
Report to Council

Date of Meeting: 11 August 2022

Subject: Climate Change Strategy and Net Zero Targets

Report by: Strategic Director (Place)

1.0 Purpose

- 1.1. On Thursday 19th August 2021, Clackmannanshire Council unanimously passed a motion declaring a climate emergency, recognised that climate change is one of the most serious challenges facing communities in Clackmannanshire and agreed to develop a comprehensive Climate Change Strategy that will deliver 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.
- 1.2. This report sets out key recommendations for climate change mitigation and adaptation and a comprehensive review of Clackmannanshire Council's Climate Change Strategy.

2.0 Recommendations

- 2.1. It is recommended that Council agrees to :
- 2.1.1 Set a target for the Council's own operations to reach net zero greenhouse gas emissions by 2040 at the latest and set interim targets leading up to 2040.
- 2.1.2 Set a target for the Clackmannanshire area to reach net zero greenhouse gas emissions by 2045 at the latest.
- 2.1.3 Establish an internal Climate Emergency Board and approve the terms of reference that is set out in Appendix B.
- 2.1.4 Establish community-focused Climate Change Forums, in line with the Council's Decision making framework, and approve the terms of reference that is set out in Appendix C while noting that the terms of reference will be approved and potentially amended by the Forums.
- 2.1.5 Agree the approach and timescales to further develop the Interim Climate Change Strategy in Section 3.20 to Section 3.22 including the creation of the Climate Emergency Action Plan.
- 2.16 Note the Interim Climate Change Strategy set out in Appendix E.

3.0 Considerations

Statutory Considerations

- 3.1. The UK and Scottish Governments have both set legally-binding targets to reach net zero greenhouse gas emissions by 2050, under the 2019 amendment of the 2008 Climate Change Act, and 2045, under the Scottish Government's Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, respectively.
- 3.2. The Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Amendment Order 2020 requires that from November 2022 Public Bodies' Climate Change Duties (PBCCD) reports, including Clackmannanshire Council's, include:
- a target date for achieving zero direct emissions of greenhouse gases;
 - targets for reducing indirect emissions of greenhouse gases;
 - how the body will align its spending plans and use of resources to contribute to reducing emissions and delivering its emissions reduction targets;
 - 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.
- 3.3. Key expectations within the legislation also include;
- *Governance*: 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.
 - *Finance*: climate change must be integrated into financial planning and reporting.
 - *Reporting*: public bodies must consistently, accurately and transparently report all Scope 1 & 2 emissions and all relevant and significant Scope 3 emissions.
 - *Accountability*: it is recommended that climate change targets should be a board level KPI and if targets are missed, a corrective action plan is required.
- 3.4. Additional climate change targets that apply to public bodies include the following:
- Zero direct emissions by 2045 at the latest, including 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.

- All new fleet cars and light vehicles must have zero emissions by 2025 and larger new vehicles by 2030.
- No biodegradable municipal waste to landfill by December 31 2025.
- Air travel should be minimised and mainland UK air travel should be eliminated. Where air travel is unavoidable it is recommended that the passenger class is the most efficient in terms of emissions (e.g. economy class as default).¹

Recent Clackmannanshire Council Climate Action

- 3.5 On Thursday 19th August 2021, Clackmannanshire Council unanimously passed a motion declaring a climate emergency, recognised that climate change is one of the most serious challenges facing communities in Clackmannanshire and agreed to develop a comprehensive Climate Change Strategy that will deliver 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.
- 3.6 The Council's General Services Revenue and Capital Budget 2022/23 set out an increased focus on green investment to support the Council's journey to net zero and noted that the updated Climate Change Strategy will 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. Specifics on the alignment of the Council's Capital Programme and green investment can be found in Appendix A.
- 3.7 Carbon literacy training is scheduled for councillors and senior managers at the Council to outline the science underpinning climate change and its relevance to the well-being of residents and businesses in Clackmannanshire.
- 3.8 Additional on-going climate change mitigation and adaptation initiatives include the development of a Regional Energy Masterplan, a review of property assets and shared assets, initiatives to make schools, homes and buildings more energy efficient, the electrification of the council fleet and numerous other emission reduction projects.
- 3.9 The Climate Change Strategy will contribute to delivering and supporting the aspects of a place that enable the wellbeing of those who live, work and relax in Alloa and the wider Clackmannanshire Council area.

Clackmannanshire Council's Current Carbon Footprint

- 3.10 Areas that contribute most to Clackmannanshire Council's 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 present means of increasing the carbon storage potential of nature, entrenching climate resilience and reducing net emissions.

¹ See Briefing Paper: New PBCCD Reporting Guidance for 2022 December 2021 for further information https://www.sustainabilityexchange.ac.uk/files/briefing_paper_-_public_sector_leadership_on_the_global_climate_emergency_2021.pdf

- 3.11 Clackmannanshire Council has completed annual reports for the PBCCD from the financial year of 2013/14 to 2020/21. The next iteration will cover the financial year of 2021/22 and is due to be submitted on 30 November 2022.
- 3.12 While the overall emissions do not yet include some significant areas of the Council's carbon footprint such as waste, they have shown a year-on-year reduction in greenhouse gas emissions with the a decrease from 9,767 tonnes of Carbon Dioxide equivalent (tCO₂e) in the baseline year of 2013/14 to 5,045 tCO₂e in 2020/21 or a reduction of 48.34%².

Recommended Mechanisms for Internal Climate Action

- 3.13 A Climate Emergency Board with elected officials from each political party and senior officers from across key Council service areas will be required to establish and implement the net zero targets in recommendations A and B in Section 2 of this report. A draft Terms of Reference for the Climate Emergency Board can be found in Appendix B.
- 3.14 Publication of a Climate Emergency Action Plan by the Climate Emergency Board will ensure that cost-saving and resource efficiency initiatives are exploited while also rendering the Council investment-ready to secure additional funding to deliver against climate targets and create high-value green jobs.

Recommended Mechanisms for External Climate Action

- 3.15 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.³
- 3.16 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 including:
- Strengthening energy networks to improve energy security and reduce costs for residents and businesses.
 - Delivering low-carbon retrofits to alleviate fuel poverty and reduce costs to help tackle the rising cost of living.
 - Reducing waste and achieving cost savings by moving towards a circular economy.
 - Supporting businesses in reducing their costs while decarbonising.
 - Improving air quality, delivering negative emissions and providing resilience to climate-related disturbances through tree planting, pollinator and biodiversity-focussed initiatives.

² See Appendix D for further details

³ See <https://www.theccc.org.uk/publication/2022-progress-report-to-parliament/#key-messages>

- Improving infrastructure for walking, cycling, remote working and public transport.
 - Promoting and supporting community food growing.
- 3.17 A thematic approach to the development of an updated Climate Change Strategy has been identified to maximise the financial, economic and social benefits of a transition to net zero. It includes the following themes:
- Energy, Heat and Buildings
 - Low-carbon Transport
 - Waste, Recycling and the Circular Economy
 - Biodiversity, Carbon Storage and Agriculture
 - Adaptation, Planning and Organisational Capacity
 - Economic Development and Sustainable Procurement
- 3.18 In addition to internal management, the establishment of Climate Forums will provide a space for dialogue between businesses, young people, residents of Clackmannanshire and the Council so meaningful ideas and feedback can be provided to shape the Council's climate change mitigation and adaptation targets. The initial meeting will take place in August/September 2022.
- 3.19 The Climate Change Forums will also catalyse collaboration on green initiatives between the Council and other partners such as Scotland's International Environment Centre (SIEC) - particularly their Young Pathfinders programme -, Business Gateway, the Improvement Service, Inner Forth Futures, CTSI and other partners.

Next Steps

- 3.20 The immediate steps to delivering on the recommendations in this report will be for the Climate Emergency Board to:
- identify a new baseline for Clackmannanshire Council's own emissions;
 - create interim targets leading up to net zero by 2040;
 - and create actions under the themes set out in Section 3.17 to enable the development of a Climate Emergency Action Plan within 6 months.
- 3.21 Input from the Climate Change Forums will be central to shaping the pathway to net zero, identifying and creating actions under each theme in the Climate Emergency Action Plan and providing feedback for the finalisation of the Interim Climate Change Strategy. The Strategy and/or the Climate Emergency Action Plan will then be used as a basis for wider consultation in early 2023.
- 3.22 Progress on emission reductions will be measured in the PBCCD report while a communications plan will be integrated into the Climate Emergency Action Plan to embed understanding, responsibility and accountability for climate change targets throughout all council services.

4.0 Conclusions

- 4.1. This report sets out the mechanisms required to comply with climate change legislation and achieve the recommendations in Section 2 of this report by developing a thematically-based Climate Change Strategy that incorporates an updated benchmark of Clackmannanshire's direct emissions, sets out pathways to achieving net zero in direct and indirect emissions in addition to identifying adaptation opportunities. Progress will be measured through the annual Public Bodies' Climate Change Duties report and the delivery of actions within a Climate Emergency Action Plan while initial consultation will be undertaken during the Strategy's development through the Climate Forums.

5.0 Sustainability Implications

- 5.1. The action taken aligns with the Council's aims to meet its sustainability, climate change and biodiversity duties.

6.0 Resource Implications

- 6.1. Climate change actions are currently managed within existing resources. Future initiatives will be dependent on available funding and resources which will be reviewed over time and where necessary will go through governance processes.

6.2. *Financial Details*

- 6.3. The Council's General Services Revenue and Capital Budget 2022/23 set out an increased focus on green investment to support the Council's journey to Net Zero and noted that the updated Climate Change Strategy will 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.

- 6.4. The full financial implications of the recommendations are set out in the report. This includes a reference to full life cycle costs where appropriate.

Yes

- 6.5. Finance have been consulted and have agreed the financial implications as set out in the report.

Yes

6.6. *Staffing*

7.0 Exempt Reports

- 7.1. Is this report exempt? Yes (please detail the reasons for exemption below) No

8.0 Declarations

The recommendations contained within this report support or implement our Corporate Priorities and Council Policies.

(1) **Our Priorities** (Please double click on the check box)

- Clackmannanshire will be attractive to businesses & people and ensure fair opportunities for all
- Our families; children and young people will have the best possible start in life
- Women and girls will be confident and aspirational, and achieve their full potential
- Our communities will be resilient and empowered so that they can thrive and flourish

(2) **Council Policies** (Please detail)

9.0 Equalities Impact

- 9.1 Have you undertaken the required equalities impact assessment to ensure that no groups are adversely affected by the recommendations?
Yes No

10.0 Legality

- 10.1 It has been confirmed that in adopting the recommendations contained in this report, the Council is acting within its legal powers. Yes

11.0 Appendices

- 11.1 Please list any appendices attached to this report. If there are no appendices, please state "none".
- Appendix A – Green investment through Clackmannanshire Council’s Capital Programme
- Appendix B – Terms of Reference, Climate Emergency Board
- Appendix C – Terms of Reference, Climate Change Forums
- Appendix D - GHG Emissions Data: Where Clackmannanshire Council is Now
- Appendix E – Interim Climate Change Strategy

12.0 Background Papers

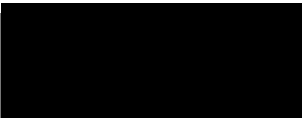
12.1 Have you used other documents to compile your report? (All documents must be kept available by the author for public inspection for four years from the date of meeting at which the report is considered)

Yes (please list the documents below) No

Author(s)

NAME	DESIGNATION	TEL NO / EXTENSION
Robert Seale	Climate Change & Energy Officer	Extension : 2697

Approved by

NAME	DESIGNATION	SIGNATURE
Pete Leonard	Strategic Director (Place)	

Appendix A

Green investment through Clackmannanshire Council's Capital Programme

<https://www.clacks.gov.uk/document/meeting/127/1138/7304.pdf>

	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	Total 2027-32	Total 2032-37	Total 2037-42	20 year Total
	£'000	£'000	£'000	£'000	£'000	£'000	£'000	£'000	£'000
Innovation Hub	200	1,164							1,364
Delivery City Deal (RPMO)	100	100							200
Renewable Energy Projects	30								30
Active Travel Route Railway Station	0	560							560
Flood Protection	57	235	86	86	86	430	430	430	1,840
Tillicoultry Flood Protection	0	150	250	300	2,500	2,800			6,000
Building energy management system	32	8							40
Cycle Routes	222	100	100	55					477
Active Travel Route	0	2,000							2,000
Street Lighting Replacement	258	258	258	258	259	1,297	1,303	1,305	5,196
Vehicle Replacement	563	800	1,000	1,000	1,000	5,000	5,000	5,000	19,363
TOTAL	1,462	5,375	1,694	1,699	3,845	9,527	6,733	6,735	37,070

Appendix B

Terms of Reference

Climate Emergency Board

1. Role/Purpose

The role of the Climate Emergency Board is fourfold:

- to create, implement and own annual greenhouse gas emission reduction targets for Clackmannanshire Council's own operations with net zero being reached by 2040 at the latest;
- to support and facilitate greenhouse gas emission reduction targets for the Clackmannanshire area with net zero being reached by 2045 at the latest;
- to take action to improve Clackmannanshire's preparation for and resilience to the impacts of Climate Change;
- To produce and implement an updated Climate Change Strategy and Climate Emergency Action Plan with the latter containing actions under each of the following themes:
 - o Energy, Heat and Buildings
 - o Low-carbon Transport
 - o Waste, Recycling and the Circular Economy
 - o Biodiversity, Carbon Storage and Agriculture
 - o Adaptation, Planning and Organisational Capacity
 - o Economic Development and Sustainable Procurement

Initially, the Climate Emergency Board will establish a more comprehensive baseline of emissions from the Council's own operations, such as the inclusion of waste and net negative emissions from land-management, before identifying emission reduction actions to populate the six themes of the Climate Emergency Action Plan.

