activity within the area for a 5 year forward planning period. The SHIP is reviewed annually, approval is to be sought at October 2024 Council on the latest updated SHIP. The SHIP will aid in identifying new housing stock which is due to come on line, early thought will be required to ensure it meets energy efficiency targets.
4.	Assess building fabric of properties held following Strategic Asset Management Strategy (AMS) review to determine appropriate insulation upgrade.	1, 2 & 5	Housing Team	Property Team	Short-term 2024 - 2026	
5.	Use the HRA business plan review to compile a list of sites where upgrades are required, in order of necessity.	1, 2 & 5	Housing Team	Business Improvement Team	Short 2024 -2026	Team leader for Housing Planned works and Compliance and Team Leader Business Improvement to collaborate on decision on what the preferred medium of heating is going forward: if it is to be heat pumps, we may have to contact the network operator to establish available electricity capacity in these areas should any increased supplies be required.
6.	Work on Tenant Participation Strategy to support the development of community and Council owned sustainable energy projects such as green retrofitting as part of ongoing- wider property restructure.	1, 2 & 5	Housing Team	Energy and Sustainability Team Property Team	Medium 2027 -2030	Team Leaders of Planned Works and Compliance and Business Improvement will tie in capital programme for heating renewable upgrades and new Tenant Participation Strategy with tenant scrutiny and engagement at heart of strategy. Heating Programme for Renewables requires extensive desktop survey and to be informed by HRA Business Plan Review and Regional Energy Masterplan. Trades resource to be trained to undertake installation and maintenance of renewables technology. Tenant engagement and education required to understand new technology and escalate recruitment challenges and skills gaps for the delivery of green retrofitting to Skills Development Scotland.

No.	Action	Priority	Lead	Partner	Timeframe for completion	Comments / Progress
7.	Reduce the carbon footprint, energy costs and increase efficiency within the public building stock, lighting designs to be drawn up for each building, with a view to replacing all older fittings with more energy efficient LED systems and possibly reducing the number of units required.	1 & 2	Property Team		Medium 2027 -2030	
8.	Use the stock condition survey information to compile a list of sites where upgrades are required, in order of necessity.	1 & 2	Property Team		Medium 2027 -2030	For public buildings there is a need to progress stock condition surveys and learning estate options appraisal review to enable base information to be available to inform forward plans for renewable heating installation.
9.	Development for a data led approach which entails understanding how the buildings and mechanical plant are used.	1	Digital Transformation	Property Team	Medium 2027 -2030	Research opportunities are at an early stage of development. This could be achieved through sensor-based monitoring of conditions (preferably over Internet of Things network) and analysis then presentation of data. This could be beneficial to both housing stock and public buildings since it allows client-led reductions through an app with a central monitoring point.
10.	Convert street light units (including switch gear - which consumes electricity) sodium lanterns to LED.	1	Roads and Street Lighting		Short 2024 -2026	The Council has 10,275 street light units (including switch gear - which consumes electricity) 94% of which have been converted from Sodium lanterns to high efficiency LED lanterns since 2015: the LED lanterns use approximately 30% of energy equivalent of the sodium units. Over the next 2 to 3 financial years, plans are being developed to convert the majority of the remaining sodium lanterns to LED.
11.	Provide an investment-focussed framework for the promotion and development of the region's renewable energy resources for sustainable economic growth through the Regional Energy Masterplan and link to the LHEES.	3, 4 & 5	Energy and Sustainability Team		Short 2024 -2026	
12.	Apply the recommendation of LHEES and accompanying Delivery Plan to reduce emissions from private buildings, tackle fuel poverty and contribute to net zero targets, by identifying area-based solutions, as well as identifying zones suitable for the development of heat networks.	3, 4 & 5	Energy and Sustainability Team	HSNU	Medium 2027 -2030 - Annual thereafter	
13.	Use the Energy Efficient Scotland Area Based Scheme (EESABS) partnership opportunities as a platform to develop collaboration with Registered Social Landlords and other homeowners to improve the energy efficiency and reduce carbon emissions from privately owned homes	1, 2 & 5	Energy and Sustainability Team		On-going	

