CLIMATE CHANGE STRATEGY STRATEGIC ENVIRONMENTAL ASSESSMENT

ENVIRONMENTAL REPORT

16 SEPTEMBER 2024

Be the Future

Clackmannanshire Council

CONTENTS

1. Introduction

a. Requirement for a SEA

1.1 The Environmental Assessment (Scotland) Act 2005 (referred to hereafter as "the 2005 Act") requires that development plans/ programmes/ strategies (PPS) prepared by public bodies be subject to Strategic Environmental Assessment (SEA). Clackmannanshire Council is in the process of drafting the Climate Change (CC) Strategy. It is the view of the Council that this initiative is likely to result in significant environmental effects, the majority of which is anticipated to be positive, especially for the climatic factors. As part of the preparation of the Interim Climate Change Strategy for the Clackmannanshire area, Clackmannanshire Council is carrying out a SEA for this document.

1.2 The SEA Act defines the key stages of SEA as:

Screening	Assessing whether the Interim Climate Change Strategy is expected to have its likely environmental effects, if implemented and whether conducting a Strategic Environmental Assessment (SEA) is necessary.
Scoping	Setting out sufficient information on Clackmannanshire Council Climate Change Strategy to enable the Consultation Authorities to form a view on the appropriateness of the scope, level of detail and the consultation period proposed for the Environmental Report.
Environmental Report	Establishing the likely significant (positive and negative) environmental effects of implementing a plan. The effects of a plan and any potential reasonable alternatives should be considered at this stage, along with viable mitigation measures to avoid, reduce or offset adverse effects.
Post-Adoption	Provides information on the adopted Climate Change Strategy and the SEA Environmental Report, informing how consultation comments have been taken account.
Monitoring	Sets out detailed methods for monitoring the significant environmental effects of implementing Clackmannanshire's Climate Change Strategy.

b. Purpose of the Environmental Report

1.3 SEA is required by the Environmental Assessment (Scotland) Act 2005 (the 2005 Act) and the Environmental Report is a key stage of the process. The main purposes of the Environmental Report are to:

- provide information on the contents of the Climate Change Strategy
- identify, describe and evaluate the likely significant effects on the environment of implementing the Climate Change Strategy
- explore any reasonable alternatives;
- provide an early and effective opportunity for the public and Consultation Authorities to offer views on any aspect of the relevant documents.

c. Structure of the Environmental Report

1.4 The Environmental Report has been prepared in accordance with Section 14(3) of the 2005 Act. The structure of this report is as follows:

Chapter 2 provides a summary of Climate change Strategy.

Chapter 3 provides a summary of the policy and environmental context highlighting the key environmental issues and challenges and the future baseline evolution without the CC Strategy.

Chapter 4 presents the SEA approach, outlining the elements scoped into the assessment, the SEA objectives used in the assessment and the assessment methodology.

Chapter 5 summarises the SEA assessment of the Strategic Actions, alternative scenarios and the cumulative effects assessment for all the Strategic Actions proposed within the Climate Strategy and presents the enhancement recommendations for the CC Strategy Implementation Plan.

Chapter 6 presents the monitoring framework.

Chapter 7 concludes the next steps.

1.5 This environmental report is supported by the following appendices:

Appendix A: Comments Received from the Consultation Authorities on the Screening and Scoping Report

Appendix B: Compatibility analysis of the CC Strategy with other relevant legislation, PPSs and environmental objectives

Appendix C: Environmental Baseline

Appendix D: Assessment of CC Alternatives

Appendix E: Compatibility Analysis of CC Strategy Targets & Themes against SEA Objectives

Appendix F: Evaluation of the Effects of the CC Strategy

d. SEA Activity to date

1.6 *Screening:* The Strategy falls under Section 5(4) of the 2005 Act and a screening was required to assess whether significant environmental effects are likely to happen during the implementation of the Strategy. The Screening Report was submitted as Appendix A of the Scoping Report via Scottish Government's SEA Gateway by the end of March 2024 for consideration by the Consultation Authorities. The Screening Report determined that environmental assessment of the CC Strategy was required, and all Consultation Authorities agreed.

1.7 *Screening determination:* After receiving the recommendations from the Consultation Authorities on the Screening Report, Clackmannanshire Council published a Screening determination report on Council's official website and a local newspaper, informing the public that an SEA will be carried out for the Interim Climate Change Strategy. The Screening determination was also sent to Consultation Authorities via Scottish Government's SEA Gateway by the end of April 2024.

1.8 *Scoping:* Clackmannanshire Council prepared a Scoping Report setting out the proposed assessment approach, scope and level of detail to be included in the Environmental Report and the duration of the proposed consultation upon it. This report was also submitted to the SEA Gateway for consideration by the Consultation Authorities on 22nd of March 2024. The opinion and recommendations of the three Consultation Authorities have been captured in ***Appendix A*** and taken into account in the relevant sections of the report below.

e. Comments on the Environmental Report

1.9 The Environmental Report is being distributed to the Statutory Consultees for comment via the Scottish Government's SEA Gateway. Clackmannanshire Council welcomes the views of the Consultation Authorities on the content of the strategy; the identified and evaluation of the likely significant effects on the environment while implementing the strategy, suggestions on any reasonable alternatives and other views on any aspect of the relevant documents.

1.10 The detailed consultation process with the public and Statutory Consultees is described in *Chapter 7* of this Report.

2. The Climate Change Strategy

a. Climate Change Strategy Overview

2.1 The draft Climate Change Strategy will establish a framework for Clackmannanshire that aims to achieve net zero greenhouse gas emissions for the Council's own operations by 2040 at the latest and for the Clackmannanshire area by 2045 at the latest. By setting ambitious net zero targets and the framework to achieving them, the Strategy will allow the Council 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.

2.2 While the Strategy establishes the policy framework for the Council's Climate Emergency response, the strategic themes will be delivered through theme-specific supporting plans and strategies which will provide the means for a more thorough assessment of each topic and detailed action plans. These supporting plans will complement each other to ensure the strategic themes are both realistic and achievable, targeted across all themes and the whole Council area.

2.3 The scope of the Strategy includes but is not restricted to the Council's duties under the Climate Change (Scotland) Act 2009 amended by Climate Change (Emissions Reduction Targets) (Scotland) Act 2019. This document will supersede and expand upon the previous Sustainability and Climate Change Strategy adopted in September 2010 and reviewed in 2016. At the same time, it aligns with relevant international, national, regional and local legislation and policies.

b. Key Facts

Responsible Authority	Clackmannanshire Council	
Title	Climate Change Strategy	
Purpose	This Strategy sets out a framework for achieving net zero greenhouse gas emissions for the Council's own operations by 2040 at the latest and for the Clackmannanshire wide area by 2045 at the latest. It includes means of aligning all strategic decisions, budgets and approaches of planning decisions with a shift to net zero greenhouse gas emissions. In addition, the Strategy identifies emission reduction opportunities to initiate the development of a thematically based Climate Emergency Action Plan.	
What prompted the Strategy	In response to the Scottish Government's acknowledgment of the Climate Emergency, Clackmannanshire Council is actively pursuing the formulation of a comprehensive Climate Change Strategy, aligning with the requirements outlined in the Climate Change (Duties of Public Bodies: Reporting Requirements) Scotland Order 2015. Endorsed by Clackmannanshire Council on August 19, 2021, this strategy aims to establish a comprehensive framework ensuring that all key decisions, financial allocations, and planning methodologies are geared towards achieving net zero greenhouse gas emissions by the year 2045.	
Subject of the Strategy	Climate Change	
Period covered	2024-2045	
Frequency of updates	The Climate Change Strategy will be renewed in five years, unless there is a change in legislation. The Climate Emergency Action Plan incorporated in the Strategy is a live document, therefore will be reviewed and updated quarterly.	
Area covered	The Clackmannanshire Council municipal area = 159.2 km^2	
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c. Strategy Vision, themes and priorities

2.4 The Strategy sets out a framework for achieving net zero on GHGs emissions:

- for the Council's own operations by **2040** at the latest
- for the Clackmannanshire area by **2045** at the latest.