Specific opportunities and challenges for achieving net zero across different service areas will be identified and used to create interim emission reduction targets. Following the creation of the trajectories for net zero targets, feedback will be received on them, the Draft Climate Emergency Action Plan and the Interim Climate Change Strategy from the Climate Forums.

The finalised net zero pathways will be incorporated into and shape the first draft of the Council's updated Climate Change Strategy.

The draft strategy will then go out for broad consultation including with schools and youth groups.

The Climate Emergency Board will be accountable for the operational delivery of the Climate Emergency Action Plan, the updated Climate Change Strategy and emissions reduction targets. The 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.

This will entail having elected officials from each of the political parties at Clackmannanshire Council represented on the Board in addition to senior managers who will be accountable for specific targets in their corresponding service area.

The PBCCD report will provide means of quantifying and publishing the Council's emissions following the establishment of an updated baseline and emission reduction pathways to net zero.

The Climate Emergency Board will therefore be able measure progress by each service area and will ensure that climate change targets and objectives are being met.

Additional actions will be iteratively developed, agreed to, then allocated to their relevant service areas, with the Climate Emergency Board assessing the feasibility of delivering such action(s); the agreement of timelines for their delivery, and the operational details of achieving the action(s). This will be a continually evolving process with actions and progress being recorded in the Climate Emergency Action Plan.

2. Term

This Terms of Reference is effective from August 2022 and is anticipated to continue until net zero targets have been achieved.

It is recommended that the Climate Emergency Board holds sufficient meetings in order to establish the Council's baseline emissions, create a thematically-based Climate Emergency Action Plan and create an updated Climate Change Strategy by early 2023 with support from the Energy and Sustainability Team.

Following the publication of the Climate Change Strategy, the Climate Emergency Board will meet on a quarterly basis and will receive input from external bodies, particularly the Climate Change Forums, who will provide support, advice and feedback on delivering climate change targets and emerging opportunities for the Climate Emergency Action Plan.

Meeting agenda minutes will be provided by the Energy and Sustainability Team. This includes:

- preparing agendas and supporting papers
- preparing meeting notes and information.

Subgroups and advisory groups that could support the operational achievement of emissions reduction targets include:

- Clackmannanshire Climate Change Forums
- Clackmannanshire Council Energy Management Group
- Clacks Good Food Partnership

3. Membership

The Network Group/Advisory Group will comprise of:

- Councillor Fiona Law, Spokesperson for Environment and Net Zero (chair)
- Councillors from other political parties at Clackmannanshire Council
- Strategic Director of Place
- Senior Manager (Development)
- Senior Manager (Environment)
- Senior Manager (Housing)

- Senior Manager (Property)
- Senior Manager (Education)
- Senior Manager (Care and Protection)
- Energy and Sustainability Team Leader
- Procurement Manager
- I.T. Manager
- H.R. Manager
- Climate Change and Energy Officer
- Other Officers / External Partners as required

Appendix C

Terms of Reference

Climate Change Forums

1. Role/Purpose

The purpose of Clackmannanshire's Climate Change Forums is to provide a space for dialogue between young people, residents, businesses and the Council in each of the five wards in Clackmannanshire in order to contribute to local environmental targets.

With the upcoming creation of the Council's Climate Emergency Action Plan, the revision of the Council's Climate Change Strategy and subsequent consultation on the Strategy, it is crucial that the public have the chance to contribute to Clackmannanshire's journey to becoming a carbon-neutral area.

The Forums' approach to engagement will be shaped by the five categories of participation in the Public Participation Spectrum: Inform; Consult; Involve; Collaborate and Empower¹ while also drawing upon the Guiding Principles from the Scottish Government's Public Engagement Strategy for Climate Change (see the table below).

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 actions²

Key strategic objectives of the Forums include the following:

- To hold regular public meetings around Clackmannanshire to engage young people, businesses and residents and promote local climate and biodiversity action.
- To open a two-way dialogue with local communities and organisations where people can voice their ideas and issues and the council can disseminate information and updates.
- To gather input and feedback that will shape the Climate Change Strategy and Climate Emergency Action Plan.
- To increase carbon literacy across Clackmannanshire.
- To have a robust communications plan that runs alongside the Forums to promote and further engagement.

¹ IAP2 (2018) Spectrum of Public Participation

https://cdn.ymaws.com/www.iap2.org/resource/resmgr/pillars/Spectrum_8.5x11_Print.pdf

² Scottish Government (2021) *Climate change - Net Zero Nation: public engagement strategy*

<https://www.gov.scot/publications/net-zero-nation-public-engagement-strategy-climate-change/documents/>

- To develop a local network of Community Climate Champions and Business Climate Champions that will work with the forums to promote climate engagement and awareness.
- To investigate and produce recommendations on the creation of a Pollinator Strategy and long term plan to deal with the decline in pollinators.

2. Aims

The pre-commencement aims of the Forums are:

- Establish the Forums and engage partners who are interested in learning more about / contributing to emissions reduction targets in Clackmannanshire.
- Promote the Forums to a wide audience and consider how the Council can respond to input from partners and facilitate decarbonisation in Clackmannanshire.
- Schedule dates and venues for the first meetings.

The short-term aims of the Forums (0-6 months) will be:

- Host the first round of forums to gather input for Clackmannanshire Council's Climate Emergency Action Plan and Climate Change Strategy.
- Highlight benefits to business of going green including cost savings, access to funding and increased marketing and networking opportunities.
- Recruit individuals and organisations to be Climate Champions.
- Agree means of ensuring that the Forums are having an impact such as a published list of recommendations or an integrated action plan with actions for attendees.
- Monitor attendance and feedback and respond to input.

The medium / long-term aims of the Forums (6+ months) will be:

- Continue hosting regular forums to facilitate dialogue on climate change between young people, residents, businesses and Clackmannanshire Council with input and feedback from the forums continuously disseminated into the Climate Emergency Board.
- Provide updates on the Council's progress on the delivery of actions from the Climate Emergency Action Plan and Climate Change Strategy.
- Gather feedback and ideas from young people, residents and businesses to develop new actions for the Climate Emergency Action Plan.
- Create new events based upon requests and input from participants such as green networking and support that is available to businesses.
- Recruit external speakers based upon requests from young people, businesses and residents.
- Continually grow the Forums and engage with a wide range of people.
- Report progress on the recommendations / integrated action plan and the actions for the attendees.

3. Term

Forums will be held regularly with other supporting events organised where there is demand from attendees and capacity to deliver them.

- Ward 1 Clackmannanshire West (Cambus, Tullibody & Menstrie)
- Ward 2 Clackmannanshire North (Alva and Tillicoultry)
- Ward 3 Clackmannanshire Central (The Whins, Hutton Park & Gaberston area of Alloa, Sauchie, Fishcross and Devon Village)
- Ward 4 Clackmannanshire South (Alloa, excluding The Whins, Comely Bank to the rear of Morrisons and Hutton Park and Gaberston areas)
- Ward 5 Clackmannanshire East (Clackmannan, Comely Bank to the rear of Morrisons, Dollar & Muckhart)

A typical forum meeting could include engaging discussions, workshops, or presentations; updates from local community action groups; updates from the Council; a space for residents to voice thoughts, ideas and concerns.

Whether these forums are in person or digital will be determined by Covid-19 requirements, however, the preference is for them to be held in-person.

The dates and venues of the forum meetings will be provided a month in advance, however, if regular locations can be secured these forums could be diarised at the preceding forum.

Further methods of communication can be explored at a later date, especially with the Community Climate Champions who will require further information and details to keep them engaged and abreast of regular updates.

The forums will form an integral part of the Council's Climate Strategy and biodiversity plans and will be used to gather data on action within local communities to update and provide recommendations to the Climate Emergency Board.

A regular network will also allow the Council to regularly provide updates to the community, answer questions regarding progress and respond to feedback from young people, businesses and residents.

4. Roles of Members

- Co-Chair: Cllr Fiona Law
- Co-Chair: Young person from youth forum / young pathfinder
- Guidance on Climate Change: Energy and Sustainability Team
- Guidance on Biodiversity: Energy and Sustainability Team

Appendix D - GHG Emissions Data: Where Clackmannanshire Council is Now

In line with the World Resources Institute Greenhouse Gas Protocol, the following areas should be included in Clackmannanshire Council's Carbon footprint:

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

Clackmannanshire Council public sector reporting duty currently gathers data on the first three areas but not for areas 4 and 5. Initial steps have been taken to begin 4 and 5's incorporation into the Council's overall emissions count.

Below are Clackmannanshire's emissions from areas 1-3 and their corresponding financial year:

2013/14 9,767 tCO₂e

2014/15 9,703 tCO₂e

2015/16 9,493 tCO₂e

2016/17 8,844 tCO₂e

2017/18 7,538 tCO₂e

2018/19 6,285 tCO₂e

2019/20 5,986 tCO₂e

2020/21 5,045 tCO₂e

Further information can be found in Clackmannanshire's Public Bodies Climate Change Duty Reports <https://sustainablesotlandnetwork.org/reports/clackmannanshire-council>

Clackmannanshire Council

Interim Climate Change Strategy

Be the
Future



Clackmannanshire
Council



Structure

- 1. Foreword**
- 2. Executive Summary**
- 3. Why Does Climate Change Matter?**
- 4. Climate Change Legislation**
 - a. International
 - b. United Kingdom
 - c. Scotland
 - d. Clackmannanshire Council
- 5. The Role of Clackmannanshire Council**
 - a. Internal Emissions
 - b. Spending Alignment
 - c. External Emissions
- 6. Net Zero Delivery Framework**
 - a. Climate Emergency Board
 - b. Climate Change Forum
 - c. Climate Emergency Action Plan
- 7. Strategic Themes and Actions**
 - a. Energy, Heat and Buildings
 - b. Low-carbon Transport
 - c. Waste, Recycling and the Circular Economy
 - d. Biodiversity, Carbon Storage and Agriculture
 - e. Adaptation, Planning and Organisational Capacity
 - f. Economic Development and Sustainable Procurement
- 8. Conclusion**

1. 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 Interim 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.

While this Interim Strategy sets out means of building on the Council's significant 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.

There is huge potential for the Council to lead by example in these challenges and facilitate emission reductions across Clackmannanshire by 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.

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.



Pete Leonard
Strategic Director (Place)



Councillor Fiona Law
Spokesperson for
Environment and Net Zero

2. 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:

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

The Interim Strategy sets out means of gathering input through a series of Climate Change Forums in the five wards in Clackmannanshire in order ensure that the Strategy and associated Climate Emergency Action Plan are shaped by young people, residents and businesses.

Since it is expected that this Interim Strategy 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 Interim Strategy also recognises the extensive activity that the Council is already undertaking to reduce emissions and will aim to add value to this 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 Strategy also aims to underscore the Council's commitment to a just transition by recognising 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. The extensive engagement through the Climate Change Forums will therefore be particularly pertinent to developing collaborative solutions with those most exposed to the effects of climate change.

3. 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 1880.¹

This fits into a wider trend with **nineteen of the twenty hottest years on record registering since the year 2000 globally**² while **Scotland's top ten hottest years have all occurred since 1997** with records beginning in 1884.³

The heatwave of **July 2022 saw a record temperature record of 35.1°C** being recorded for Scotland in the borders, 2.2°C higher than the previous record.

Temperatures in Clackmannanshire in this period included Menstrie reaching 32°C and Alloa reaching 31°C.⁴

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.⁵

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

As highlighted by the image below, 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 subsequent Climate Emergency Action Plan.