Theme 2: LOW CARBON TRANSPORT

No.	Action	Priority	Lead	Partner	Timeframe for completion	Progress / Comments
1.	Implement the 'Connected Clackmannanshire' in order to further develop world class uninterrupted, well-maintained networks of segregated cycling, walking and wheeling routes that link our communities, schools and businesses. Ensuring better access to key services and public transport, and across Clackmannanshire.	1, 2, 3 & 4	Transportation Team		Medium 2027-2030	Cycling lane applications have been put into our City Region Deal application. Scottish Government are expected to provide an update in early 2023 which would allow a design to be undertaken. Other active travel plans include: -Alva to Menstrie 2023-2024 (completed 01/04/24) -Tillicoultry Town Centre and Connectivity 2024 -2025 (Implementation delayed by council decision until 2026/27) -Alva to Fishcross 2025-2027 -Dollar to Muckhart – TBC
2.	Review the Local Transport Strategy	1, 2, 3 & 4	Transportation Team	All services	Short-term 2024 -2026	
3.	Develop EV Strategy / Policy for EV Charging	1	Transportation Team		Short-term 2024 -2026	Forums have raised concern that the Council charge points are currently free as this is likely to put off private investment in EV charge points. - Charging scheme introduced July 2023. Attendees of the forum recommended overstay fees / increases in charges for overstaying to avoid misuse of charge points. - Overstay charge system introduced. Managed by CPS until Dec 2025
4	Update the Staff Travel Plan to facilitate travel to work based upon the sustainable transport hierarchy	2, 3 & 4	Transportation Team	HR Team	TBC	Property Contracts Unit trades operations requires to undertake full review of existing fleet to ensure fit for purpose with a view to decarbonisation of the fleet. Currently around 10% of fleet is electric. Kelliebank elec charging infrastructure is good with Property Electrical Team having worked to install a number of charging unit across the depot. Concern over adequacy of elec vehicles for trades operations standby works (out of hours working). Active Travel Project Manager in post in Transportation Team (Shirley Paterson) as of Jan 24.
5.	School Travel Planning - Help primary schools and full-time nurseries complete and update their plans year on year which promote active travel, the barriers and actions to help.	3 & 4	Transportation Team		On-going	
6.	Replacement of Internal Combustion Engine (ICE)	1	Fleet		3035	2 diesel driven roads sweepers have been removed from the fleet this month and will be replaced with two electric variants, CO2 savings are yet to be produced for this as the new variants are not yet part of the fleet. Charging infrastructure remains the same for Fleet vehicles with no additional charge points added this year. Discussions continue with management re the trial of HVO (Vegetable) fuels in our refuse collection vehicles, this will see a reduction of 90-95% CO2 omitted at the tailpipe.

No.	Action	Priority	Lead	Partner	Timeframe for completion	Progress / Comments
7.	Lock in behaviours beneficial to emission reduction that emerged in the COVID-19 lockdowns	1 & 4	Flexible Working Group	Transportation Team IT Services	Short-term 2024 -2026	<ul style="list-style-type: none"> Replacing business travel with videoconferencing and online collaboration and examining business miles being claimed by staff travelling to events and meetings by car, where public transport or online options are available. Ensuring that there is flexibility wherever possible for employee start and finish times to fit in with public transport. Develop hybrid and remote working arrangements with the statutory 20% reduction in car kilometres being taken into consideration Supporting the public transport and shared mobility sectors to recover from the Covid-19 pandemic; this should include providing positive communications and messaging to rebuild public confidence in the safety of public transport. Fully participate in Regional Transport Policy Develop and collaborate on projects with our neighbouring authorities to maximise skills, knowledge, experience and resources, for example the proposed the new Alloa Bridge that connects both Clackmannanshire and Stirling. Supporting digital infrastructure for residents to ensure that households across the Council area are able to work digitally.
8.	Support and promote cycling and ebike hire schemes/community pool fleets to encourage cycling for short everyday journeys	3 & 4	Transportation Team	Third party delivery partners	On-going	Signpost and support employers and communities to develop alternative and localised bike share schemes
9.	Improve the infrastructure around schools in order to make walking and wheeling to school attractive, fun and safe.	1, 3 & 4	Transportation Team		Medium 2030 - 2045	<p>Continue to review needs to schools and increase infrastructure and storage facilities where required. Continue to support cycling and walking campaigns for all school users, eg WOW campaign in partnership with Living Streets</p> <p>Continue to support cycling skills training in primary and primary 7 transition planning into secondary</p> <p>Expand active travel hubs within schools and communities</p>
10.	Continue to promote the Council's pool car services, pool bikes and explore other efficiency options	3 & 4	Transportation Team		On-going	
11.	Explore vehicle utilisation analysis to improve use of resources such as through use of the telematics system (fleet driven)	4	Fleet Team		On-going	
12.	Support and promote Car clubs in Clackmannanshire and potentially hiring of personal vehicles or hiring out car vehicles outside of Council hours.	4	Transportation Team		On-going	