2.5 The Climate Change Strategy promotes a series of priority strategic themes, an assessment of the current baseline of GHG emissions, governance arrangements, specific actions across a range of sectors as well as progress monitoring and reporting structures to achieve the set target. The priorities are defined from the consultation within Council Services and Climate Change Forums, which relate to areas where the Council considers it should direct action under each of the priority themes.

2.6 The Climate Change Strategy was developed using a thematic approach. Each theme has means of maximising the financial, economic and social benefits of a transition to net zero. The themes are:

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.

Energy, Heat and Buildings	Biodiversity, Carbon Storage and Agriculture
1. Continue to reduce demand for energy and strive to remove energy waste 2. Maximise energy efficiency in our homes and buildings 3. Deliver a zero-carbon energy system for heating, power and transport while matching local demand with local supply 4. Provide a resilient and secure energy supply 5. Eliminate fuel poverty through improved energy efficiency and the provision of low cost - low carbon energy	1. Protect, restore, and enhance existing ecosystems, habitats, and species 2. Maximise the carbon absorption potential of our natural environment 3. Ensure that everyone can access and enjoy nature 4. Promote good environmental practice within growing spaces and allotments 5. Support innovative solutions for encouraging local food grow
Low carbon Transport	**Adaptation, Planning & Organisational Capacity**
1. Enhance the Road Network for Net-Zero Carbon Travel 2. Boost public transport accessibility, efficiency, and affordability 3. Facilitate and encourage safe active travel options 4. Maximise accessible, inclusive and sustainable travel choices	1. Increase staff and citizens' awareness of sustainability & the impacts of climate risks 2. Increase Clackmannanshire' resilience to flooding and local climate impacts 3. Encourage and support community resilience 4. Ensure sustainability is a key priority in the council
Waste, Recycling & the Circular Economy	**Economic Development & Sustainable Procurement**
1. Enhanced Recycling Infrastructure and Services 2. Foster a circular economy framework for more effective use of resources 3. Minimize the carbon emissions associated with the products and services procured by the council and local community 4. Engage everyone in sustainable waste management 5. Reduce food waste from households, businesses, and institutions.	1. Encourage sustainability -focused businesses 2. Support local businesses to transition to a low-carbon economy 3. Maximise the contribution to environmental benefits through procurement 4. Foster innovation and the adoption of clean technologies

d. Relationship of the Plan with other relevant plans, programmes and strategies

2.7 The 2005 Act requires Responsible Authorities to identify the broader policy context and environmental protection objectives relevant to the Strategy being assessed. The Climate Change Strategy sits within a hierarchy of international, national, regional and local plans, programmes and strategies (PPS) that may affect or influence it, as illustrated in *Figure 1*. Further details are set out in ***Appendix B***.

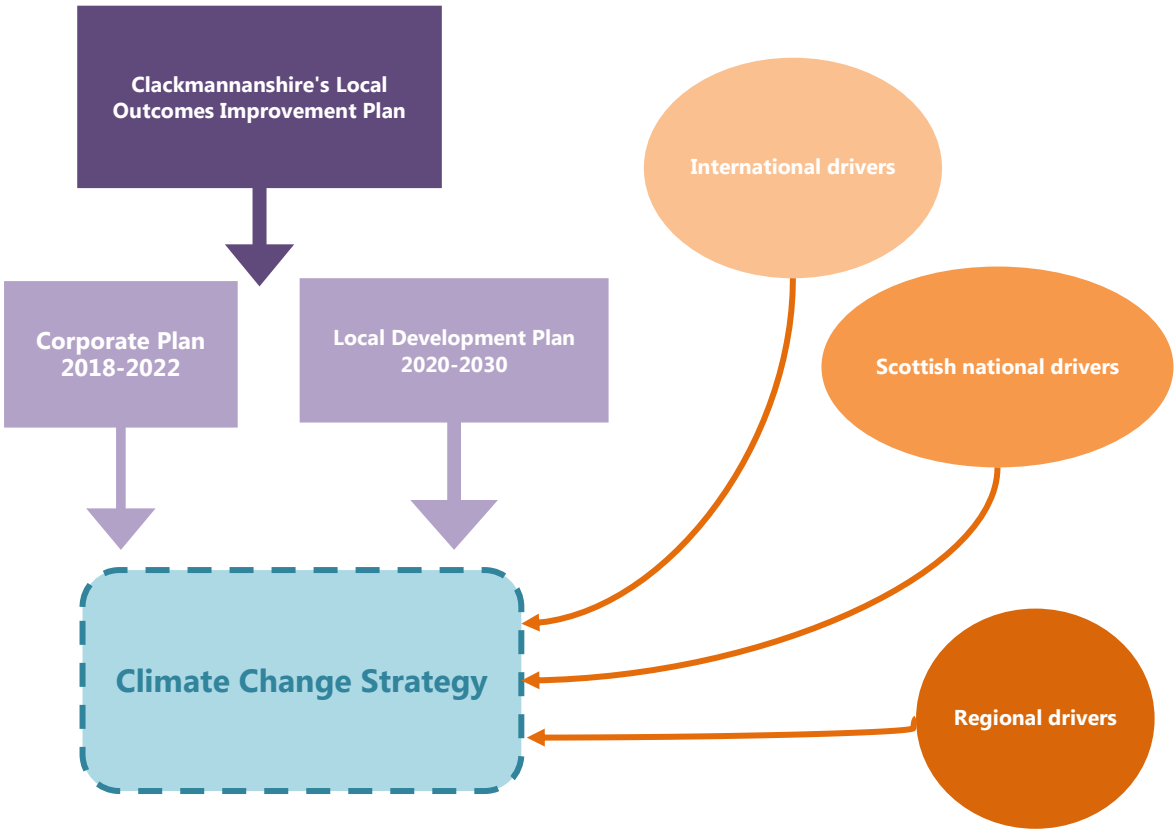

Figure 1 Climate Change Strategy placing within plans hierarchy

2.8 Some of the PPS detailed in ***Appendix B*** have subject to their own Strategic Environment Assessment (SEA), or some PPS which are in drafting stage will undergo this assessment. For this assessment the key SEA findings relevant to the Clackmannanshire Climate Change Strategy were taken into consideration and ensured that environmental issues or mitigation actions identified previously are reflected in the actual SEA. A list of these PPS is shown below:

2.9 **Climate Change Plan Update 2020: SEA Environmental Report**

The update to the CCP focuses on existing carbon reduction policies and proposals and identifies new ones across seven key sectors: electricity, industry, buildings, transport, agriculture, waste, and land use (including LULUCF). It also includes Negative Emissions Technologies for removing carbon dioxide from the air. Overall, cumulative effects are expected to be positive and beneficial for all SEA objectives. However, some potential negative effects include:

- Population and Human Health - localised short-term negative effects from construction activities related to infrastructure and building improvements.
- Soil - Adverse effects on soil quality from widespread adoption of low-carbon and renewable energy technologies, particularly large-scale commercial renewable energy projects like wind farms, which can lead to soil sealing and compaction.
- Water - localised short-term negative effects from construction activities related to infrastructure development and improvement.
- Biodiversity - adverse effects from creating woodlands and peatlands on non-woodland and non-peatland biodiversity, and localised short-term negative effects from construction activities.
- Cultural Heritage - potential negative effects from low-carbon and renewable energy technologies that may alter the setting or appearance of heritage assets, with heightened risks from large-scale transport-related developments.