¹ Nasa (2022) *Facts* <https://climate.nasa.gov/vital-signs/global-temperature/>

² Nasa (2022) *Facts* <https://climate.nasa.gov/vital-signs/global-temperature/>

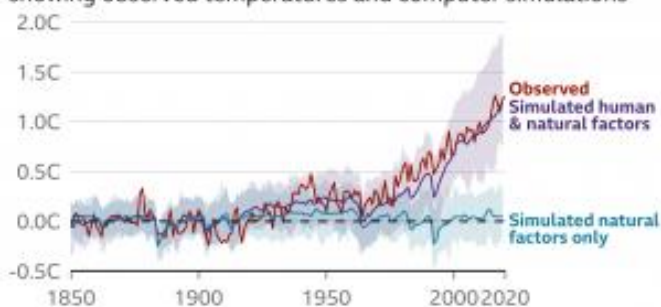
³ Adaptation Scotland (2022) *Climate trends and projections* <https://www.adaptationscotland.org.uk/why-adapt/climate-trends-and-projections#:~:text=Key%20long%2Dterm%20climate%20change,will%20be%20warmer%20and%20drier>

⁴ See <https://wow.metoffice.gov.uk/> at 18/07/2022 16:00 to 16:59 and 19/07/2022 15:00 to 15:59 for Menstrie and 19/07/2022 14:00 to 14:59 for Alloa

⁵ IPCC (2022) *Climate Change 2022: Impacts, Adaptation and Vulnerability* <https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/>

Human influence has warmed the climate

Change in average global temperature relative to 1850-1900, showing observed temperatures and computer simulations



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. 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.⁶

It 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.⁸ Since many of Scotland's species are highly adapted to specific climatic conditions, the effects of climate change are expected to be drastic.⁹

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.¹⁰

In Scotland, climate change has led to a warmer climate, changes in rainfall patterns and higher sea-levels. The weather extremes in Scotland have also changed with our hottest days getting hotter and

⁶ IPCC (2022) *Climate Change 2022: Impacts, Adaptation and Vulnerability* <https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/>

⁷ IPCC (2022) *Climate change: a threat to human wellbeing and health of the planet.* <https://www.ipcc.ch/report/ar6/wg2/resources/press/press-release>

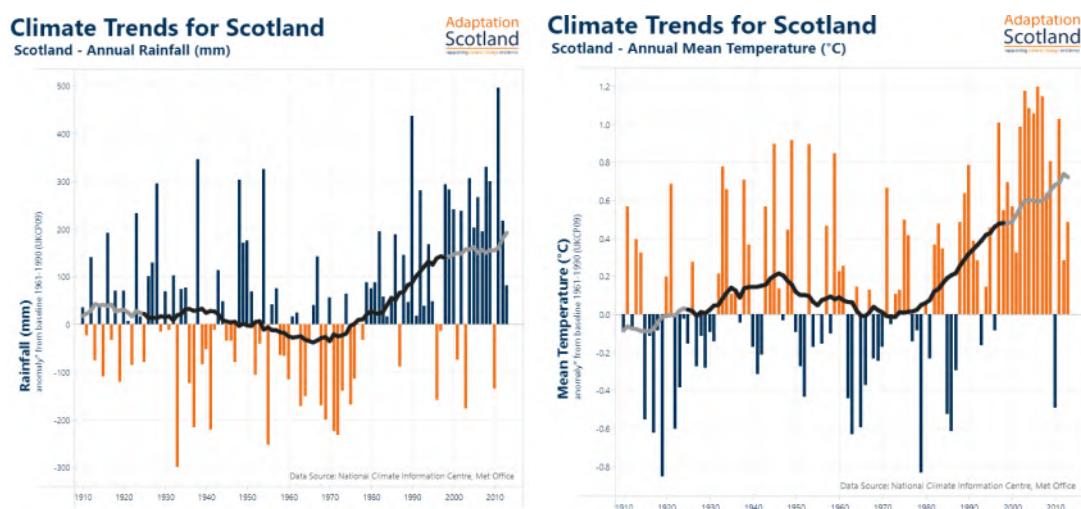
⁸ Naturescot (2022) *Climate change impacts in Scotland* <https://www.nature.scot/climate-change/climate-change-impacts-scotland#:~:text=Climate%20change%20is%20the%20single,and%20animals%20grow%20and%20thrive.>

⁹ Naturescot (2022) *Climate change impacts in Scotland* <https://www.nature.scot/climate-change/climate-change-impacts-scotland#:~:text=Climate%20change%20is%20the%20single,and%20animals%20grow%20and%20thrive.>

¹⁰ IPCC (2021) *Climate change widespread, rapid, and intensifying – IPCC* <https://www.ipcc.ch/2021/08/09/ar6-wg1-20210809-pr/#:~:text=Faster%20warming,C%20will%20be%20beyond%20reach.>

our wettest days getting wetter (see tables below on changes to annual rainfall and mean temperature).¹¹

Adaptation Scotland's data on rainfall and annual average temperature in Scotland



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.¹²

Allora in December 2021 following storm Arwen when hundreds of trees were blown down across Clackmannanshire.



¹¹ Adaptation Scotland (2022) *Climate trends and projections* <https://www.adaptationscotland.org.uk/why-adapt/climate-trends-and-projections#:~:text=Key%20long%2Dterm%20climate%20change,will%20be%20warmer%20and%20drier>

¹² Adaptation Scotland (2022) *Climate trends and projections* <https://www.adaptationscotland.org.uk/why-adapt/climate-trends-and-projections#:~:text=Key%20long%2Dterm%20climate%20change,will%20be%20warmer%20and%20drier>

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.¹³

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 2040.¹⁴

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

The Costs of Inaction

Since it is well documented that the economic benefits of acting on Climate Change far outweigh the costs,¹⁵ 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.¹⁶

Conversely, climate change adaptation and mitigation measures have the potential to deliver significant benefits to health and wellbeing – whether through well insulated homes, increased active travel, sustainable food systems or better air quality.

Flood Risk Areas of Clackmannanshire are highlighted in blue and green in SEPA's flood risk map

¹³ Scotland's Centre of Expertise for Waters (2022) *Assessing climate change impacts on the water quality of Scottish standing waters*

https://www.crew.ac.uk/sites/www.crew.ac.uk/files/publication/CREW%20%E2%80%93%20Assessing%20climate%20change%20impacts%20on%20the%20water%20quality%20of%20Scottish%20standing%20waters_1.pdf

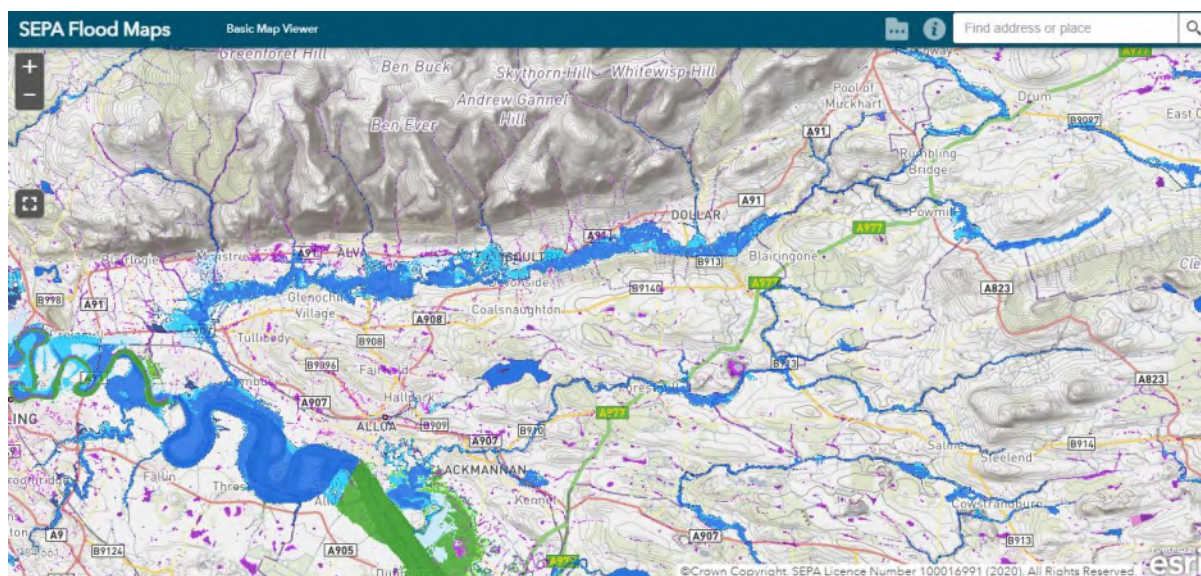
¹⁴ Scotland's Centre of Expertise for Waters (2022) *Assessing climate change impacts on the water quality of Scottish standing waters*

https://www.crew.ac.uk/sites/www.crew.ac.uk/files/publication/CREW%20%E2%80%93%20Assessing%20climate%20change%20impacts%20on%20the%20water%20quality%20of%20Scottish%20standing%20waters_1.pdf

¹⁵ See The Economics of Climate Change: The Stern Review (2006)

<https://www.lse.ac.uk/granthaminstitute/publication/the-economics-of-climate-change-the-stern-review/>

¹⁶ UNEP (2022) Economic Impacts of Climate Change: Exploring short-term climate related shocks for financial actors with macroeconomic models <https://www.unepfi.org/publications/economic-impacts-of-climate-change-exploring-short-term-climate-related-shocks-with-macroeconomic-models/>



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 dementia¹⁷.

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.¹⁸ This is particularly significant within the context of Covid-19, where long-term air pollution was linked to greater risk of hospitalisation.¹⁹

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 deforestation, large-scale animal agriculture and international flights, are also those that make the emergence of future pandemics more probable.²⁰ These practices therefore constitute multi-faceted threats to long-term sustainability.

¹⁷ Royal College of Physicians (RCP) & the Royal College of Paediatrics and Child Health (RCPCH) (2016) <https://www.rcplondon.ac.uk/news/doctors-say-40000-deaths-year-linked-air-pollution>

¹⁸ BHF (2020) 'Heart attack and stroke deaths related to air pollution could exceed 160,000 by 2030'

¹⁹ Imperial College (2021) 'Long-term air pollution linked to greater risk of COVID-19 hospitalisation'

²⁰ Harvard University (2022) *Coronavirus, Climate Change, and the Environment A Conversation on COVID-19 with Dr. Aaron Bernstein, Director of Harvard Chan C-CHANGE* [Coronavirus and Climate Change – C-CHANGE | Harvard T.H. Chan School of Public Health](#)

4. 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. 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.

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.

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 75% emissions reduction by 2030 and a 90% 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 - will have 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:** 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.
- **Finance:** climate change must be integrated into financial planning and reporting.
- **Reporting:** public bodies must consistently, accurately and transparently report all Scope 1 & 2 emissions and all relevant and significant Scope 3 emissions.
- **Accountability:** 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 published a consultation on 'Delivering Scotland's Circular Economy' 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:

- Agrees that climate change is one of the most serious challenges facing communities here in Clackmannanshire and across the world;
- understands that meaningful action at international, national and local level is required in order to safeguard our planet for future generations;
- 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;
- acknowledges the challenges faced by small councils such as Clackmannanshire in taking meaningful, sustainable action;
- 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:

- declare a 'Climate Emergency' that requires urgent action;
- develop a comprehensive Climate Change Strategy within the next 12 months which will deliver 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;
- establish a Community Climate Change Forum to include representation from local communities, businesses and third sector organisations;
- ensure that Council is especially proactive in taking steps to include young people in the Climate Emergency process and that they have a voice in shaping the future;
- write to the Cabinet Secretary to affirm Clackmannanshire's commitment to achieve net zero by 2045 and to request a meeting to discuss how the Scottish Government can help support these ambitions.²¹

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 - the 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.²²

²¹ Clackmannanshire Council (2021) <https://www.clacks.gov.uk/document/meeting/1/1088/7099.pdf>

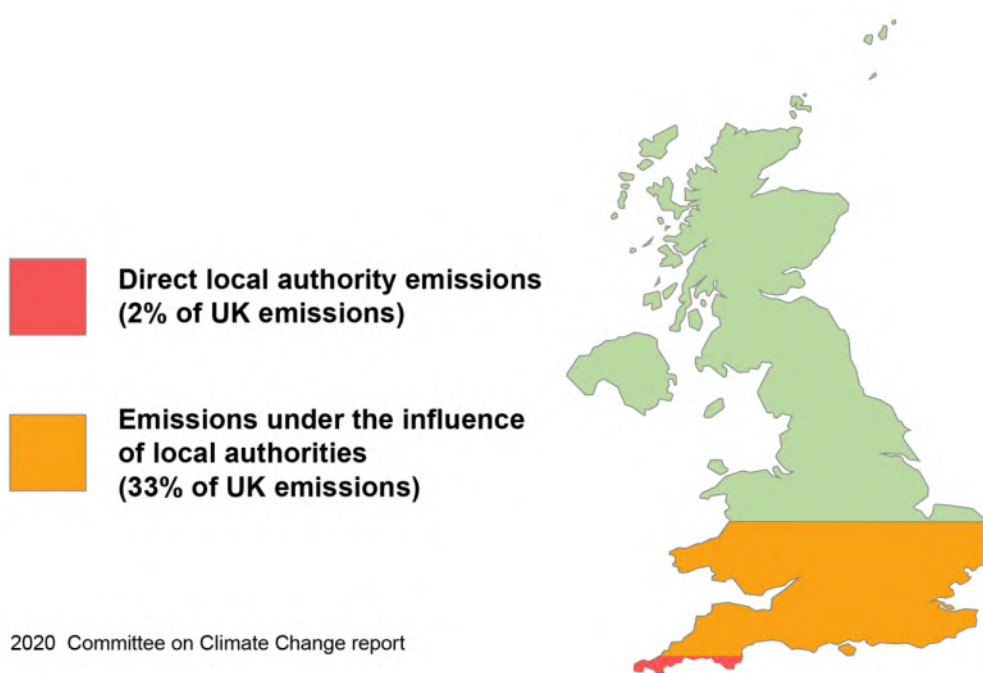
²² Audit Scotland (2022) *Addressing climate change in Scotland A summary of key recommendations for public bodies* <https://www.audit-scotland.gov.uk/publications/addressing-climate-change-in-scotland>

5. 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 present means of increasing the carbon storage potential of nature and therefore reducing net emissions.