No.	Action	Priority	Lead	Partner	Timeframe for completion	Progress / Comments
13.	Encourage staff to make car sharing connections within the Council and point staff and residents to free to use car sharing platforms such as Liftshare	4	Transportation Team		Medium	
14.	Enshrine the Council's ambition to develop active travel friendly principles in long-term Town Centre Masterplans to act as a regeneration blueprint that could transform town centres while making active travel a realistic option for residents while conserving town centres' heritage	1, 3 & 4	Planning Team	Transportation Team	On - going	
15.	Providing internal and external education reflecting the climate impacts of transport to support the transition to public and active transport.	4	Transportation Team	Energy and Sustainability Team	Short-term 2024 -2026	The Energy and Sustainability Team continue to contribute to discussions and to promote equalities in these discussions to ensure that decisions take account of vulnerable and disabled persons.
16.	Ensure that there is adequate information on the central bus and railway station and how they link in with the cycle routes with adequate signage.	2 & 3	Transportation Team		Short-term 2024 -2026	
17.	Pilot innovative 'warm-mix' emission saving initiatives for the construction of our roads infrastructure by using asphalt mixes that operate at lower temperatures and therefore reducing emissions.	1	Roads & Street Lighting		Completed	Two schemes were piloted with warm mix asphalt along with hot mix. Trials were successful, however there were challenges associated with ensuring successful deliveries of the warm mix whereas it was successful in the summer, it is uncertain as to whether the product would stand up in the winter. Challenges include higher costs per tonne, ability of manufacturer to produce on a large scale and there is no incentive from the Scottish Government to use this system.
18.	Encourage the local taxi drivers to shift towards low carbon vehicles	2 & 4	Energy and Sustainability Team	Licensing Team Taxi Forum Transportation team	On - going	Promote the importance of low emission vehicles to Taxi Forum. Introduce environment requirements in the new Taxi Policy.
18.	Recycling of road planings from resurfacing schemes in order to create RAP (Recycled Aggregate Product) that helps reducing the amount of bitumen.	1	Roads & Street Lighting	Hillhouse Quarries	On - going	Road recycling on the B9140 at Coalsnaughton, this is the second phase of works done in this way. There will be a reduction in carbon due to lesser number of vehicle movements
19.	Invest in in-situ recycling road resurfacing schemes to conserve natural mineral resources, reduce lorry movements, save energy and reduce impact on local community.	1	Roads & Street Lighting		On - going	Recycling scheme was adopted on A907 from 2021

No.	Action	Priority	Lead	Partner	Timeframe for completion	Progress / Comments
20.	Implementing long term asset management of the road network to ensure investment in the road networks maintain a steady state that supports the local economy, reducing emissions and energy costs associated with pothole repairs and emergency road closures due to low investment.	1	Roads & Street Lighting		On - going	
21.	Embedding biodiversity and environmental consideration when creating new active travel routes.	3	Transportation Team	Rangers Team	On - going	A recent example where the Council did this was Alva to Menstrie Cycle ways which have extra land to ensure wildlife conservation is improved by the project
22.	In new developments there is an expectation for high-quality active travel, EV infrastructure and connections to the bus network with the goal of creating '20-minute neighbourhoods' while being cognisant of how climate change impacts peoples' experiences of using public transport, such as in heat and flood risk areas.	4	Transportation Team	Planning Team	On - going	This approach is already embedded in the Transportation Team's work on large-scale developments