Mitigation of these adverse impacts can be achieved through planning mechanisms such as Environmental Impact Assessments (EIA) and onsite management measures.

2.10 **Housing to 2040**

The SEA screened out the plan, noting that it may create new expectations, but any environmental implications are already known and relate to existing commitments previously subjected to SEA. The plan outlines steps to deliver high-quality, energy-efficient, zero-carbon housing, aligning with existing targets. This includes working towards net-zero emissions by 2045 as outlined in the Climate Change Plan and Energy Strategy, and making Scotland's homes warmer, greener, and more energy-efficient by 2040 as set out in the Energy Efficient Route Map.

2.11 **Draft Energy Strategy and Just Transition Plan (2023): SEA Environmental Report**

The SEA assesses energy efficiency measures, heat pumps, and heat networks for heating and cooling buildings. It concludes with significant positive effects on climate, population, and health, and minor positive effects on air.

However, some of possible negative effects include:

- Soil and geology impact from ground source heat pumps and heat networks, which vary locally.
- Temporary biodiversity impacts from building energy efficiency improvements.
- Localised cultural heritage impacts from energy efficiency changes or renewable retrofits.
- Localised landscape impacts from energy efficiency improvements or renewable retrofits.
- Mixed impacts on material assets: improved building quality and reduced energy demand, but minor negative effects from resource use.

2.12 **National Planning Framework 4 (2023): SEA Environmental Report**

The NPF4 would prioritize climate change and nature recovery as key guiding principles for all planning and decisions. Emphasizing the protection and enhancement of biodiversity is expected to yield significant long-term positive effects on biodiversity, flora and fauna, and climate factors through new universal policies. Policies aimed at reducing emissions are likely to cumulatively improve air quality, benefiting ecosystems and health, and addressing health inequalities. The focus on climate change adaptation will have positive effects on water by addressing flood risk, water shortages, and coastal erosion. Woodland expansion and green infrastructure proposals can enhance soil stability and drainage, improving place quality. Emphasis on reusing derelict and vacant land is expected to benefit soils, with potential improvements to landscape character depending on the nature and scale of changes.

Potential negative impacts include:

- Air -localised temporary negative impacts on noise and air quality, including dust and odour, during construction of national developments.
- Water – adverse impacts on water from waterfront and port developments during construction and operational phases.
- Soil -potential negative effects on soils from some proposed national developments, requiring management in planning and project consent stages.
- Cultural Heritage - potential negative effects from national development proposals, necessitating management in planning and project consent stages.

Environmental impacts should be considered through SEA and HRA of development plans, as well as the development management process at the individual project level.

2.13 **Clackmannanshire Local Development Plan Review**

The preferred policy and proposal options score well in terms of impacts on climate, air, and population health, with potential improvements in Clackmannanshire's deprived areas. While development may negatively impact soil, it generally avoids prime agricultural land and carbon-rich soils. Potential impacts on habitats and species are mitigated, with opportunities for enhancement. Water impact assessments highlight various potential impacts, necessitating further site-specific assessments and mitigation. The plan's proposals may affect landscape and built heritage, but existing measures and additional mitigation are anticipated to address negative impacts and seek enhancements.

2.14 **Clackmannanshire Zero Waste Strategy 2012 – 2022**

Overall, the implementation of the CCZWS has the potential to have significant environmental effects on biodiversity, population and human health, air, water, soil, climatic factors, material assets and landscape with efforts towards reducing waste to landfill, and utilising resources to their full. The Strategy is not anticipated to have the potential to significantly impact on cultural heritage. Regarding biodiversity, soil, material assets and climatic factors the effects are expected to be positive. However, it is also noted that there are a range of impacts that are uncertain due in part to the high-level policy nature of the strategy, the uncertainty as to whether an impact will occur within or out with the Council

area, and the fact that many of the aims and objectives are targeted on activities where the Council has influence but does not have actual control.

2.15 **Local Transport Strategy 2015 – 2019**

The strategy aims to Improve the quality and provision of transport within Clackmannanshire through guidelines, plans, strategies, assessments, monitoring and modelling. The implementation could bring likely negative secondary and cumulative impacts on noise and vibration from traffic management measures and increased use of the bus and rail network. Secondary and cumulative positive impacts have been identified for air quality and health by reducing the need to travel, promoting active and sustainable travel and removing transport from sensitive areas No synergistic impacts have been identified. However, these adverse impacts can be mitigated through by advance planning such as appropriate assessments, partnership and onsite management measures.

2.16 **Clackmannanshire Biodiversity Action Plan 2012 -2017**

The plan aims to restore and enhance local biodiversity in urban, rural, and marine environments through improved planning, design, and practices. This will enrich wildlife, reduce flooding, help species adapt to climate change, and secure species populations. The actions are expected to have positive effects on local biodiversity, flora and fauna, population health by promoting healthy lifestyles, and soil by protecting sensitive areas to support ecosystem functionality. Cultural heritage conservation activities will be designed to protect and enhance the historic environment. New projects will increase resilience to climate change and enable species to migrate more effectively through the landscape. However, there may be unforeseen effects on water catchment areas from wetland creation projects.

2.17 **Forestry and Woodland Strategy**

The Strategy covers the theme of climate change to help Stirling & Clackmannanshire reduce the impact and better equip the counties to be able to adapt to its changing climate by identifying areas for new woodland creation/existing woodland restoration; highlighting areas for climate change adaptation, particularly those which will contribute to sustainable flood management; supporting the development of biomass for heating; promoting the benefits of carbon sequestration through the Woodland Carbon Code; and advocating forestry and woodland management practices which reduce carbon loss from soils.

3. The environment

a. Area Overview of Clackmannanshire

3.1 Clackmannanshire is Scotland's smallest council area in terms of size (159.2 km^2) and population (51,540) based on National Record Scotland Statistics. The Council borders 3 other councils: Stirling, Fife and Perth and Kincross *(Figure 2)*. Despite its diminutive stature, Clackmannanshire holds a rich historical and cultural significance. Nestled amidst the picturesque landscapes of Central Scotland, it boasts a blend of natural beauty, industrial heritage, and a strong sense of community.