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

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, Section 6 sets out a process to establish more robust trajectories in key service areas and a consultation process that will explore whether reaching net zero by earlier dates in some service areas is realistic.

Similarly, the framework set out in Section 6 will allow a more detailed exploration of what external emission reduction targets Clackmannanshire would be able to set and influence 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.²³

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. While specific future opportunities are set out in the themes in Section 7, some broad examples of benefits include:

- strengthening energy networks to improve energy security and reduce costs for residents and businesses;
- delivering low-carbon retrofits to alleviate fuel poverty and reduce costs to help tackle the rising cost of living;
- reducing waste and achieving cost savings by moving towards a circular economy;
- improving air quality, delivering negative emissions and providing resilience to climate-related disturbances through tree planting, pollinator and biodiversity-focussed initiatives;
- improving infrastructure for walking, cycling, remote working and public transport;
- promoting and supporting community food growing;

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.

²³ See Climate Change Committee (2022) *Progress Report to Parliament*
<https://www.theccc.org.uk/publication/2022-progress-report-to-parliament/>

Internal emissions

Clackmannanshire Council has completed annual reports for the Public Bodies Climate Change Duty (PBCCD) from the financial year of 2013/14 to 2020/21. The next iteration will cover the financial year of 2021/22 and is due to be submitted on 30 November 2022.

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 are Clackmannanshire's emissions for the Council's own activities and their corresponding financial year:

2013/14	9,767 tCO ₂ e
2014/15	9,703 tCO ₂ e
2015/16	9,493 tCO ₂ e
2016/17	8,844 tCO ₂ e
2017/18	7,538 tCO ₂ e
2018/19	6,285 tCO ₂ e
2019/20	5,986 tCO ₂ e
2020/21	5,045 tCO ₂ e ²⁴

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.²⁵

Steps have already been taken to deliver on this, with the Council's General Services Revenue and Capital Budget 2022/23, published in March 2022,²⁶ 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).

²⁴ For further information on Clackmannanshire's Public Bodies Climate Change Duty Reports see <https://sustainable-scotland-network.org/reports/clackmannanshire-council>

²⁵ Audit Scotland (2022) *Addressing climate change in Scotland A summary of key recommendations for public bodies* <https://www.audit-scotland.gov.uk/publications/addressing-climate-change-in-scotland>

²⁶ The Council's *General Services Revenue and Capital Budget 2022/23 investment report* can be accessed here <https://www.clacks.gov.uk/document/meeting/127/1138/7304.pdf>

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

Green investment through Clackmannanshire Council's Capital Programme

	2022/ 23	2023/ 24	2024/ 25	2025/ 26	2026/ 27	Total 2027-32	Total 2032-37	Total 2037-42	20 year Total
	£'000	£'000	£'000	£'000	£'000	£'000	£'000	£'000	£'000
Innovation Hub	200	1,164							1,364
Delivery City Deal (RPMO)	100	100							200
Renewable Energy Projects	30								30
Active Travel Route Railway Station	0	560							560
Flood Protection	57	235	86	86	86	430	430	430	1,840
Tillicoultry Flood Protection	0	150	250	300	2,500	2,800			6,000
Building energy management system	32	8							40
Cycle Routes	222	100	100	55					477
Active Travel Route	0	2,000							2,000
Street Lighting Replacement	258	258	258	258	259	1,297	1,303	1,305	5,196
Vehicle Replacement	563	800	1,000	1,000	1,000	5,000	5,000	5,000	19,363
TOTAL	1,462	5,375	1,694	1,699	3,845	9,527	6,733	6,735	37,070

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.

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 43.3% of emission in Clackmannanshire. This is followed by commercial gas and electricity at 20.8%, domestic gas and electricity at 15.06% and then Transport at 11.31% in 2020.

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 1.6%.

Estimated territorial greenhouse gas emissions by sector in Clackmannanshire 2005-2020 (kt CO₂e)

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	279.7	92.2	11.3	136.0	80.2	15.1	7.8*	2.1*	624.4*
2006	285.8	91.6	11.7	135.1	80.6	13.9	8.0*	2.3*	629.1*
2007	301.1	142.8	14.2	132.9	82.6	13.6	8.2*	2.4*	697.7*
2008	302.2	152.0	14.7	132.5	80.5	12.8	8.2*	2.3*	705.2*
2009	255.3	98.6	11.1	120.6	79.2	12.0	7.3*	2.3*	586.4*
2010	288.9	162.1	14.2	128.3	78.3	11.3	7.7*	2.2*	693.0*
2011	276.3	145.3	13.2	112.6	76.0	10.4	7.5*	2.2*	643.6*
2012	249.4	143.2	10.1	120.4	73.5	9.9	5.5*	2.2*	614.3*
2013	240.0	149.4	10.1	116.2	70.5	9.6	5.3*	2.2*	603.3*
2014	216.8	121.6	8.2	97.8	71.4	9.0	4.8*	2.3*	531.8*
2015	231.5	126.7	10.0	97.3	72.3	8.5	6.0*	2.2*	554.4*
2016	232.3	137.4	9.0	88.6	73.6	8.5	5.5*	2.1*	556.9*
2017	221.7	128.8	8.7	85.6	73.5	8.0	5.2*	2.2*	533.7*
2018	225.2	135.8	8.6	82.2	72.9	7.5	21.7	15.2	568.9
2019	227.1	126.7	8.0	81.1	71.6	7.2	21.4	14.8	557.8
2020	220.6	106.0	7.9	76.7	57.6	7.3	20.3	12.9	509.2

*Did not include Agriculture Livestock, Agriculture Soils and Landfill emissions data as data was unavailable²⁷

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 table below, Clackmannanshire's per capita emissions, at 9.9 tCO₂e, are slightly higher than the Scottish average of 9.1 tCO₂e. Additionally, out of the 32 Scottish local authorities, Clackmannanshire has the 8th highest per capita emissions.

Local Authority	Per Capita Emissions (tCO ₂ e)
Glasgow City	3.7
East Dunbartonshire	3.8
City of Edinburgh	3.9
Dundee City	4.2
East Renfrewshire	4.2
West Dunbartonshire	4.3
Inverclyde	4.5

²⁷ Data published by the Department for Business, Energy & Industrial Strategy provides CO₂ emission estimates at local authority and regional level covering industry, commercial, domestic, road transport and land use emissions <https://www.gov.uk/government/statistics/uk-local-authority-and-regional-greenhouse-gas-emissions-national-statistics-2005-to-2020>

Renfrewshire	4.5
Midlothian	4.8
Aberdeen City	4.8
North Lanarkshire	5.2
West Lothian	5.4
South Lanarkshire	5.8
South Ayrshire	6.2
East Ayrshire	6.5
North Ayrshire	6.9
Angus	7.2
Stirling	7.8
Fife	7.8
Perth and Kinross	8.1
Moray	8.2
Argyll and Bute	8.9
Aberdeenshire	9.6
East Lothian	9.8
Clackmannanshire	9.9
Scottish Borders	11.2
Highland	11.6
Falkirk	14.2
Dumfries and Galloway	15.8
Orkney Islands	20.7
Shetland Islands	27.8
Na h-Eileanan Siar	35.0
Average	9.1

The disproportionate significance of industry emission to Clackmannanshire is part of the reason for the above average per capita emissions with 4.3tCO₂e for industry emissions in Clackmannanshire compared to an average of 1.3tCO₂e 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 outwith the scope of influence of Local Authorities, Clackmannanshire's industry emissions per capita decline significantly to 1.4tCO₂e per capita, although this remains significantly higher than the 0.7tCO₂e 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 2020 decline to a total of 319.94ktCO₂e or 6.2tCO₂e per person.

The contributors to this total, as outlined in the table below, are commercial at 32.32%, Domestic Gas and Electricity at 23.26%, Industry Domestic Gas and Electricity at 23.01%, Transport at 17.69%, Public Sector Emission at 2.38% and agriculture at 1.38%.

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

Commercial Total	103.4
Domestic Total	74.4
Industry Total	73.6
Transport	56.6
Public sector	7.6
Agriculture	4.4
Total	319.9

The fact that both Domestic and Industry emissions make up a combined 46.27% of emissions that the local authority has major scope to influence, underscores the significance of transitioning building emissions from gas, which is the heating source 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 1.1tCO₂e per person compared to 1.6tCO₂e on average in Scotland, they still make up a significant proportion of overall emissions in the area.

As a result, specific opportunities in facilitating decarbonisation in these key areas are set out in Section 7.

6. 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.

Climate Emergency Board

The Climate Emergency Board will comprise of elected members from each political party at Clackmannanshire Council and senior officers from key service areas across the Council. It will be responsible for establishing a more comprehensive baseline of emissions from the Council's own operations, such as the inclusion of waste and net negative emissions from land-management, before setting out a thematic Climate Change Strategy supported by a Climate Emergency Action Plan with specific actions to progress net zero targets under the six themes set out in Section 7.

The actions will each have a named owner from the Climate Emergency Board and timescales for review and completion while the Climate Emergency Board will be supported in its work by the Council's Energy and Sustainability team.

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

Engagement and collaboration are crucial for identifying emission reduction trajectories that are both realistic and shaped by ambition that reflects the gravity of climate change. Accordingly, the targets for Net Zero for Clackmannanshire's own operations by 2040 and area wide emissions by 2045 reflect a minimum level of ambition expected from the emission reduction trajectories that the Climate Emergency Board will be developing.

Additionally, as the Council recognises the need to jointly develop realistic and achievable targets with our communities, consultation will be undertaken to garner input and buy-in from residents and businesses. The initial emission reduction targets and Climate Emergency Action Plan developed by the Climate Emergency Board will therefore be shared with the Climate Change Forums before being finalised.

Climate Change Forums

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

The Climate Change Committee have calculated that over 60% of changes required to reach net zero will require some degree of societal or behavioural change²⁸ while the recent IPCC report concluded that demand-side measures can reduce global GHG emissions by 40-70% by 2050.²⁹ Accordingly, behavioural and societal change are significant cornerstones of achieving net zero.

Therefore, in setting an ambition to reduce emissions to net zero, the Council recognises the need for the public to have a much more significant role in shaping collective future actions. Public involvement is essential for dialogue around lifestyle change on a range of key issues like diet, personal travel and home heating.

The Forums' approach to engagement will be shaped by the five categories of participation in the Public Participation Spectrum: Inform; Consult; Involve; Collaborate and Empower³⁰ while also drawing upon the Guiding Principles from the Scottish Government's Public Engagement Strategy for Climate Change (see the table below).

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 actions³¹

There are also likely to be significant opportunities for the Climate Change Forums 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.³²

The Climate Change Forums therefore creates strong opportunities to emphasise placed-based action by empowering communities to develop localised solutions to climate change.

²⁸ Climate Change Committee (2019) Net Zero – The UK's contribution to stopping global warming <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>

²⁹ IPCC (2022) *Climate Change 2022: Impacts, Adaptation and Vulnerability* <https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/>

³⁰ IAP2 (2018) Spectrum of Public Participation https://cdn.ymaws.com/www.iap2.org/resource/resmgr/pillars/Spectrum_8.5x11_Print.pdf

³¹ Scottish Government (2021) *Climate change - Net Zero Nation: public engagement strategy* <https://www.gov.scot/publications/net-zero-nation-public-engagement-strategy-climate-change/documents/>

³² Scottish Government (2021) *A Fairer, Greener Scotland: Programme for Government 2021-22* <https://www.gov.scot/publications/fairer-greener-scotland-programme-government-2021-22/documents/>

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.

Additionally, a Place and Wellbeing Assessment workshop was 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 including potential positive or negative influence on residents’ health and well-being.

Further opportunities were incorporated into Section 7 as a result of this exercise and the Council will continue to work with the Shaping Places for Wellbeing Team at the Improvement Service to add value to environmental targets by evaluating them through a place and well-being lens.

The establishment of the Climate Change Forums also constitutes an opportunity to build on the legacy of other relevant engagement exercises such as Scotland’s Climate Assembly and the on-going Climate Action Towns Project.

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 an owner who will be responsible for implementing the action by its corresponding completion date and providing regular 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 (see table below).

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:
 - public bodies should use monitoring frameworks and policy trackers, benchmarking, milestones

- information on costs of policies and proposals should all be monitored and reported
- 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.³³

³³ Audit Scotland (2022) *Addressing climate change in Scotland A summary of key recommendations for public bodies* <https://www.audit-scotland.gov.uk/publications/addressing-climate-change-in-scotland>

7. Strategic Themes and Actions

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.

An overview of relevant legislation, current decarbonisation activity by the Council and future opportunities has been identified under the six themes.