Theme 3: Waste, CARBON STORAGE AND AGRICULTURE

No.	Action	Priority	Lead	Partner	Timeframe for completion	Comments / Progress
1.	Diversion of biodegradable waste from landfill	1, 2 & 3	Waste Team	Stirling Council	2025	Stirling Council has entered into a contract with Cireco for the disposal of both Stirling's and Clackmannanshire's municipal waste at Earls Gate Energy Centre at Grangemouth. It is a 10-year deal with the option to extend and it commenced on 01 January 2024. It ensures that both Councils will be compliant with Scottish Government target by 2025.
2.	Implementing initiatives that contribute to Scottish Government's target to reduce waste sent to landfill by 5% by 2025.	1, 2 & 3	Waste Team		Short-term 2024-2026 / Medium 2027-2030	Changes to the waste collection service were introduced in October 2023, involving a move to 4 weekly refuse collections to drive recycling behaviour amongst residents and the introduction of a grey bin to facilitate the separate collection of paper/card from containers. This will improve the quantity and quality of recyclate collected and maximise its value.
3.	Establish links with businesses, residents, schools, community groups and other partners to reduce waste and increase recycling rates – particularly through the Curriculum for Excellence and the Eco-Schools Programme.	2 & 4	Waste Team	Energy and Sustainability Team	Short-term 2024-2026	Initial work on an audit of schools' recycling has been undertaken and is being collated by the Waste Team. The Energy and Sustainability team are working in partnership with the council's Planned Works and Compliance team to promote energy and savings within public school buildings. An energy savings competition has been developed in which all local schools have been participating. We have already seen substantial saving of approximately 36.26 tonnes of CO ₂ . The competition ends 31 st March 2024 and the winner will be announced in September 2024.
4	Produce videos to promote dry recycling and food waste recycling by households.	4 & 5	Waste Team	Organisational Development Team	Short-term 2024-2026	
5.	Work with schools to produce videos promoting recycling and climate change material including areas such as music	4	Waste Team	Energy and Sustainability Team Organisational Development	Short-term 2024-2026	The Ranger service is delivering a schools education programme in conjunction with Community Learning and Development. A training calendar is being developed for 24/25. The Climate Change Officers are in the process of liaising with Home Energy Scotland and the energy Savings Trust to develop energy efficiency and recycling training.
6.	Work with ACE and the Wee County Men's Shed volunteers to increase the amount of waste that is diverted to re-use at Forthbank Recycling Centre	1 & 3	Waste Team	ACE Wee County Men's Shed	On-going	
7.	Provide community groups and schools, upon request, with home composters and food waste digesters to produce a useful by-product (compost or digestate) while reducing the amount of waste that goes to landfill	2, 4 & 5	Waste Team	Energy and Sustainability Team	On-going	

No.	Action	Priority	Lead	Partner	Timeframe for completion	Comments / Progress
8.	Ensuring that all Council services such as Property and Housing services manage the waste that they generate more sustainably, seeking to maximise recycling at source and reduce the amount of residual waste requiring disposal at Forthbank Recycling Centre.	3	Waste Team	Property Team Housing Team	On-going	In line with changes to household waste collections in October 2023, improved recycling practices introduced in offices at Kilncraigs, the Speirs Centre and Kelliebank depot, as well as in all primary schools. New internal and external recycling containers were also provided. Recycling performance, in terms of quality and quantity, has improved as a consequence but there is still work to do.
9.	Reflect the circular economy as an economic model which will play a significant role in the transition to net zero in Council policies, reports and strategies.	2	Waste Team	Energy and Sustainability Team	Short-term 2024-2026	Council policies, reports and strategies to be sent to Climate Change Officers for comment.
10.	Undertake a waste audit of Council buildings and recruit Recycling Champions to improve awareness of recycling across different Council sites. Explore the potential to extend this scheme to schools and partner groups to share a 'blueprint' for increasing recycling in buildings and share material from organisations such as Zero Waste Scotland.	3 & 4	Waste Team	Energy and Sustainability Team	Short-term 2024-2026	
11.	Reduce food waste through implementation of the food waste hierarchy, raising awareness of waste and the redistribution of good nutritious food from all stages of the supply chain: farms to retail.	3, 4 & 5	Waste Team	Clacks Good Food Partnership Energy and Sustainability Team	On-going	Work with Clacks Good Food Partnership to set out targets. Hierarchy: <ul style="list-style-type: none"> - Prevention of waste through more care in buying, storage, prep, portion size and reuse - Redistribution of edible food (to people first, then to animals) - Recycling – compost - Recovery – as energy and only then disposal to landfill.
12.	Strive to contribute towards the Scottish Government's target for a recycling rate of 70% of all waste by 2025	2, 3 & 4	Waste Team	Energy and Sustainability Team	2025	Climate Change Officers working with HES and EST to promote good practice.