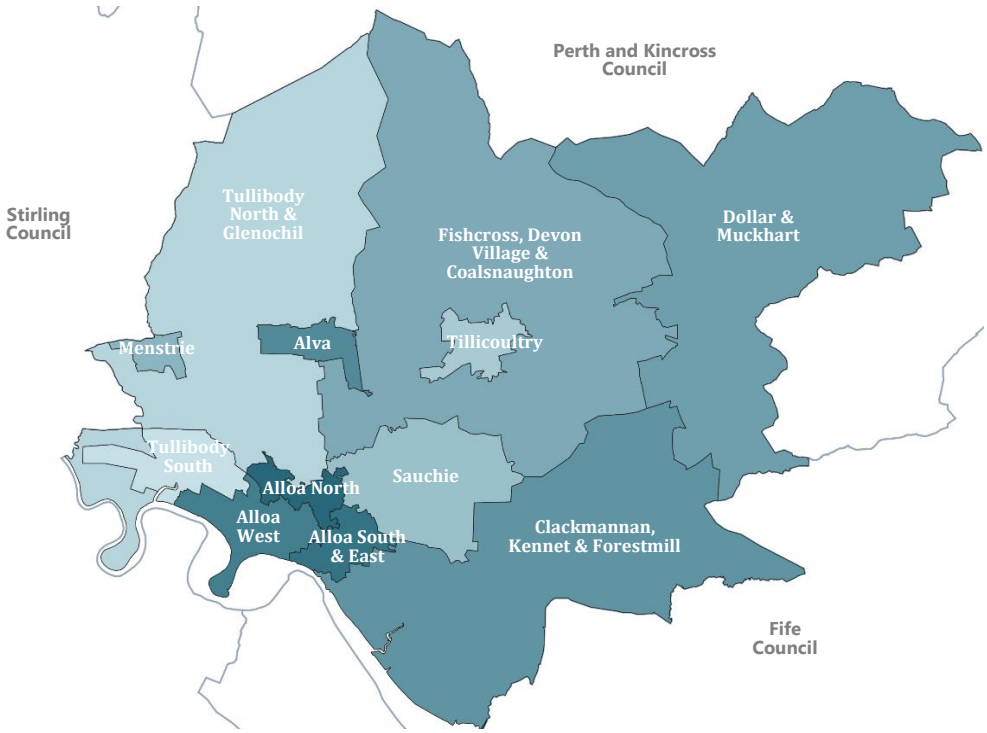

Figure 2 Administrative map area of Clackmannanshire Council and the county areas

3.2 Located in the heart of Scotland, Clackmannanshire is bordered by the majestic Ochil Hills to the north and the River Forth to the south. Its landscape is characterized by rolling hills, lush greenery, and the iconic sight of the River Forth meandering through the valley. The area encompasses various towns and villages, including Alloa, the administrative center, Tillicoultry, Alva, and Tullibody.

3.3 Historically, Clackmannanshire has been associated with industries such as textiles, mining, and brewing. While these sectors have seen decline, the area has diversified its economy to include sectors such as tourism, renewable energy, and manufacturing. Alloa has witnessed significant investment in recent years, with the rejuvenation of its waterfront area and the establishment of new businesses.

3.4 Clackmannanshire prides itself on its strong sense of community spirit and cultural heritage. The area hosts various events and festivals throughout the year, celebrating its history, traditions, and creativity. Community organizations play a vital role in fostering connections

and providing support to residents. Additionally, Clackmannanshire boasts a rich cultural scene, with theatres, art galleries, and museums showcasing local talent and history.

3.5 The natural environment is a cherished asset in Clackmannanshire, with numerous parks, nature reserves, and outdoor recreational areas for residents and visitors to enjoy. The Ochil Hills provide opportunities for hiking, mountain biking, and wildlife observation. The River Forth offers fishing and boating activities, while the county's parks and green spaces provide tranquil settings for relaxation and leisure pursuits.

3.6 Clackmannanshire benefits from excellent transportation links, with major road and rail networks connecting it to nearby cities such as Stirling, Edinburgh, and Glasgow. The area is also served by local bus services, providing convenient access to amenities and attractions within the county and beyond.

b. Environmental Baseline and Relevant Environmental Conditions, Problems and Trends

3.1 Schedule 3 of the 2005 Act requires that the Environmental Report includes a description of "the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme" and "the environmental characteristics of areas likely to be significantly affected".

3.2 Baseline data were collated to summarise the key environmental characteristics of the Clackmannanshire Council area, to understand the relevant aspects of the current state of the environment focusing on SEA issues and in particular any existing environmental problems and characteristics of areas likely to be significantly affected *(Table 2)*. Schedule 3 of the Environmental Assessment (Scotland) Act 2005 requires the Climate Change Strategy to be assessed against the following environmental issues:

- Biodiversity, flora and fauna
- Population and human health
- Soil
- Air
- Water
- Climatic factors
- Material assets
- Cultural heritage
- Landscape

3.3 Appropriate baseline information is important to allow a 'Baseline Case' option to be developed. The Baseline Case will be used in the SEA assessments, as a reference to help highlight environmental problems risks and opportunities. The Baseline Case can help extrapolating how that baseline might evolve with or without the CC Strategy. A detailed environmental baseline is provided in ***Appendix C*** of this report, while a summery with the main indicators is shown below in *Table 1*:

Table 1 Summary of baseline environmental information for the Clackmannanshire Council area

Environmental Topic	Key indicator/issue	Baseline – key points	Problem	Supporting data	Implications for the CC Strategy
Biodiversity, fauna & flora	International, National and Local Natural Heritage Designations Priority habitats and species Habitat action plans	• 10 Sites of Special Scientific Interest (SSSI's) • 1 Special Protection Areas (SPA) • 1 Ramsar Sites • 1 Local Nature Reserve and Country Park • 21 Local Nature Conservation Site	Clackmannanshire includes several protected areas, including the internationally protected Firth of Forth SPA, Ramsar and SSSI. Important habitats include lowland raised bog which is a nationally scarce resource. The decline of biodiversity and associated habitats is a key issue for Clackmannanshire, particularly through development pressure, land management practices and intensification of farming. Significant habitat losses have occurred in relation to native woodlands, species rich grassland and hedgerows. There is a need to increase awareness and understanding of the natural heritage interests to improve the natural heritage of farmed land to improve biodiversity, create or enhance habitat networks, increase landscape diversity and expand native woodlands. Non-native invasive plant and animal species are a threat to local biodiversity. This is particularly a problem along watercourses.	SNH Natural Heritage Trends. Clackmannanshire Biodiversity Action Plan.	Protection and enhancement of designated areas, Firth of Forth SPA and Ramsar and important habitats including protection of ancient woodland. Safeguard and enhance green networks
Population	Demographic profile Accessibility indicators	In 2025 in Clackmannanshire area • Population of 51400 • density 325.4 people/ km^2	Clackmannanshire has slightly lower than Scotland average levels of employment. There is a higher-than-average percentage of adults claiming incapacity benefit or severe disability allowance. Although there is no divergence from the Scotland average for all indicators in the ill health and injury domain, expected years of life in good health are significantly worse than the Scotland averages for men and women. Clackmannanshire also has a significantly worse than average percentage of people living in the 15% most deprived areas of Scotland.	National Records of Scotland Scottish Household Survey	Promoting access to employment, supporting accessibility and health improvement. Supporting urban renewal.
Human Health	Usual mode used	Usual mode of travel to work or school: • 7% active travel (walking or bicycle) • 7% walking • 0% bicycle • 93% other			