Theme 1: Energy, Heat and Buildings

Heating and powering our buildings is a significant contributor to CO₂ emissions. As highlighted in Section 5, commercial gas and electricity accounted for 20.8% of greenhouse gas emissions in Clackmannanshire in 2020 while domestic gas and electricity were 15.06% in the same period - in total this amounted to approximately 182,700tCO₂e.

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 efficient initiatives.

There is also significant scope for Clackmannanshire Council to decarbonise buildings within its own estate while driving and supporting the decarbonisation of the 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.

Despite the major opportunity here, it also presents significant challenges. Over 80% of residential properties are heated via a gas grid in Scotland. Gas grids are particularly challenging to decarbonise and achieving net-zero home heating in these countries will involve a decisive break from established forms of supply.

The Fuel Poverty Act sets out the four main drivers of fuel poverty:

- energy prices;
- income;
- energy efficiency of the home;
- how energy is used in the home.³⁴

Given the significant increase in energy, combined with inflation increasing much more quickly than wages, it is urgent to recognise the increased exposure of residents to fuel poverty and concentrate on increasing energy efficiency to support residents. Particularly since in 2019, approximately 24% of

³⁴ Scottish Government (2020) *Lived experience of fuel poverty: evidence review*
<https://www.gov.scot/publications/evidence-review-lived-experience-fuel-poverty-scotland/pages/3/#:~:text=The%20Scottish%20Government%20recognises%20four,is%20used%20in%20the%20home.>

Scottish household lived in fuel poverty³⁵ and recently developments are likely to have exacerbated this.

Legislation

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

- Introducing a standard requiring all new homes consented from 2024 to use zero emission heating;
- Introducing minimum energy efficiency standards for the domestic private rented sector;
- Introducing regulations for all buildings to achieve a good level of energy efficiency;
- Establishing 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.³⁶

The Scottish Government's Heat in Buildings Strategy also 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.³⁷

It also commits to making it mandatory for Scotland's Councils to develop Local Heat and Energy Efficiency Strategies (LHEES) and accompanying Delivery Plans and have them in place by the end of 2023.³⁸

The Heat Networks (Scotland) Act 2021 set up the license and regulation arrangements for heat network while recognising that Heat Networks are often:

- more efficient than single fossil fuel heating systems;
- run fully from renewables, recovered waste or surplus heat sources;
- capable of allowing changes in heat source without disrupting the user's supply.³⁹

³⁵ Energy Action Scotland (2021) *Scottish Fuel Poverty Map* https://www.eas.org.uk/en/scottish-fuel-poverty-map_59455/

³⁶ *Home energy and fuel poverty* <https://www.gov.scot/policies/home-energy-and-fuel-poverty/energy-efficiency-in-social-housing/>

³⁷ Scottish Government (2021) *Heat in Buildings Strategy - achieving net zero emissions in Scotland's buildings* <https://www.gov.scot/publications/heat-buildings-strategy-achieving-net-zero-emissions-scotlands-buildings/pages/3/>

³⁸ Scottish Government (2022) Local Heat and Energy Efficiency Strategies Draft LHEES Order consultation

The Scottish Government Energy Efficient Scotland Route Map also identifies the key targets for the domestic sector, including:

- maximise the number of social rented homes achieving Energy Performance Certificate (EPC) B standard by 2032;
- private rented homes to achieve EPC E by 2022, EPC D by 2025, and EPC C by 2030 (where technically feasible and cost effective);
- all homes with households in fuel poverty to reach EPC C by 2030 and EPC B by 2040 (where technically feasible and cost effective.)⁴⁰

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

- o energy prices;
- o income;
- o energy efficiency of the home;
- o and how energy is used in the home.⁴¹

What we are doing now

The Council is commissioning a Regional Energy Masterplan in partnership with Stirling Council to identify renewable energy potential, explore methods of energy efficiency and make recommendations of potential initiatives across Clackmannanshire and Stirling for the next 10-15 years.

Consultation work has begun and a key output includes two full business cases for each Clackmannanshire and Stirling in addition to exploring options for joint work, potentially linked to battery storage or energy potential based up on the region's geology such as the fault line across the hill foots.

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.⁴²

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 13,000tCO₂e in annual savings or over 334,000tCO₂e in estimated lifetime savings.

³⁹ Heat Networks (Scotland) Bill (2021) <https://www.parliament.scot/bills-and-laws/bills/heat-networks-scotland-bill#:~:text=The%20aim%20of%20the%20Bill,from%20homes%20and%20other%20buildings.>

⁴⁰ Scottish Government (2018) *Energy Efficient Scotland: route map* <https://www.gov.scot/publications/energy-efficient-scotland-route-map/>

⁴¹ Scottish Government (2020) *Lived experience of fuel poverty: evidence review* <https://www.gov.scot/publications/evidence-review-lived-experience-fuel-poverty-scotland/pages/3/#:~:text=The%20Scottish%20Government%20recognises%20four,is%20used%20in%20the%20home.>

⁴² For more information see <https://www.clacks.gov.uk/housing/fuelpoverty/>

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.

More specifically, we have 10,275 street light units⁴³ (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 two to three financial years, plans are being developed to convert the majority of the remaining sodium lanterns to LED. All lanterns are recycled in line with the Waste, Electrical and Electronic Equipment Regulations 2013.

Future Opportunities

The creation of a Climate Emergency Board and Climate Emergency Action Plan will help to ensure that the Council is investment-ready and stands in strong stead to make collaborative funding bids to exploit new green energy opportunities in addition to securing funding to lighten the financial burden on residents and contribute to net zero targets. Specific opportunities include the following:

- Develop specific emission reduction targets for the Council's housing portfolio particularly by linking the Council's education team with the public buildings managers to coordinate decarbonisation strategically.
- Review of the Strategic Housing Investment Programme to:
 - o establish the level of resources available and a set of milestones for decarbonisation;
 - o ensure that housing is wind and water tight and fit for habitation;
 - o enshrine social justice to ensure that rents are affordable and any additional costs do not fall on tenants;
 - o meet legislative duties.
- Adopt a 'fabric first' approach whereby the performance of the components / materials that the building fabric comprises of is maximised, as set out in the Zero Emissions in Social Housing Report.⁴⁴
- Explore front-loading spending on retrofitting and energy efficiency models to make significant long-term cost savings that would more than pay for themselves while reducing emission on the Council's portfolio.

⁴³ Data from Clacks Street Lighting inventory

⁴⁴ Scottish Government (2021) *Achieving net zero in social housing: Zero Emissions Social Housing Taskforce report* [Supporting documents - Achieving net zero in social housing: Zero Emissions Social Housing Taskforce report - gov.scot \(www.gov.scot\)](https://www.gov.scot/resources/documents/2021/06/Supporting_documents_-_Achieving_net_zero_in_social_housing:_Zero_Emissions_Social_Housing_Taskforce_report_-_gov.scot)

- Explore undertaking a deep retrofit of all schools and other Council properties while setting EPC targets linked to specific dates.
- Support the development of community and Council owned sustainable energy projects.
- Utilise the 'Lean, clean, green hierarchy' to identify low cost, high energy saving opportunities for the Council's estate.
- Escalate funding opportunities for the energy transition and renewables (heat pumps, heat networks, hydrogen, and local energy) to the Climate Emergency Board in order for the Board to coordinate bids with internal teams and potentially external partners.
- Work with the Council's internal Energy Management Group to identify specific actions for the Climate Emergency Action Plan.
- Escalate recruitment challenges and skills gaps for the delivery of green retrofitting to Skills Development Scotland.
- Utilise the development of a LHEES and accompanying Delivery Plan to reduce emissions from 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.
- Since LHEES is intended to form the basis for local planning and delivery of local energy systems, it constitutes a strong opportunity to build a legacy from the Regional Energy Masterplan.
- Identify and address gaps in data in local data while supplementing statistics with local engagement.

Theme 2: Low-carbon Transport

Transport is Scotland's largest sectoral emitter, accounting for 9.5 MtCO₂e or 24% of Scottish emissions (excluding shipping and aviation)⁴⁵ while it accounted for 11.31% of overall emissions in 2020 in Clackmannanshire, or approximately 57,500 tonnes of CO₂e.

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."*⁴⁶

Given Clackmannanshire Council's role as an employer over 2,000 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.

The sustainable transport hierarchy highlights the different modes of transport with the least emission intensive at the top of the pyramid.⁴⁷

⁴⁵ Scottish Greenhouse Gas Statistics (2020) <https://www.gov.scot/publications/scottish-greenhouse-gas-statistics-2020/pages/3/>

⁴⁶ Audit Scotland (2022) Addressing climate change in Scotland A summary of key recommendations for public bodies, <https://www.audit-scotland.gov.uk/publications/addressing-climate-change-in-scotland>

⁴⁷ Scottish Government (2021) National Transport Strategy 2 <https://www.transport.gov.scot/publication/national-transport-strategy-2/>

Prioritising Sustainable Transport



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 emissions⁴⁸ and approximately 48.7 billion vehicle kilometres were driven by motor vehicles on Scottish roads in 2019, an increase of 1% on 2018, 8% over five years and 10% higher than in 2009.⁴⁹

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.

Moreover, walking, wheeling and cycling (active travel) is associated with improvements in mental health and reduced risk for all-cause mortality,⁵⁰ it has the potential to reduce detrimental health impacts by reducing motorised traffic⁵¹ while providing benefits to local economies.⁵² Therefore, barriers to active travel, particularly safety concerns, hamper people's access to exercise.

⁴⁸ Scottish Government (2022) *Climate Change Plan: Monitoring Reports 2022*

<https://www.gov.scot/publications/climate-change-plan-monitoring-reports-2022/documents/>

⁴⁹ Transport Network (2021) *Scotland losing the battle on sustainable transport* <https://www.transport-network.co.uk/Scotland-losing-the-battle-on-sustainable-transport/17158#:~:text=A%20total%20of%2048.7%20billion,10%25%20higher%20than%20in%202009.>

⁵⁰ Rissel C, Curac N, Greenaway M, et al. (2012) *Physical Activity Associated with Public Transport Use - A Review and Modelling of Potential Benefits*. *International Journal of Environmental Research and Public Health* 9: 2454-2478

⁵¹ 3 Staatsen B et al. (2017) *INHERIT: exploring triple-win solutions for living, moving and consuming that encourage behavioural change, protect the environment, promote health and health equity*. Brussels: EuroHealthNet; www.inherit.eu/wp-content/uploads/2017/06/INHERIT-Report-A4-Low-res_s.pdf

⁵² Living Strattes (2014) *The business case for better streets and places* www.livingstreets.org.uk/media/3890/pedestrian-pound-2018.pdf

Public transport also has the potential to encourage active travel⁵³ while reducing carbon emissions^{54 55} and improving access to services and facilities and connect communities.⁵⁶ Certain groups in the population are disproportionately affected by the lack of available and affordable public transport⁵⁷ while some people find it necessary to purchase a car even when they cannot afford it.⁵⁸

Consequently, there is a firm financial case for facilitating active transport options for residents and businesses which is likely to have been exacerbated 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 communities⁵⁹ while potentially reducing levels of physical activity and social interactions.⁶⁰ The volume and speed of traffic and long commutes can also be detrimental to health.⁶¹

There is clearly a strong role for Councils 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.

⁵³ Gates, S. et al. (2019). *Transport and inequality: An evidence review for the Department for Transport*. NatCen

assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/843487/Transport_and_inequality_report.pdf

⁵⁴ Patterson R, Webb E, Hone T, et al. (2019) *Associations of Public Transportation Use with Cardiometabolic Health: A Systematic Review and Meta-Analysis*. *American Journal of Epidemiology* 188(4):785-795

⁵⁵ Report to the Scottish Government (2017) *Aether Evidence Review of the Potential Wider Impacts of Climate Change Mitigation options: Transport sector*.

<https://www.gov.scot/binaries/content/documents/govscot/publications/research-and-analysis/2017/01/evidence-review-potential-wider-impacts-climate-change-mitigation-options-transport/documents/00513155-pdf/00513155-pdf/govscot%3Adocument/00513155.pdf>

⁵⁶ Natcen (2019) *Transport, health, and wellbeing: An evidence review for the Department for Transport*

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/847884/Transport_health_and_wellbeing.pdf

⁵⁷ Natcen (2019) *Transport, health, and wellbeing: An evidence review for the Department for Transport*

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/847884/Transport_health_and_wellbeing.pdf

⁵⁸ Gates, S. et al. (2019). *Transport and inequality: An evidence review for the Department for Transport*.

NatCen

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/847884/Transport_health_and_wellbeing.pdf

⁵⁹ Cooper E, Gates S, Grollman C, et al. *Transport, health, and wellbeing: an evidence review for the Department for Transport*. London: NatCen; 2019.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/847884/Transport_health_and_wellbeing.pdf

⁶⁰ Mueller N, Rojas-Rueda D, Cole-Hunter T, et al. (2015) *Health impact assessment of active transportation: A systematic review*. *Preventative Medicine* ;76:103–114.