Theme 4: BIODIVERSITY, CARBON STORAGE AND AGRICULTURE

No.	Action	Priority	Lead	Partner	Timeframe for completion	Comments / Progress
1.	Fully commit and be a key partner in the Forth Climate Forest Initiative to increase tree canopy cover where possible, increase our carbon sequestration and improve our bio-diversity connectivity while recognising the impact that this would have on the area's net emissions while also and contribute to the Scottish Government's targets of 12,000 hectares of woodland being created annually.	1, 2 & 3	Environment Department	Energy and Sustainability team Forth Climate Forest	10 years	Forth Climate Forest initiative will help meet the Scottish Government's targets of 12,000 hectares of woodland being created annually. Increase tree canopy cover where possible, increase our carbon sequestration and improve our bio-diversity connectivity while recognising the impact that this would have on the area's net emissions.
2.	Undertake Net Negative emission / Carbon Sequestration quantification study.	2	Energy and Sustainability team	Forth Climate Forest SIEC	10 years	Identifying estimates how much carbon we sequester and how much land we have available to do so. Use this to create net figure (from gross emissions) of Clackmannanshire's emission in addition to estimate impact of net negative for tree planting, peat restoration, afforestation and rewilding projects while ensuring that the planting of trees is not to the detriment of other flora/fauna in the area
3.	Adopt a Council-wide approach to the conservation of biodiversity that further embeds biodiversity considerations into corporate & service plans, policies, strategies and operations is required so that all decision-making takes account of the potential impacts on local biodiversity.	1 & 3	All	Energy and Sustainability team	On- going	The Council adopted the Edinburgh Declaration 6 th October 2022.
4	Review the Council's local biodiversity action plan (LBAP) to include aims/objectives and actions which will help protect and enhance pollinator habitats and species.	1, 3 & 5	Energy and Sustainability Team	Biodiversity Partnership	Medium 2027-2030	
5.	To investigate and produce recommendations on the creation of a Pollinator Strategy and long-term plan and capacity to deal with the decline in pollinators.	1 & 4	Energy and Sustainability Team	Land Service Team	August 2024	The Energy and Sustainability Team has created the draft of the Pollinator Strategy 2024 -2029 and the Action Plan in collaboration with Planning, Land Service and Active Travel officer. The document will be out for consultation in July 2024. The Land Service in collaboration with the Countryside Rangers has managed to produce around 400 signage for the Pollinator Strategy.
6.	Explore ways of improving quality of water and soils and developing other measures to reverse biodiversity loss and habitat declines at other sites.	1	Energy and Sustainability Team	SIEC		