Environmental Topic	Key indicator/issue	Baseline – key points	Problem	Supporting data	Implications for the CC Strategy
Soils	Geological designated sites Soil erosion risk Contaminated land affecting land use and quality	Contaminated land surface 3 Geological Conservation Review sites (GCRS) making a special contribution to earth science 37 ha of vacant and derelict land (2022) 19 vacant and derelict sites	The total area of vacant and derelict land in Clackmannanshire has decreased in recent years to 37 hectares, including 29 hectares of derelict land. Soil is at risk from changing vegetation, erosion, acidification, compaction, pollution and sealing from a range of human activities.	Scottish Vacant and Derelict Land Survey 2022	Safeguard or prevent deterioration of soil quality and quantity including a balance in the use of vacant and derelict land. Minimise greenhouse gas emissions from natural sources including enhancement and maintenance carbon sequestration within carbon-rich soils.
Water	Water quality Flood risk	The 24 watercourses/sections monitored by SEPA in Clackmannanshire had the following overall surface water quality in 2021: High x 1, Good x 10, Moderate x 8 and Poor x 5	The dominating water bodies in Clackmannanshire are the River Devon, River Black Devon and River Forth. The overall status of the 14 classified bodies is generally moderate to good in Clackmannanshire's watercourses. 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 potential flood risk across Clackmannanshire falls within the two Potential Vulnerable Areas (PVAs): (09/05) Hifffoots villages	SEPA River Basin Management Plan Maps 2022 data SEPA Flood Risk Management Plan Forth Local Plan District	Protection and enhancement of water status and avoidance of flood risk areas and areas which would contribute to increased flood risk
Climatic factors	Area-wide greenhouse gas emissions	• 9.9 tCO_{2e} per capita emissions in 2021 • 290.4 tCO_{2e} industry total • 9.1 tCO_{2e} Commercial Gas & Electricity Total • 12.9 tCO_{2e} Public Sector Total • 81.1 tCO_{2e} Domestic Total • 65.7 tCO_{2e} Transport Total • 24.3 tCO_{2e} Land use & forestry (Net Emissions) • 23.7 tCO_{2e} Agriculture Total • 4.8 tCO_{2e} Waste Management Total	Clackmannanshire's is likely to experience warmer, drier summers and warmer, wetter winters on average, with extreme heat and precipitation events becoming more frequent, and severe weather conditions growing more intense. Clackmannanshire's per capita emissions, at 9.8 tCO_2e, are higher than the Scottish average of 7.1 tCO_2e. Additionally, out of the 32 Scottish local authorities, Clackmannanshire has the 11th highest per capita emissions.	Met Office DEFRA	The main purpose of the CC Strategy is to consider how Council, community, and partner initiatives can: Minimize emissions and enhance the capture and storage of climate-altering gases

Environmental Topic	Key indicator/issue	Baseline – key points	Problem	Supporting data	Implications for the CC Strategy
Air quality	NO_2 and PM10 monitoring. Air Quality Management Areas (AQMA) Annual traffic by vehicle type	NO_2 concentration • 14.8 µg/m^3 at CM1 • 15.7 µg/m^3 at DT2 • 15.6 µg/m^3 at DT3 • 16.1 µg/m^3 at DT4 • 12.9 µg/m^3 at DT5 • 14.2 µg/m^3 at DT6 • 12.0 µg/m^3 at DT7 PM10 concentration - 11.2µg/m3 at CM1 PM2.5 concentration - 6.4 µg/m3 at CM1 No AQMA designated within Clackmannanshire. In 2023: • cars and taxis • all vehicles	At present, there are no designated Air Quality Management Areas (AQMAs) or formulated action plans within the Clackmannanshire region. Nevertheless, the annual progress report highlights the possibility of increased emissions that could potentially impact air quality, particularly due to factors such as the construction of new roads or commercial developments. In areas where there is a likelihood of air pollution 'hotspots,' monitoring measures will be considered. As of now, all monitored pollutant concentrations remain below the established air quality objectives. Analysis of data spanning the past five years reveals no discernible trend in annual mean NO2 concentrations, while there continues to be a consistent decrease in annual mean PM10 concentrations. However, it is important to acknowledge that further development activities may exert pressure leading to heightened traffic volumes and subsequent emissions. Clackmannanshire's per capita estimated emissions are slightly higher than the Scottish average. Additionally, out of the 32 Scottish local authorities, Clackmannanshire has the 8th highest per capita emissions.	Clackmannanshire Council Annual Air Quality Progress Report 2023 Department for Business, Energy & Industrial Strategy Department for Transport	Consideration will be given to the air quality implications associated with increased vehicle emissions and transition towards sustainable modes of travel.
Material Assets	Household waste	Clackmannanshire household waste rate in 2022: • 51.19% recycled • 48.81% landfilled • 0% other diversion from landfill	Since 2013 the Council has increased the recycling rates, which is above the average recycling rate for Councils in Scotland. However, still a significant proportion of waste was sent to landfill, making this a quite important mission to find opportunities to reduce emissions.		Consideration wiil be given to sustainable use of material resources and reducing waste production.
Cultural Heritage	Designated sites Conservation Area Other cultural heritage features	• 297 listed buildings • 7 conservation areas • 2 listed historical gardens • 13 scheduled ancient monuments • 15 buildings on the Buildings at Risk Register	Cultural heritage features are vulnerable to the cumulative effects of development, land use change and loss of viable use. Damage to archaeology and the historic environment	Stirling and Clackmannanshire Forestry & Woodland Strategy	Consideration will be give to technologies used tec to potential impact on designated sites, listed buildings, conservation areas, archaeological sites and other areas of importance.

Environmental Topic	Key indicator/issue	Baseline – key points	Problem	Supporting data	Implications for the CC Strategy
Landscape	Designated Local Landscape Areas. Landscape Character changes	44.29% of the Council area classified as Local Landscape Areas (LLAs) Land Use/Land Cover (2019): • 2.92% - Inland surface standing and running waters • 3.15% - Raised and blanket bogs • 0.14% - Valley mires, poor fens and transition mires • 16.01% - Dry grasslands • 20.28% - Mesic grasslands • 10.17% - Seasonally wet and wet grasslands • 1.47% - Alpine and subalpine grasslands • 0.96% - Woodland fringes and clearings and tall forb stands • 0.01% - Arctic, alpine and subalpine scrub • 1.01% - Temperate and mediterranean-montane scrub • 3.71% - Temperate shrub heathland • 0.35% - Riverine and fen scrubs • 13.19% - Broadleaved deciduous woodland • 2.48% - Coniferous woodland • 0.45% - Mixed deciduous and coniferous woodland • 0.48% - Young woodland • 0.01% - Cliffs and rock pavements • 13.86% - Arable land • 5.05% - Build-up • 4.32% - Bare field	Landscape changes due to minerals and windfarm development, and forestry and agricultural practices	Stirling and Clackmannanshire Forestry & Woodland Strategy	Consideration will be given to the promotion of the improvement of local environments while preserving the unique character of rural areas. All project proposals should carefully assess both the benefits and potential impacts on the landscape.

c. Likely future changes to the environment without the Plan

3.5 The SEA process requires that the likely impact on the environment, if the Climate Change Strategy was not implemented, is assessed. The IPCC's 2018 Special Report on Global Warming spurred civil society actions and political attention towards climate change. The commitment of not surpassing the 1.5°C limit set in the Paris Agreement necessitates massive societal transformations across energy, agriculture, urbanization, and industry, alongside integrating climate action into broader development plans are needed. Climate change projections and risks for Scotland at a national level, as highlighted in the UK Climate Projections (UKCP18) and Climate Change Risk Assessment (CCRA3), emphasise the unavoidable impact on the environment and biodiversity. Addressing this requires efforts in both mitigating climate change and adapting to its effects.