⁶¹ 10 Beute F, Davies Z, de Vries S, et al. (2020) *Types and characteristics of urban and peri-urban blue spaces having an impact on human mental health and wellbeing*. EKLIPSE Expert Working Group, UK Centre for Ecology & Hydrology, Wallingford, United Kingdom

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.

While there are a number of 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.

Despite the Council having begun a successful transition from fossil fuel powered vehicles to renewably powered ones and the fleet team continue to collaborate and learn from other local authorities and private sector partners, obstacles remain.

For example, at present the cost of one electric light van is three times the cost of a fossil fuel powered equivalent and the same can be said for electric heavy vehicles. The availability of fleet maintenance is also a challenge as manufacturer back up for alternatively fuelled vehicles is not fully in place while availability of the range of vehicles required is still a short to medium term challenge.

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 going forward, 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.

Transport Legislation

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.

What we are doing now

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;

- promotion of Forth Bike Hire Scheme (e-bikes);
- 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. The Council is leasing the facility to Alloa Hub who will run it as per the info on their website,⁶²
- real time planning information screens installed at Shillinghill.

Employee mileage claims by kilometre decreased from 542,952 in 2019/20 to 231,911 in 2020/21. This amounted to a **reduction of 58.66%** or an emission savings of 56.41 tCO₂e. While this was primarily due to Covid-19 restriction, it clearly reflects 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.

Future Opportunities

While there is a lot of good work going on in the Council, we need to do significantly more to meet net zero targets and the Scottish Government's statutory goal to reduce car kilometres by 20% by 2030. Specific opportunities include:

- Better integrate land-use and transport planning to reduce high emission travel, facilitate travel by active and sustainable modes, 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.
- Behaviours beneficial to emission reduction that emerged in the COVID-19 lockdowns should be locked in. Specific opportunities include:
 - o 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.

⁶² See <http://alloafirst.co.uk/alloahub/>

- Ensuring that there is flexibility wherever possible for employee start and finish times to fit in with public transport.
 - Continuing hybrid and remote working arrangements with the statutory 20% reduction in car kilometres being taken into consideration to ensure staff car miles do not return to business as usual.
 - 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.
 - Supporting digital infrastructure for residents to ensure that households across the Council area are able to work digitally.
- Establish uninterrupted, well-maintained networks of segregated cycling, walking and wheeling routes that link towns to key services, public transport sites and destinations across Clackmannanshire to adopt the highest standards for safety – routes that are fit for a 12-year-old with prioritisation over motorised traffic.⁶³
 - Encourage use of the existing cycle network in Clackmannanshire by exploring the education and advocacy needed to promote cycling, including ebikes and ecargo bikes, and how routes link in with local travel and transport services.
 - The Council may also need to make unpopular choices. A full options appraisal of the following, including potential income generation which could be hypothecated for active travel and public transport, should be set out and embedded in our Local Transport Strategy:
 - exploring pedestrianisation and traffic easing measures of key points in town centres to make them destinations as opposed to through roads;
 - applying tariffs to use our electric vehicle charging points;
 - reducing on-street parking in favour of bus and cycling infrastructure;
 - charging for parking;
 - creating safe, segregated cycle routes that link to key destinations and public transport hubs with priority of motorised vehicles;
 - identifying congestion points and air pollution hotspots, particularly near schools, and ensuring there are viable sustainable transport options in these areas;
 - exploring a work-place parking levy which has been a resounding success in facilitating modal shift in Nottingham.⁶⁴
 - Enshrine the Council’s ambition to develop these 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.
 - A presumption against investment in infrastructure that creates additional demand for high carbon transport and is therefore incompatible with net zero targets, such as the development of new roads or increasing road capacity for cars.
 - Embed the sustainable travel hierarchy into our policies and provide clear guidance to both staff and line managers.

⁶³ See example of Manchester Bee Network <https://beeactive.tfgm.com/bee-network-vision/>

⁶⁴ See example of Nottingham’s investment in public transport <https://www.nottinghamcity.gov.uk/wpl#:~:text=Nottingham%20City%20Council%20has%20introduced,manage%20their%20workplace%20parking%20provision.>

- Identify ways to support staff with increasing fuel costs by increasing accessibility to work locations by sustainable modes such as walking, cycling, remote/home-working and public transport⁶⁵. More specific opportunities to do this include:
 - o Updating the Staff Travel Plan with transport and human resources colleagues to facilitate travel to work based upon the sustainable transport hierarchy.
 - o Consulting staff on barriers to sustainable transport and create action for the Climate Emergency Action Plan based upon the most significant barriers.
 - o Exploring investing in active travel infrastructure where necessary: cycle parking, showers or lockers to help staff use these modes.
- Providing internal and external education reflecting the climate impacts of transport to support the transition to public and active transport.
- Review the Local Transport Plan and consider opportunities to contribute to net zero targets while supporting and implementing an integrated, accessible, and affordable public transport system.
- Undertake broader consultation with residents around the cost-of-living crisis and how confident they feel about active travel, the cost and accessibility of public transport and accessibility through the Climate Change Forums.
- Opportunity to explore how Alloa links to different towns and cities
- 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.
- Explore opportunities to introduce e-bikes for residents and staff.
- Escalate recruitment challenges and skills gaps to Skills Development Scotland.
- 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.
- Contribute to Sustran's Regional Transport Strategy and future iteration of the Nation Transport Strategy by making the case for additional active travel and public transport opportunities while pushing for the use of carbon budgets and highlighting the incompatibility of high carbon transport such as aviation with net zero targets.

Theme 3: Waste, Recycling and the Circular Economy

Even though waste accounted for 1.4 MtCO₂e or only 3.5% of emissions in Scotland in 2020, approximately 80% of Scotland's carbon footprint comes from our consumption of goods, materials and services.⁶⁶

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.

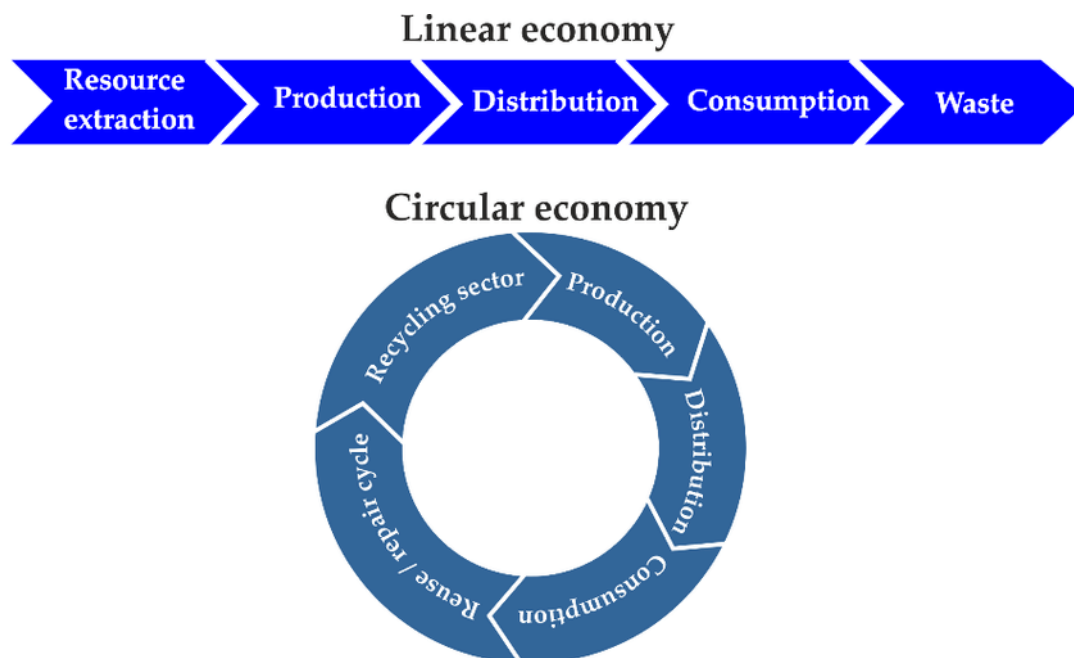
While the available data on the provision of waste has not been included in Clackmannanshire Council's overall footprint in previous years, it is important that it is incorporated and accounted for in the target to reach net zero by 2040 since it is within council control.

⁶⁵ It is important to note that public transport is not always cheaper.

⁶⁶ Scottish Greenhouse Gas Statistics (2020) <https://www.gov.scot/publications/scottish-greenhouse-gas-statistics-2020/pages/3/>

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**.

Retrieved from https://www.researchgate.net/figure/Linear-vs-circular-economy_fig1_346628201



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.⁶⁷

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 306kgCO₂e/t or 27% lower than sending it to landfill.**⁶⁸

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.⁶⁹

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.

⁶⁷ Scottish Government (2022) *Stop, Sort, Burn, Bury - incineration in the waste hierarchy: independent review* <https://www.gov.scot/publications/stop-sort-burn-bury-independent-review-role-incineration-waste-hierarchy-scotland/pages/13/>

⁶⁸ Zero Waste Scotland (2021) *The climate change impact of burning municipal waste in Scotland* <https://www.zerowastescotland.org.uk/content/climate-change-impact-burning-municipal-waste-scotland>

⁶⁹ Zero Waste Scotland (2021) *The climate change impact of burning municipal waste in Scotland* <https://www.zerowastescotland.org.uk/content/climate-change-impact-burning-municipal-waste-scotland>

Legislation

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

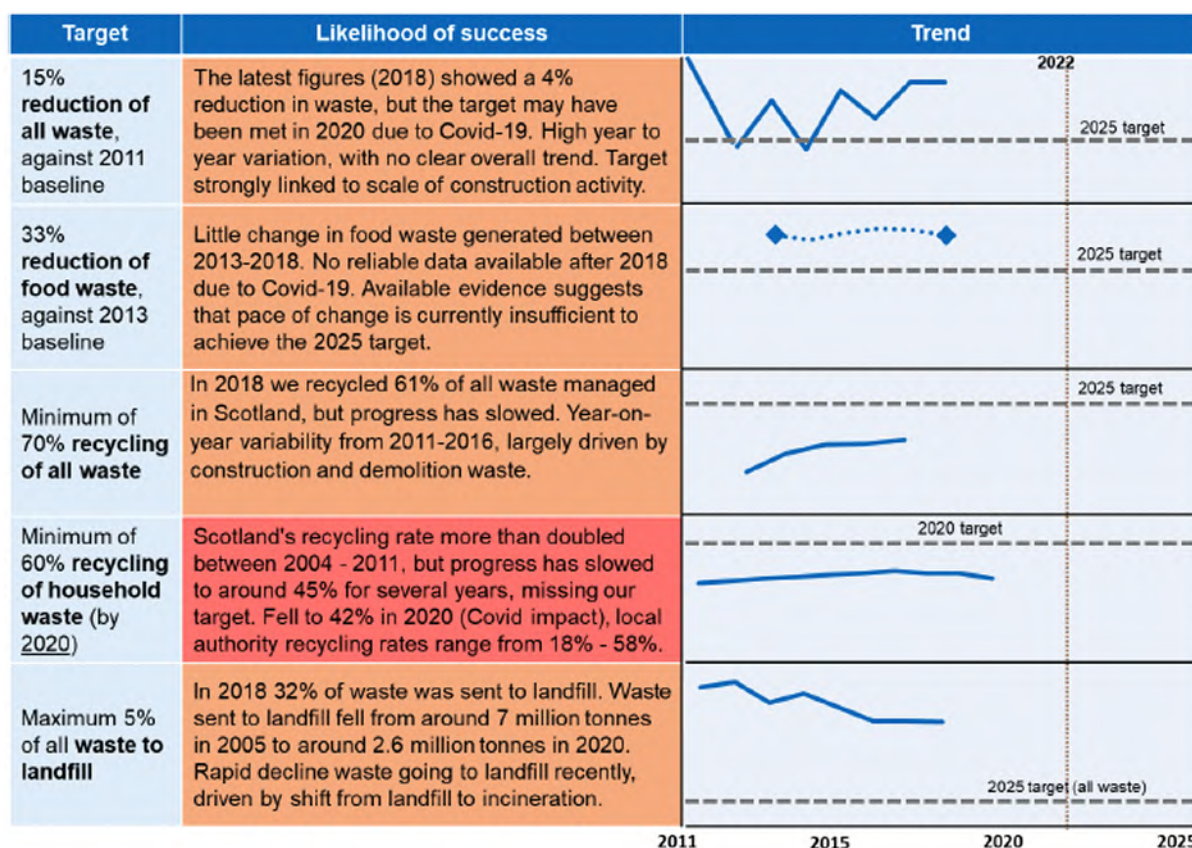
- banning biodegradable municipal waste to landfill by 2025;
- reducing waste sent to landfill by 5% by 2025;
- recycling 70% of all waste by 2025;
- reducing the amount of waste produced by 15% compared to 2011 levels.⁷⁰

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.