No.	Action	Priority	Lead	Partner	Timeframe for completion	Comments / Progress
9.	Review Council's Food Growing and Allotment Strategy	4 & 5	Energy and Sustainability Team	Clacks Good Food Partnership	January 2025	The Energy and Sustainability team received the recommendation from Clacks Good Food Partnership
10.	Ensure biodiversity is entrenched into Town Centre Masterplans and site development briefs to include the availability of greenspace, parks linkages and greening options through a place-based lens.	1, 2 & 3	Planning Team	Energy and Sustainability Team Land Services Road and maintenance	Short-term 2024 -2026/ On-going	Examples include: - pushing towards designing places with biodiversity in mind; - hedgehog holes in fences; - bat bricks in houses; - wildflowers and hedge planting.
11.	Collaborate with planning colleagues to consider means of greening towns through tree planting, food planting and post of nectar rich flowers as 'Islands' that allow pollinators a link from one bigger site to another (like Island hopping) through future LDP Review and the preparation of Masterplans and Site Briefs.	1, 2, 3 & 4	Planning Team	Energy and Sustainability Team Land Services	Short-term 2024 -2026/ On-going	
12.	Approve Local Nature Conservation sites and subsequently considered while approving new building sites.	1 & 2	Planning Team	Energy and Sustainability Team	Short-term 2024 -2026	

Theme 5: ADAPTATION, PLANNING AND ORGANISATIONAL CAPACITY

No.	Action	Priority	Lead	Partner	Timeframe for completion	Comment / Progress
1.	Review 'Sustainability Considerations' to ensure compliance with net zero targets.	4	Energy & Sustainability Team	Legal Services All	Short-term 2024 -2026	This will entail: <ul style="list-style-type: none"> • Prioritise all decisions on new infrastructure investment based on their contribution to an inclusive net zero carbon economy. • Make the climate emergency a guiding principle in all planning decisions while involving climate experts in planning. • Strongly reflect climate change in all committee reports. • Reflect the Edinburgh Declaration in Committee Reports
2.	Agree as a Council to align spending plans and the use of resources to contribute to reducing emissions and while not pursuing high-carbon initiatives that would jeopardise net zero such as new roads while adapting capital bid processes and revenue budgeting to account for the requirement to reduce carbon.	3 & 4	Climate Emergency Board		On-going	
3.	Respond to input from the Climate Change Forums with the following actions: <ul style="list-style-type: none"> • Create a quarterly 'Climate Clacks' newsletter, • Create an 'Over to You' section on the Council's website with recommendations for individual action • Hold theme-specific events for engagement, starting with engagement events on the consultations of the REM, Pollinator Strategy and Climate Change Strategy. 	1 & 3	Energy & Sustainability Team		On-going	The Climate Change Strategy has been out for consultation, and we are now carrying out an Strategic Environmental Assessment. Once this exercise is completed, the strategy will be taken to Council for approval. The REM and the LHEES was approved by Council on the 30th of October 2023. The Pollinator Strategy is being prepared for consultation.
4.	Delivering 20-Minute Neighbourhoods	3	Planning Team	Transportation Team	On-going	
5.	Evergreen Investment Fund. Following the Housing Business Plan Review and Stock Condition Survey, explore front-loading spending on retrofitting and energy efficiency to make significant long-term cost savings that could more than pay for themselves while reducing emission on the Council's portfolio. These savings could then be re-invested into an evergreen fund for other cost savings.	2 & 3	All services		TBC	
6.	Facilitate adaptation to climate change by considering the flood risk and protecting the natural capital in major spending and planning decisions.	2 & 3	Transportation Team		On-going	