3.6 There are already many existing sectorial PPS at international, national, regional, and local level with environmental objectives, aiming to prevent exacerbation of current environmental issues. Future changes to the environment are inevitable due to natural processes but also due to human activity unconnected to CC Strategy. The strategy provides a framework of strategic themes and projects aimed at driving transformative change in Clackmannanshire to address the challenges posed by Climate Emergency. As the impacts of a changing global climate become more challenging, not proceeding with the CC Strategy will leave the area ill-prepared to tackle the projected climate changes already built into the system from historic emissions. Without the strategy, the Council, businesses, and communities would miss out on significant health, employment, and environmental opportunities presented by transitioning to a low-carbon, resource-efficient economy.

3.7 In conclusion, not implementing the CC Strategy, there would be little or no co-ordinated action to reduce carbon emissions and help Clackmannanshire to adapt to the potential impacts of climate change. This could lead to a loss of direction and momentum to make the necessary changes to address climate change and expose the vulnerable areas. Potential changes to the environmental baseline in many of this SEA's topic areas without the CC Strategy are listed below in *Table 3.*

Table 3 Likely evolution of the environmental baseline without the CC Strategy

SEA Topic	Likely Evolution of the Baseline without the Climate Change Strategy
Biodiversity flora & fauna	Without the Climate Change Strategy, climate change impacts would be intensified in long-term on biodiversity, including greenspace, designated sites, protected habitats, and species, resulting of: • lack of awareness of the biodiversity crisis • migration and/or loss of species, • damage and/or degradation of habitats, • habitat fragmentation, ect. Despite a range of PPS to tackle these issues, benefits and opportunities that biodiversity and habitats play on local climate change mitigation and adaptation may be missed to without coordinated/aligned actions that the Climate Change Strategy suggests.

SEA Topic	Likely Evolution of the Baseline without the Climate Change Strategy
Population & human health	Without the Climate Change Strategy, climate change impacts will continue to present risks to the physical and mental health of the population. The diminished motivation to reduce carbon emissions and enhance resilience towards climate change may reduce the opportunities to make behavioural and sustainable changes to current practices, leading to less greenspaces and sustainable and healthy forms of travel, which are beneficial to human health. Vulnerable groups and communities in Clackmannanshire may bear the brunt of consequences like extreme weather events, flooding, and compromised air quality. due to lack of adaptation.
Soil	Without the Climate Change Strategy, climate change impacts such as loss of soil function and quality may not be addressed. Continuation of this trend will lead to loss of ground water resource, soil resource and adverse effects on public health. Despite a range of PPS regulations that control the release of substances during construction, remediation of contaminated land and the production and disposal of waste, the benefits of carbon rich soils play in storing carbon and climate change mitigation may be missed.
Water	Without the Climate Change Strategy, climate change impacts such as reduced summer rainfall levels, higher temperatures and fluvial flooding are unlikely to be addressed and have long-term negative impacts water resources due to lack of awareness and community resilience to extreme weather events and flooding. Despite a range of international and nations PPS on water environmental quality and management, climate change, the misuse of water and associated ad- hoc development of land use changes renewable technologies, will have a negative effect on water quality and supply, on watercourses and the coastline.
Air	Without the Climate Change Strategy, climate change impacts may decrease the air quality in Clackmannanshire, and it is unlikely the region will be prepared for the impacts of poor air quality. Despite a range of PPS that monitor/control the release of particulate matter through construction and traffic, they are developed in isolation, while the Climate Change Strategy approach is to maximise the benefits that low carbon transport modes bring in improving the air quality might be lost and result on moderately negative, short- to- medium term impact on air.
Climatic factors	Without the Climate Change Strategy, climate change impacts on the environment, economy and society will increase in the medium to long term due to fragmented climate actions within Clackmannanshire. The benefits and opportunities that create synergies between interventions and scale up activities to meet emission reduction targets be missed to without coordinated or partnership actions. Some opportunities for early planning and activity to mitigate and adapt to these changes will be missed. Other PPS will affect climatic factors.
Material assets	Without the Climate Change Strategy, climate change impacts may advance damage and degradation of the built environment and infrastructure, including property will increase. Continued reliance on landfill for waste will increase. However, there are no likely chances to have any effect on the material assets due to other national strategies and local policies, such as Local Development Plan, Zero Waste targets.
Cultural heritage	Without the Climate Change Strategy, there would be limited impact on heritage environment as there are other PPS which regulates the conservation and enhancement of historic buildings, archaeological sites and conservation sites. However, without adaptation actions certain designated sites and their surroundings could be vulnerable to the effects of climate change, such as flooding and degradation.
Landscape	Without the Strategy, climate change impacts including flooding, erosion and increased risk of landslip and landslide may not be managed, placing greater pressure on landscape. Despite other a range of national PPS that control the impact of development and changes on the landscape, the lack of collaborative approach will lead to a steady evolution of the landscape in relation to human activity, biological processes and climate change.

4. Assessment – approach and method

a. Assessment Approach

4.1 This section sets out the approach /method to the SEA assessment and the assessment criteria used. The summery results of the assessment are provided in *Chapter 5, section a* and *b*. Upon completion of the assessment of the Strategic Theme, any potential adverse effects will be reviewed with the project team to devise suitable enhancement measures. The primary recommendations are anticipated to involve suggestions for the Climate Emergency Action Plan.

b. Scoping of SEA Topics

4.2 After conducting the baseline and policy review, it was established that all SEA topics could experience either positive and/or negative impacts. However, certain impacts would be more substantial than others, and some impacts on the topics might only be significant when considered cumulatively. *Table 4* provides an overview of all the topics included in the assessment. Although there is no statutory definition of 'significance' within the context of the 2005 Act, the following issues were considered in determining the potential significance of impact across the SEA issues:

- Scale of impact (geographical)
- Duration of impacts – short, medium or long term
- Reversibility of impact
- Sensitivity of the environment
- Potential for significant cumulative effects

Table 4 Scoping of SEA topics

SEA Issue	Scoped		Reason for Inclusion
	In	Out	
Biodiversity, flora & fauna	✓		The overall impact on local biodiversity should be positive through actions to increase the understanding of the benefits of green infrastructure and biodiversity in relation to mitigation and adaptation to climate change. Potential for more positive effects on local biodiversity through influence on other plans and strategies.
Population & human health	✓		The Strategy offer substantial opportunities to enhance health and well-being, leading to decreased fuel poverty, promote more active lifestyles, improve the quality of public spaces, and increase access to green areas. Efforts will be made to address potential negative effects on population from proposed actions, ensuring that any long-term strategic impacts on communities are minimised and that cumulative effects do not disproportionately disadvantage specific groups.
Soil	✓		The overall impact on soil should be positive through actions to safeguard and prevent deterioration of soil quality and quantity due to climate change and human impacts, however there is the potential for negative impacts on soil through degradation and/or loss, due to activities put in place to mitigate or adapt to climate change.
Water	✓		The overall impact on water quality, supply, drainage, flooding and morphology should be positive through actions promoting water conservation and purification, sustainable water use and sustainable flood management techniques.