Progress towards Scotland's 2025 waste and recycling targets.⁷¹



⁷⁰ Scottish Government (2022) *Consultations on the Circular Economy* <https://www.gov.scot/news/consultations-on-circular-economy-launched/#:~:text=Scotland's%20circular%20economy%20targets%2C%20outlined,of%20all%20waste%20by%202025.>

⁷¹ Scottish Government (2022) *Delivering Scotland's circular economy - route map to 2025 and beyond: technical annex* <https://www.gov.scot/publications/technical-annex-delivering-scotlands-circular-economy-route-map-2025-beyond/pages/2/>

What We Are Doing

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 2020 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 a strong opportunity to reduce emissions.

Zero Waste Scotland 2020 data ⁷²						
	Generated (tonnes)	Recycled (tonnes)	Recycled %	Landfilled (tonnes)	Landfilled %	Carbon Impact (tCO ₂ e)
Clackmannanshire	23,221	11,296	48.6	11,296	51.3	55,171
Average Scotland	-	-	42.0	-	27.2	1.07

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. It is intended to take a report to Council in October 2022, which will make recommendations about driving behavioural change by residents, to increase recycling and reduce the quantity of residual waste requiring disposal.

The 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 started 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 is currently drafting 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.

Future Opportunities

Opportunities for contributing to net zero targets through in this area include:

- Incorporating Waste Reporting into the Public Sector Climate Change Duty Report process and creating an emissions reduction route map for reaching net zero by at least 2040.
- Ensuring that decisions on future management are based on the most accurate and up-to-date data possible to ensure climate change mitigation is maximised.

⁷² Zero Waste Scotland (2022) 2020 Household waste data
<https://www.sepa.org.uk/environment/waste/waste-data/waste-data-reporting/household-waste-data/>

- Exploring the development of a route map to zero landfill and zero incineration of waste while identifying pragmatic opportunities for emission reductions throughout the transition.
- Coordinating information produced by Zero Waste Scotland and other partners so links can be made 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.
- Ensuring that Council services such as Housing, Property and Environment manage the wastes that they generate more sustainably, seeking to maximise recycling and reduce the amount of residual waste requiring disposal.
- Recognising that the circular economy is an economic model which will play a significant role in the transition to net zero and adapting to climate change while ensuring that the principles are reflected in Council policies, reports and strategies.
- Difficult decisions need to be considered such as:
 - o fines for inappropriate disposal of waste following information campaigns to raise awareness – this has been a key approach in Wales for achieving some of the highest recycling rates in the world;
 - o restricting residual waste capacity to drive behavioural change and increase recycling participation.
- Help residents and community groups learn green skills as part of the transition to circular economy such as food growing and composting, how to recycle waste properly and how to protect wildlife.
- Work with Clacks Good Food Partnership to set out targets to reduce food waste.
- Identifying additional means of reducing the amount of waste going to landfill and increasing recycling and adding these actions to the Climate Emergency Action Plan. Potential examples include:
 - o stop using single-use plastics and non-recyclable materials;
 - o disseminate information of ways to reduce waste to partners;
 - o support communities in reducing waste and learning green skills;
 - o support businesses in identifying circular economy technologies;
 - o Work with business to encourage and enable consumers to share, lease and use products for longer whilst discouraging disposable business models;
 - o Ensure policies drive more resource-efficient construction and the use of low-carbon materials;
 - o Support businesses in identifying and progressing circular business models.

Theme 4: Biodiversity, Carbon Storage and Agriculture

There are strong parallels between the grave observed changes to the climate described in Section 3 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.**⁷³

Additionally, a recent survey by Bugs Matter found a **decline of almost 60% in flying insects in the UK in the last 20 years.**⁷⁴ 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 *"[c]limate 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."*⁷⁵

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 is therefore fundamental to climate resilient development. Recent 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.⁷⁶

Accordingly, land is an essential resource to tackling climate change. The table below highlights how 3.7 MtCO₂e was extracted from Scotland through forestry and land use in 2020 – this equates to 9.25% of Scotland's total emissions for 2020.

Scottish Greenhouse Gas Emissions 2020 in MtCO 2e⁷⁷

⁷³ WWF (2021) *A warning sign: where biodiversity loss is happening around the world* <https://www.worldwildlife.org/magazine/issues/summer-2021/articles/a-warning-sign-where-biodiversity-loss-is-happening-around-the-world>

⁷⁴ Buglife (2022) *Bugs Matter survey finds that UK flying insects have declined by nearly 60% in less than 20 years* <https://www.buglife.org.uk/news/bugs-matter-survey-finds-that-uk-flying-insects-have-declined-by-nearly-60-in-less-than-20-years/>

⁷⁵ NatureScot (2022) *Climate change impacts in Scotland* <https://www.nature.scot/climate-change/climate-change-impacts-scotland#:~:text=Climate%20change%20is%20the%20single.and%20animals%20grow%20and%20thrive.>

⁷⁶ IPCC (2022) *Climate Change 2022: Impacts, Adaptation and Vulnerability* <https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/>

⁷⁷ Scottish Greenhouse Gas Statistics 2020 (2022) <https://www.gov.scot/publications/scottish-greenhouse-gas-statistics-2020/pages/3/>

	Carbon Dioxide	Methane	Nitrous Oxide	Total
Land use, land use change and forestry	-3.7	3.2	1.0	0.5

In addition to capturing and storing carbon, trees and woodland reduce the impacts of flooding; provide habitats for displaced species while providing shade in a warming climate, which will be particularly important during heatwaves.

There are also health based benefits to increasing natural space⁷⁸ and negative impacts to health from increased urbanisation of natural spaces including exposure to poor air quality.⁷⁹ Additionally, blue spaces, defined as all forms of natural and manmade surface water, have a positive link with health.⁸⁰

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.

The UN Food and Agricultural Organisation has calculated that the world's agri-food systems account for 31% per of human-caused GHG emissions.⁸¹ Emission are disproportionately skewed towards certain types of food, in particular, red meat (see the below table).

⁷⁸ Salmond JA, Tadak M, Vardoulakis S, et al. (2016) *Health and climate related ecosystem services provided by street trees in the urban environment*. Environmental Health 15 (Suppl 1): 36

White MP, Alcock I, Grellier J, et al. Spending at least 120 minutes a week in nature is associated with good health and wellbeing. Nature Scientific Reports 2019 9: 7730

⁷⁹ Jackson LE. (2003) *The relationship of urban design to human health and condition*. Landscape and Urban Planning:64:191–200

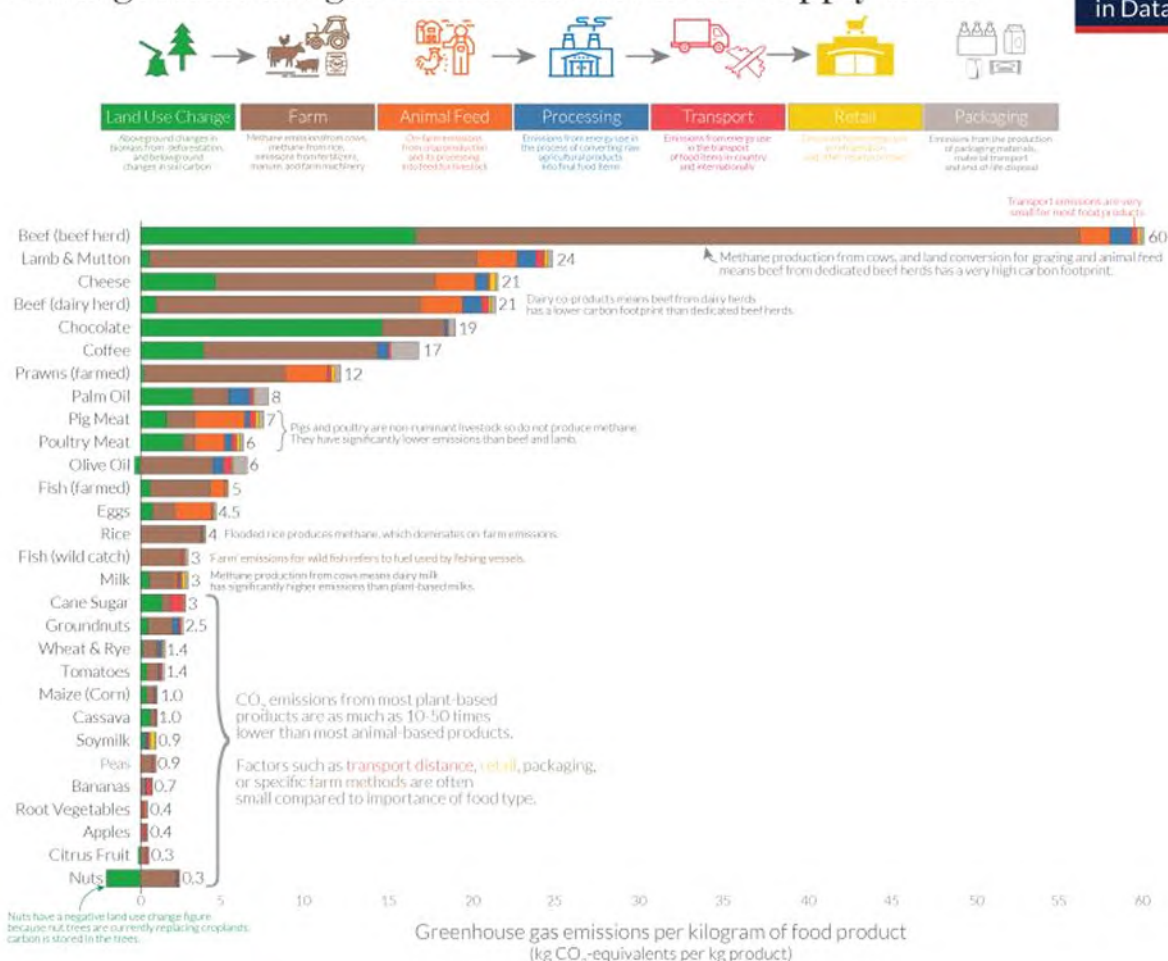
⁸⁰ Smith N, Georgiou M, King AC, et al. (2021) *Urban blue spaces and human health: A systematic review and meta-analysis of quantitative studies*. Cities 119 103413

Lovell R, Depledge M, Maxwell S. Health and the natural environment: a review of evidence, policy, practice and opportunities for the future. Department for Environment, Food and Rural Affairs; 2018.

<https://ore.exeter.ac.uk/repository/handle/10871/36923>

⁸¹ UN (2021) *New FAO analysis reveals carbon footprint of agri-food supply chain*
<https://news.un.org/en/story/2021/11/1105172>

Food: greenhouse gas emissions across the supply chain



Note: Greenhouse gas emissions are given as global average values based on data across 38,700 commercially viable farms in 119 countries.
 Data source: Poore and Nemecek (2018), Reducing food's environmental impacts through producers and consumers. Science. Images sourced from the Noun Project.
 OurWorldinData.org - Research and data to make progress against the world's largest problems. Licensed under CC BY by the author Hannah Ritchie.

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.⁸³ As highlighted by the Our World In Data Table of food's emission intensity, what people eat is significantly more important than where something is sourced from an emissions point of view.

Legislation

- 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:
 - o ensuring compliance with the legislation and helping Scotland to meet its national and international biodiversity targets;

⁸² Our World In Data (2020) *You want to reduce the carbon footprint of your food? Focus on what you eat, not whether your food is local* <https://ourworldindata.org/food-choice-vs-eating-local>

⁸³ Climate Change Committee (2019) *Net Zero – The UK's contribution to stopping global warming* <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>

- 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 Good Food Nation Bill passed in 2022 to create 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. A Food Commission will also be established to scrutinise and make recommendations of the good food nation plans and progress reports.⁸⁴
- 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.
- 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.
- The Scottish Government's Programme for Government 2021-22 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.

What we are doing

Clackmannanshire Council published 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 work with communities, promote awareness of conservation work and manage sites to conserve and enhance biodiversity in the

⁸⁴ Scottish Government (2022) *Good Food Nation Bill Passed* <https://www.gov.scot/news/good-food-nation-bill-passed/>

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 includes:

- 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.⁸⁵

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.

An application was made to the Woodland Trust’s Emergency Tree Fund at the end of 2021 for the establishment of a Forth Climate Forest. 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.

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

Future Opportunities

⁸⁵ For further information see <https://www.clacks.gov.uk/environment/countrysiderangerservice/>

- Identify actions to enhance carbon capture and storage potential in Clackmannanshire through initiatives such as forestry and peatland restoration by both; using Council land assets and working with other land managers.
- Undertake Net Negative emission / Carbon Sequestration quantification study: 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.
- Ensure that land is considered as a finite resource with a significant proportion reserved for biodiversity, sustainable food production and nature-based solutions.
- Work with Scottish Forestry and private forestry to identify biodiversity and afforestation to contribute to net zero targets, deliver greater climate resilience and contribute to the Scottish Government's targets of 12,000 hectares of woodland being created annually.
- Work with community groups to promote sustainable forest management, informed woodland plantation (the right types of tree in the right place) and increase green spaces that are available while protecting existing wild spaces, coastlines and woods from planned development or against flood risk.
- Gather feedback on the Local Biodiversity and Action Plan in order to develop specific action point that could be integrated to the Climate Emergency Action Plan.
- To investigate and produce recommendations on the creation of a Pollinator Strategy and long term plan to deal with the decline in pollinators.
- Review the Council's local biodiversity action plan to include aims/objectives and actions which will help protect and enhance pollinator habitats and species.
- 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.
- Explore cut-and-collect mowing to cultivate biodiversity, reduce the frequency of mowing and improve wildflower corridors.⁸⁶
- Since light pollution is a driver of insect declines,⁸⁷ explore using tinted coloured filter over white lights to turn them orange in order to not affect night time insects, particularly pollinators, and birds.
- Explore ways of improving quality of water and soils and developing other measures to reverse biodiversity loss and habitat declines.
- Involve communities in landscape management, where possible support community land ownership and consider more holistic, landscape scale restoration projects with contractors
- Align workforce and job creation plans with the Local Biodiversity Action Plan and other nature-based solution and natural capital plans.
- Ensure biodiversity is entrenched on Town Centre Masterplans to include the availability of greenspace, parks linkages and greening options through a place-based lens.
- Provide support mechanisms for communities and individuals to deliver public climate benefits through land ownership.