No.	Action	Priority	Lead	Partner	Timeframe for completion	Comment / Progress
7.	Press for divestment from fossil fuels including through the public sector pension fund.	3 & 4	Energy & Sustainability Team		Short-term 2024 -2026	In March 24 the Energy and Sustainability Team met with the Pensions rep. at Falkirk LGPF to agree a date for the Council to present its case for Divestment. A date has been set for us to attend their meeting on the 27th June 2024.
8.	Establish a Carbon Budget for Clackmannanshire's emission trajectories to net zero and monitor performance against it in conjunction with interim emission reduction targets leading up to 2040.	4	Energy & Sustainability Team		Short-term 2024 -2026	On-going – this will be updated for the SEA. Carbon accountancy is resource intensive, and this requires to be discussed with Senior Management to ensure that adequate resources are in place.
9.	Explore using Adaptation Scotland's benchmarking tool to undertake an adaptation assessment to identify a baseline for the Council and allow progress in relation to adaptation measures to be tracked, the identification of gaps and potential areas for future progress.	2, 3 & 4	Energy & Sustainability Team		Short-term 2024 -2026	A meeting was held with Adaptation Scotland reps to discuss how to become part of The Public Sector Climate Adaptation Network
10.	Invest in digital infrastructure, innovative use of data, digital skills, universal access to digital public services and locking in positive trends and behaviours from the Covid-19 pandemic.	1 & 3	Housing Team	Digital Transformation Team	Medium 2027 –2030	This includes the new housing and property IT business management system to be realised with implementation commencing in 2023 and completed by 2025.
11.	Provide universal access to climate education, literacy, and learning while creating a communications link for employees from all areas of the council to escalate emission savings and cost savings ideas.	1	Energy & Sustainability Team	Keep Scotland Beautiful	Short-term 2024 -2026/ On-going	As the Audit Office Report on Addressing Climate Change in Scotland notes "clearer information on the environmental impact of people's choices is needed for all of us to make informed decisions, particularly around sustainable diet, waste, and travel." . This action could include: <ul style="list-style-type: none"> • school resources • resident emission reduction ideas (waste, recipes, food charter, energy savings etc.) • business resources and links Our Climate Change and Energy Officer/s and Rangers are developing a training programme for the community/schools as well as developing opportunities for Council staff. KSB with the coordination of the Energy + Sustainability Team delivered Climate Emergency training focused on Clackmannanshire area. Around 25 employees participated in the training.
12.	Develop an internal communications plan for climate action and associated 'brand' for staff to recognise and work towards including a way for all staff members to escalate their ideas for decarbonisation and cost saving opportunities to the Energy and Sustainability Team	1 & 4	Energy & Sustainability Team	Comms Team	Short-term 2024 -2026	

No.	Action	Priority	Lead	Partner	Timeframe for completion	Comment / Progress
13.	Callout for voluntary Green Champion roles across service areas to help normalise Climate Change and Sustainability practices across the Council. <ul style="list-style-type: none"> • Recycling Champions • Lift Share / Active Travel Champions 	1 & 4	Climate Emergency Working Group	Energy & Sustainability Team	Short-term 2024 -2026	
14.	Embed climate change adaptation considerations, and potential responses such as habitat networks and green networks, into planning decisions using Forestry and Woodland Strategies, the Policies of National Planning Framework 4, regional land use strategies, including the Regional Spatial Strategy, the Local Development Plan and development masterplans	2 & 3	Planning Team	Energy & Sustainability Team Forth Climate Forest	Short-term 2024 -2026 / On-going	
15.	Integrate wording on Council Job Descriptions for net zero and Climate Change duties	4	Energy & Sustainability Team	Organisational Development	Complete	
16.	Alloa town centre and Forthbank Transformation Zone: Build place-based integration of capacity, services, investment and infrastructure to improve community and economic resilience. Partnership working on upstream preventative approaches. Focus on Alloa town centre and Forthbank	3	Planning Team	All services	Medium 2027 –2030	
17.	Review the Council’s Local Development Plan	2, 3 & 4	Planning Team		Medium 2027 –2030 / Long 2030 - 2045	
18.	NPF 4: Consider projected heat spots of climate change impacts in Clackmannanshire and opportunities for greening and resilience through local wildlife pathways, tree planting and food planting	2 & 3	Planning Team	SIEC	Medium 2027 –2030 / Long 2030 - 2045	