SEA Issue	Scoped		Reason for Inclusion
	In	Out	
Air	✓		The overall impact on air quality should be positive through actions addressing climate change's impact on air quality. Implementing measures to reduce carbon intensive transport and encourage sustainable travel should reduce emissions.
Climatic factors	✓		The overall impact on climate change should be positive through actions to mitigate and adapt to climate change, reduce greenhouse gas emissions, for carbon capture and sequestration through the promotion of nature and biodiversity assets and contribute to net zero targets.
Material assets	✓		The overall impact on material assets should be positive due to actions to improve the climate resilience of buildings and infrastructure delivery of the circular economy by sustainable use of materials through procurement, construction, maintenance and disposal.
Cultural heritage	✓		The overall impact on cultural heritage should be positive due to actions to protect all aspects of the historic environment and improve the climate resilience of cultural sites without compromising maintain a 'sense of place' and cultural identity within local communities. Potential negative impacts can raise the inappropriate use of renewable energy solutions on historic buildings and within the settings of historic and cultural assets.
Landscape	✓		The overall impact on the landscape will be positive due to actions to protect and enhance landscapes by influencing other plans to promote the benefits of landscape and 'green' development to improve degraded landscapes. Potential negative effects on rural landscapes and townscapes may rise from renewable energy development.

c. Response of Consultation Authorities

4.3 Statutory requirements of the SEA include the requirement to provide consultation authorities with a detailed explanation of the plan in order to fully understand the likely environmental effects. Consultation authorities were asked to provide a view on the Climate Change Strategy Scoping Report produced in April 2024. A summary of the key comments from the statutory consultation authorities and the response to how this has been captured in the SEA is provided in ***Appendix A***.

d. CC Strategy components subject to SEA Assessment

4.4 In line with the Strategic Environmental Assessment Guidance 2013 the assessment has been focused on the key elements within the Climate Strategy which are likely to have significant environmental effect to ensure a proportionate approach to assessment. *Table 5* outlines the components of the Climate Strategy alongside explanations why each of them has or has not been scoped into the SEA assessment.

Table 5 Scoping of SEA topics

CC Strategy Components	Subject to SEA assessment	Explanation of Potential Environmental Effects and Significance
The Role of Clackmannanshire Council	✗	***Unlikely to have any significant impact*** This component consists of information regarding the Council emission historic emission data serving as evidence base for the Strategy, so it does not intend to have any environmental effects.

Net Zero Delivery Framework	✘	***Unlikely to have any significant impact due to being concerned with the use of data.*** It was determined that this element was background information to inform the development of the Strategic Themes and Actions including public engagement response and the governance bodies monitoring the actions.
Strategic Themes and Actions	✓	***The implementation of the Climate Change Strategy is anticipated to result in substantial environmental benefits by mitigating CO2 emissions and enhancing resilience against the impacts of climate change.*** ***While the anticipated effects are predominantly positive, it is imperative to ensure that any ensuing projects stemming from the strategy are meticulously designed to mitigate any potential adverse impacts to the greatest extent possible.*** The strategy seeks to achieve a reduction of C02 emissions through Clackmannanshire area with anticipated positive impacts on Climatic Factors and Population and Human Health. The strategy aims to acknowledge and facilitate the transition from a fossil fuel-based economy to one that is carbon-neutral and resilient. The foreseen positive effects on Population and Human Health include improvements in energy usage efficiency, reduced energy demand, and alleviation of fuel poverty. However, the implementation of certain initiatives may potentially lead to localized negative environmental impacts, such as the development of new infrastructure for renewable energy like battery storage, etc.

e. Assessment Method

4.5 Aligned with SEA Guidance, the assessment employed a matrix-based approach and scoring system complemented by mapping and spatial analysis. This matrix was utilized to evaluate PPS, alternatives, Strategy Themes, objectives, and key projects in the Climate Change context against the SEA topics included in the assessment. It utilised the environmental concerns outlined earlier in comparison with the SEA questions. To facilitate the assessment process, SEA objectives and criteria were formulated to offer a systematic, rigorous, and uniform framework for evaluating environmental effects.

4.6 The matrix scoring for each assessment are shown below and the results are shown in ***Appendix D, E & F***:

Table 6 Policy Assessment scoring

Symbol	**++**	**+**	**+ / x**	**?**	**0**	**x**	**xx**
Assessment	**Major** Delivers the aim of the PPS	**Minor** Delivers part of the aim of the PPS	**Mixed** Delivers some part and conflicts other part of the aim of the PPS	**Uncertain** Unsure if it delivers part of the aim of the PPS	**Neutral** Neither delivers nor conflicts with the PPS	**Minor** Does not deliver the aim of the PPS	**Major** Conflicts with the aim of the PPS

Table 7 Alternative Assessment scoring

Symbol	✓	×	O	?
Assessment	Positive Environmental Effect	Negative Environmental Effect	No Environmental Effect	Effect Uncertain

Table 8 Climate Change Strategy Cumulative Assessment scoring against SEA Objectives

Symbol	✓	×	O	?
Assessment	Themes/priorities supportive of SEA Objectives	Potential conflict between themes/priorities & SEA Objectives	Themes/priorities have no identified conflict or support for SEA Objective	Uncertain whether themes/priorities conflict with or support the SEA Objectives

Table 9 Objectives / Actions Assessment scoring

Symbol	++	+	0	-	--	+/-	?	S	M	L
Assessment	Major Positive	Positive	Neutral	Negative	Major negative	Mixed	Uncertain	Short-term effects	Medium-term effects	Long-term effects

f. Development of SEA Objectives and Criteria

4.7 To fulfil the requirements of the SEA Directive, SEA Objectives must cover environmental issues set out in Schedule 3 of the 2005 Act, including the interrelationship between them. SEA Objectives are separate from the Climate Change Strategy's Objectives and Outcomes, although they can influence each other and may overlap.

4.8 The SEA Objectives and assessment criteria *(Table 10)* were developed by the review of relevant PPS and environmental objectives, the environmental baseline, and by taking account of comments from the Consultation Authorities. The criteria are in the form of questions aligned to environmental objectives against which the objectives and programme policies and projects, as these can be expressed in a draft Strategy, were assessed.

4.9 Given that the primary objective of the CC Strategy is to align strategic decisions, budgets, and planning approaches with a transition to achieving net zero greenhouse gas emissions, the SEA objectives have been established at a suitable level for evaluating the Strategy. This ensures that the Strategy isn't burdened unnecessarily, particularly when other Council PPS serve as primary drivers and have undergone their own SEA assessments. Nonetheless, the assessment endeavours to recognise these drivers to guarantee adequate environmental protection and ensure that SEA outcomes are duly considered at the appropriate level, thereby promoting environmental benefits for the area.