⁸⁶ See https://butterfly-conservation.org/sites/default/files/2019-06/building_sites_for_butterflies.pdf

⁸⁷ Biological Conservation (2020) *Light pollution is a driver of insect declines*
<https://www.sciencedirect.com/science/article/abs/pii/S0006320719307797?via%3Dihub>

- Collaborate with planning colleagues to consider means of greening towns through tree planting and food planting.
- Continue to identify funding opportunities, such as the Nature Restoration Fund, to increase negative emission technology in the area while creating more green space

Theme 5: Adaptation, Planning and Organisational Capacity

Approximately 3.3 to 3.6 billion people live in contexts that are highly vulnerable to climate change while a high proportion of species are vulnerable to climate change. Current unsustainable development patterns are increasing exposure of ecosystems and people to climate hazards⁸⁸. There are feasible and effective adaptation options which can reduce risks to people and nature.⁸⁹

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 (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 1884.⁹⁰

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

Climate Projections for Scotland⁹¹

- 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

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.

⁸⁸ IPCC (2021) *Climate change widespread, rapid, and intensifying – IPCC* <https://www.ipcc.ch/2021/08/09/ar6-wg1-20210809-pr/#:~:text=Faster%20warming,C%20will%20be%20beyond%20reach.>

⁸⁹ IPCC (2022) *Climate Change 2022: Impacts, Adaptation and Vulnerability* <https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/>

⁹⁰ Adaptation Scotland (2022) *Climate trends and projections* <https://www.adaptationscotland.org.uk/why-adapt/climate-trends-and-projections#:~:text=Key%20long%2Dterm%20climate%20change,will%20be%20warmer%20and%20drier>

⁹¹ ⁹¹ Adaptation Scotland (2022) *Climate trends and projections* <https://www.adaptationscotland.org.uk/why-adapt/climate-trends-and-projections#:~:text=Key%20long%2Dterm%20climate%20change,will%20be%20warmer%20and%20drier>

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



Legislation

The new National Planning Framework (NPF4) is being finalised following a consultation in 2022 with local authorities and other partners. The Scottish Government's Programme for Government 2021 notes that it set out 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.”

What we are doing

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.

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 is needed but this project has the potential to substantially reduce the risk of flooding if it can be achieved.

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



2021

We are also 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.

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.”

Accordingly, establishing Climate Change Forums across the five wards of Clackmannanshire in addition to coordinating adaptation 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.

This 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.⁹² 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.^{93, 94}

Future Opportunities

There are a range of strong opportunities for adaptation, planning and organisational capacity to contribute to climate change mitigation and resilience. They include the following:

- Prioritise all decisions on new infrastructure investment based on their contribution to an inclusive net zero carbon economy.
- 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.
- Front-loading spending on retrofitting and energy efficiency models presents an opportunity to make significant long-term cost savings that would more than pay for themselves while reducing emission on the Council's portfolio.
- Make the climate emergency a guiding principle in all planning decisions while involving climate experts in planning.
- Facilitate adaptation to climate change by considering the flood risk and protecting the natural capital in major spending and planning decisions.
- Divest from fossil fuels particularly public sector pension funds.
- Strongly reflecting climate change in all committee reports.
- Establish Carbon Budget for Clackmannanshire's emission trajectories for net zero to establish implications of certain time scales.
- in large scale transformation plans for transport, buildings and green spaces, business cases should specifically set out how the initiatives will contribute to reduction of carbon emissions and to climate adaptation;
- Use Adaptation Scotland's benchmarking tool to undertake an adaptation assessment. This will allow progress in relation to adaptation measures to be tracked in addition to the identification of gaps and potential areas for future progress.

⁹² Climate Change Committee (2019) *Net Zero – The UK's contribution to stopping global warming* <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>

⁹³ Durcan D, Bell R. (2015) *Reducing social isolation across the life course*. London: Public Health England; www.gov.uk/government/publications/local-action-on-health-inequalities-reducing-social-isolation

⁹⁴ Dodds S. Social (2016) *Contexts and Health* Glasgow Centre for Population Health https://www.gcph.co.uk/publications/620_social_contexts_and_health

- 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;
- Ensure the Council is investment ready to leverage private sector investment, job creation and strengthen applications that align with the UK government's industrial strategy.
- Introduce Carbon Budgeting with ongoing baselining where appropriate.
- 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. 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.*"⁹⁵ This could include;
 - o school resources
 - o resident emission reduction ideas (waste, recipes, food charter, energy savings etc.)
 - o business resources and links
- 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.
- Create green apprenticeships for school leavers and coordinating opportunities to develop a career ladder for people not in education, training, or work to contribute to land restoration, rewilding, climate change mitigation and adaptation projects to ensure fresh ideas and approaches influence the Council's approach to decarbonisation.
- Give a platform to key influencers of green behaviours amongst our employees, businesses, young people and residents.
- Creating an annual Climate Change Refresher module that incorporates Clackmannanshire's emission reduction targets in addition to creating means of escalating employee ideas for decarbonisation and cost savings opportunities within the Council.
- Embed climate change adaptation considerations, and potential responses such as habitat networks and green networks, into wider land use planning decisions using Forestry and Woodland Strategies, regional land use strategies, and Strategic and Local Development Plans and development masterplans.
- Encourage the rotation of Green Champion roles amongst staff to help normalise Climate Change and Sustainability practices across the Council.
- Be ready to leverage private sector investment, create green jobs, upskill the population in Clackmannanshire, creation and strengthen applications that align with the UK government's industrial strategy.
- Enshrine the sustainable transport hierarchy into long-term Town Centre Masterplans to act as a regeneration blueprint that could transform town centres to promote active travel and public transport while conserving their heritage.
- 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.

⁹⁵ Audit Scotland (2022) *Addressing climate change in Scotland A summary of key recommendations for public bodies* <https://www.audit-scotland.gov.uk/publications/addressing-climate-change-in-scotland>

Theme 6: Economic Development and Sustainable Procurement

Industry emissions are by far the largest area of Clackmannanshire's carbon footprint - accounting for 43.3% of overall emissions followed by commercial gas and electricity at 20.8% in 2020.

Combined industry and commercial gas and electricity therefore made up 64.1% of emission in Clackmannanshire in 2020, or approximately 326,400 tCO₂e.

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.

Legislation

The Scottish Government's National Strategy for Economic Transformation⁹⁶ 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:

- **A Community Wealth Building Bill** which is scheduled to be taken forward in this Parliamentary term, to enable more people and local communities to have a stake in, own, access and benefit from the wealth the Scottish economy generates. The Bill will cement and enhance the role that councils, health boards and other anchor public sector organisations play in supporting economic development and advancing a wellbeing economy. It will also legislate for them to consider their economic footprint and role within a wider place system. The Scottish Government will also publish a 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. This could include taking 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. Clackmannanshire has a role in driving demand for high-value green jobs, support reskilling and retraining.
- **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;

⁹⁶ Scottish Government (2022) *Scotland's National Strategy for Economic Transformation*

- 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.⁹⁷

The Scottish Government recognises that the climate criteria in public procurement exercises increases the ask of suppliers. Consequently, they are developing 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.

They are also developing guidance to suppliers with a link to the Climate Literacy eLearning while providing Bidder Climate Change Plan Templates and accompanying guidance on how to populate these in the Greenhouse Gas Reporting: conversion factors 2021 report⁹⁸ and developing pre-filled examples.

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.⁹⁹

Additionally, while 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.

What we do now

Clackmannanshire Council's Local Development Plan includes a strategic objective centred on environmental sustainability. Specific actions are included under the objective below.

- 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;

⁹⁷ Scottish Government (2022) *Public procurement - taking account of climate and circular economy considerations: SPPN 3/2022* <https://www.gov.scot/publications/public-procurement-taking-account-of-climate-and-circular-economy-considerations-3-2022/>

⁹⁸ See [Greenhouse gas reporting: conversion factors 2021](#)

⁹⁹ See [Climate and Energy](#), [Carbon in Production](#), [Vehicle Emissions](#), [Climate Change Adaptation](#).

- 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 businesses across Clackmannanshire to support economic growth, employability, skills development and community wealth building.

Specific work related to climate change that the team undertake includes developing projects in partnership with Stirling University, Forth Valley Chamber of Commerce and Business Gateway to provide support to create a net zero or low carbon strategy in small and medium enterprises (SMEs) and signposting businesses to green funding opportunities.

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.

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 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.

In January 2019 the Council approved the procurement strategy 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 following sections are particularly relevant to climate change:

- section 6.7 states that any procurement decision will aim to minimise harm to the environment and to promote conservation of natural resources;
- section 6.10 states that in higher value contracts, the Council will challenge contractors to identify ways in which they can contribute to improving the economic, social and environmental well-being of Clackmannanshire;
- section 6.15 states that section 9 of the Procurement Reform (Scotland) Act 2014 places a sustainable procurement 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 Council area.

The Council's Procurement Strategy Action Plan also contains measures to:

- 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.

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 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.¹⁰⁰

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.

¹⁰⁰ See <http://www.scotland-excel.org.uk/home/Contractregister/Contract-register.aspx>

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.

Future Opportunities

- Review the Council's Local Development Plan and Procurement Plans to identify conflicts or ambiguity with climate change targets and amend as required.¹⁰¹
- Commit to procuring green energy and good food such as in the UK Government's Eatwell Guide¹⁰² – since councils make major energy purchases and has significant influence over food bought in schools this has significant health and emission reduction potential.
- Explore whole lifecycle costing as part of sustainable procurement.
- The Audit Scotland Report notes that the public sector has a strong opportunity to lead by example. For instance, 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.¹⁰³
- Continue to explore options to securing funding to support businesses with carbon accounting, establishing net zero targets and decarbonisation.
- Develop a Carbon Charter and creating a Green Pledge with carbon certification for businesses¹⁰⁴. Commitments could include:
 - o Switch to a 100% green energy supplier at contract renewal or earlier;
 - o Review and reduce energy use: such as by switching off IT at the end of the day, using energy efficient LED bulbs, switching the heating down 1 / 2°C;
 - o Encourage employees to use active transport;
 - o Review work practices, encourage working from home when possible;
 - o Switching to green products, paper waste instead of plastic where possible;
 - o Re-use and recycling equipment, waste and products.
- Respond to businesses' input at the Climate Change Forums and developing demand-led initiatives such as:
 - o hosting green networking events;
 - o identifying green businesses as role models for other organisation exploring emissions reductions;
 - o securing funding for or signposting to partner organisations' energy reduction initiatives;
 - o escalating green skills gaps to learning providers and Scottish Government to maximise economic productivity.

¹⁰¹ Audit Scotland (2022) *Addressing climate change in Scotland A summary of key recommendations for public bodies* <https://www.audit-scotland.gov.uk/publications/addressing-climate-change-in-scotland>

¹⁰² See <https://www.gov.uk/government/publications/the-eatwell-guide>

¹⁰³ Audit Scotland (2022) *Addressing climate change in Scotland A summary of key recommendations for public bodies*, <https://www.audit-scotland.gov.uk/publications/addressing-climate-change-in-scotland>

¹⁰⁴ See example in Midlothian delivered in partnership with Business Gateway <https://locateinmidlothian.co.uk/midlothian-business-green-pledge/#:~:text=The%20Midlothian%20Business%20Carbon%20Charter,we%20can%20achieve%20this%20together.>

- Support and signpost businesses in Clackmannanshire in securing funding from post-common agricultural policy (CAP) subsidy regime and through the Just Transition Plan for land and agriculture.
- Explore requirements of procurement processes and business support to prioritise businesses with emission reduction plans.
- Explore making non-environmentally focused business support conditional to ensure that companies align with the transition to net zero.

8. 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.¹⁰⁵

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 identifying specific emission reduction opportunities under six themes that will be operationalised in the Climate Emergency Action Plan.

A series of Climate Change Forums will also be held across Clackmannanshire to empower young people, residents and businesses to contribute to and shape Clackmannanshire's net zero targets.

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.

¹⁰⁵ Progress in reducing emissions in Scotland, 2021 Report to Parliament, Climate Change Committee, December 2021