Theme 6: ECONOMIC DEVELOPMENT AND SUSTAINABLE PROCUREMENT

No.	Action	Priority	Lead	Partner	Timeframe for completion	Comments/ Progress
1.	Review the Council's Procurement Strategy to identify conflicts or ambiguity with climate change targets and amend as required .	1 & 3	Procurement Manager		Annually	
2.	Explore procuring green energy.	3 & 4	Place Service		Long term 2030-2045	At present the council is committed to use the Scottish Procurement Supply of Electricity Framework .
3.	Commit to procuring good food such as in the Government's Eatwell Guide due to the significant health and emission reduction potential, particularly in schools.	3	Place & People Services	Scottish Excel	Long term 2030-2045	At present the council is committed to use: <ul style="list-style-type: none"> - Scotland Excel's Fresh Bread, Rolls and Bakery Products Framework - Scotland Excel's Fresh Meats, Cooked Meats and Fresh Fish Framework - Scotland Excel's Frozen Foods Framework - Scotland Excel's Groceries And Provisions Framework
4	Devise procurement strategies and frameworks that allow space for local procurement to increase, in order to provide local investment in our economy, increased market share of contracts and projects and investment in our Clackmannanshire employment base.	1	All Services		Short term 2024 -2026	Council continues to develop networks of support for suppliers seeking to tender for Council contracts. The Council will attend the annual Supplier Development Programme "Meet the Buyer" event with more than 1,000 suppliers in attendance. The Clackmannanshire Wellbeing Hub project is also working to ensure that local businesses benefit from contract opportunities, ensuring Community Benefits include reductions in carbon consumption through transport of goods and people and the increased rollout of net zero action plans by suppliers.
5.	Public bodies can lead the way through developing procurement frameworks and contracts with specific environmental requirements and with developing and maintaining standards / regulation thus building on the existing sustainable procurement duties placed on public bodies	1, 3 & 4	All Services		Short term 2024 -2026	
6.	Explore requirements of procurement processes and business support to prioritise businesses with emission reduction plans.	1 & 3	All Services		Short term 2024 -2026	
7.	Continue to explore options to securing funding to support businesses with carbon accounting, establishing net zero targets and decarbonisation.	2	Economic Development	Business Gateway University of Stirling Zero Waste Scotland	Ongoing	Using UKSP funding, a framework of consultants has been set up to support businesses with net zero ambitions. 4 consultants are on the framework and are meeting with the Business Gateway team week beginning 15 April. Businesses will be referred to the support via Business Gateway or Ec Dev team. The framework is available from 1 April for 12 months (to 31 March 2025). We aim to support around 15-20 businesses with up to 3 days of expert help (net zero consultancy support). UKSPF is also funding a series of 4 workshops which are being delivered by University of Stirling and Zero Waste Scotland for Clackmannanshire organisations. These workshops will introduce

No.	Action	Priority	Lead	Partner	Timeframe for completion	Comments/ Progress
				Energy & Sustainability Team		organisations to the Climate Action Hub (a Scottish Business Climate Collaboration Toolkit), supporting them to register and use the toolkit and work through the modules, leading to carbon measurement and a net zero action plan. 12 organisations attended the first event on 1st March and next two events are scheduled as follows: Cochrane Hall 10th April - https://ClacksApr10NZ.eventbrite.com Alloa Town Hall 24th April - https://ClacksApr24NZ.eventbrite.com Employer event which took place on 1 February 2024 with a theme of net zero attracted around 25 organisations. This event outlined funding and support available to businesses and introduced the new framework (above) and the series of net zero workshops (above). Environmental pledge approved within the Good Employment Charter, and a sub group of the Anchor Partnership has now been set up to look at the roll out of the Charter across Clackmannanshire.
8.	Continue to develop the environmental element of the Good Employment Charter to encourage employers to develop plans to reach net zero.	1	Economic Development	Energy and Sustainability Team	Short 2024 -2026	
9.	Explore the development of a Carbon Charter with a Green Pledge and carbon certification for businesses	1	Economic Development	Energy and Sustainability Team	Short 2024 -2026	
10.	Respond to businesses' input at the Climate Change Forums and developing demand-led initiatives such as: - hosting green networking events; - identifying green businesses as role models for other organisation exploring emissions reductions; - escalating green skills gaps to learning providers and Scottish Government to maximise economic productivity; - explore potential through the funding through the Flexible Skills programme and the SIEC.	1, 2, & 4	Economic Development	Energy and Sustainability Team SIEC	Short 2024 -2026/ Medium 2027 –2030	Net zero employer event planned for 1 February 2024, with attendance from our sustainability team – this will help us identify business challenges and issues around net zero and help inform future support, as well as our own support (Expert Help and Workshop programme)
11.	Securing funding for or signposting to partner organisations' energy reduction initiatives.	2	Economic Development	Business Gateway	On-going	Partner organisations attending our employer event to outline support available.
12.	Explore making business support conditional to ensure that companies align with the transition to net zero.	2	Economic Development		On-going	