Table 10 SEA objectives in relation to the assessment of the Climate Change Strategy

SEA Topic	SEA Objective	Assessment Question (does the Climate Change Strategy…)
Biodiversity, flora & fauna	*Protect, conserve and enhance biodiversity, flora and fauna and habitat networks*	• have the potential to have a significant impact any international, national or locally designated site? • protect the diversity of species and habitats? • promote restoration opportunities for woodlands? • avoid habitat fragmentation and increase green network connectivity? • have the potential to have a significant impact on and improve native wider biodiversity? • support a healthier natural heritage ecosystem?
Population & human health	*Promote human health & well-being, social inclusion, economic growth, access to a rich and diverse local environment by reducing inequalities*	• promote opportunities to improve personal and community resilience? • support opportunities for social equality and cohesion? • improve opportunities for healthier lifestyles? • safeguard, enhance and promote green infrastructure, green networks and opportunities for active travel?
Soil	*Protect valuable land resources, promote soil restoration and enhance the soil resource function /quality where appropriate*	• safeguard soil quality, quantity and function? • avoid adverse impact on valuable soil resources such as carbon rich soils? • reduce the risk of erosion, landslip and landslide? • promote opportunities for soil restoration such as peat restoration to store carbon?
Water	*Protect, prevent deterioration and, where appropriate, enhance the water environment*	• protect and enhance the overall ecological status of waterbodies? • avoid adverse effects on the coastal environment? • promote water conservation and purification? • promote sustainable water use? • avoid or reduce flood risk? • promote sustainable flood management?
Air	*Limit or reduce the emissions of air-borne pollutants to prevent deterioration of air quality*	• impact air quality negatively? • increase congestion and vehicle traffic? • support measures to reduce levels of air pollution? • encourage and promote mobility and active travel?
Climatic factors	*Increase resilience by contributing to mitigation of and adaptation to climate change*	• limit emissions of greenhouse gases? • have the potential to alleviate risk of flooding and erosion? • increase the resilience of people, material assets and the natural environment to the impacts of climate change?
Material assets	*Minimise waste and energy consumption to increase resource efficiency and promote use of renewable energy*	• promote sustainable use, including energy, waste, water, and minerals? • contribute in shifting to clean energy resources / renewables and use of district heating • meet the targets of the Zero Waste Plan and apply the waste hierarchy (reduce, reuse, repair, recycle)?
Cultural heritage	*Protect, where appropriate also enhance culture heritage and historic environment to preserve Clackmannanshire identity*	• reduce the effects of climate change on the historic environment and its settings? • enhance or restore historic features and their settings?
Landscape	*Protect and enhance the quality of landscape and publicly accessible open space*	• cause changes to the landscape environment that are at variance with the character of the area? • improve and enhance the quality and amount of accessible open space within the area?

g. Development and assessment of the Strategy Alternatives

4.10 The SEA Guideline requires that an Environmental Report is prepared to identify, describe and evaluate the likely significant effects on the environment of implementing the Climate Change Strategy, together with assessing reasonable alternatives to it. The Climate Change Strategy is not a legal requirement. However, the alternative taken forward must help deliver the Council's statutory duties under the Climate Change (Scotland) Acts 2009 & 2019 and meet its requirement to deliver Best Value under the Local Government (Scotland) Act 2003.

4.11 As part of developing the Climate Change Strategy we have considered the following alternative options listed below:

- **Option 1:** Do Nothing

  In the 'do nothing' approach, the opportunity for collaboration and transparency around actions from partner organisations, as well as accountability and measurement of progress is not conducted in a systematic manner. Carbon emissions and climate adaptation actions would not be strategically managed and potential benefits would be lost.

- **Option 2:** Do Minimum

  In the 'do minimum' approach, the Council would produce a limited plan covering only a selection of its main activities. These would be delivered, and results monitored, and results monitored. However, the scale of carbon reductions and climate adaptation measures would be insufficient. There would be a minimum management of environmental impacts and potential benefits would be lost.

- **Option 3:** Do Optimum

  Under the 'do optimum' approach, the Climate Change Strategy will be developed to realise the greatest environment benefits due to the strategic cooperative and partnership approach to the development of the plan. The Climate Change Strategy will outline the approach Clackmannanshire intends to meet its commitments on reducing energy use and carbon emissions. The effects are likely to be positive if the strategy is implemented.

4.12 *Chapter 5, section b* provides an overall of the overall assessment findings of the alternatives whereas ***Appendix D*** outlines the detailed breakdown of assessment results. Any negative impacts identified will be mitigated by actions proposed in *Chapter 5, section c* of this report. Additionally, the consultation process for the draft Plan, running concurrently with the Environmental Report consultation, provides a chance to explore reasonable alternatives not previously explored.

5. Assessment findings

a. Assessment

5.1 This section provides a summary of the environmental analysis conducted on the Clackmannanshire Climate Change Strategy, covering each strategic theme, including three alternatives and specific actions from the Climate Emergency Action Plan. These have been evaluated against the SEA Objectives and established criteria, based on their projected impact on the current environmental baseline, as detailed in Appendices D, E, and F. The assessment involved professional judgement, where applicable, GIS spatial analysis assumptions for potential projects/technologies/practices. Additionally, this section suggests mitigation measures to enhance environmental performance and offers recommendations for future steps.

5.2 The Interim Climate Change Strategy offers the potential to achieve a variety of strategic environmental benefits across the Clackmannanshire area that may not be accomplished through the continued implementation of existing PPS.

b. General Findings

Plan Alternatives

- **Option 1:** Do Nothing

5.3 In general, this option is likely to result in moderate to significant negative impacts across several environmental aspects in Clackmannanshire. Biodiversity, water resources, and air quality may suffer due to the lack of coordinated climate actions and missed opportunities for local climate change mitigation. Human health, particularly among vulnerable communities, is also at risk due to reduced motivation to address climate resilience. While impacts on population, material assets, and cultural heritage may be limited, the degradation of landscapes and climatic factors are expected. Overall, this alternative presents challenges in aligning actions to meet climate and environmental goals effectively.

- **Option 2:** Do Minimum

5.4 Overall, this option is expected to have a mix of positive and neutral impacts on the environment, with some areas of concern. While biodiversity, water resources, air quality, and material assets may benefit from individual stakeholders' actions, the lack of coordinated, area-wide efforts could reduce the effectiveness of these initiatives and miss opportunities for cumulative positive impacts. Human health remains at risk, particularly for vulnerable groups, due to the potential consequences of climate change. Although there are positive effects on climate factors and reduced carbon emissions, the fragmented approach limits the ability to maximise synergies. The landscape and cultural heritage could face uncertain or negative impacts due to ad-hoc projects and uncoordinated actions

- **Option 3:** Do Optimum

5.5 Overall, this option is likely to generate significant positive effects on biodiversity, air quality, climatic factors, and material assets due to the coordinated, area-wide approach of the

Climate Change Strategy (CC Strategy). By aligning efforts across stakeholders, it enhances biodiversity, mitigates climate impacts, and fosters long-term improvements in human health, population wellbeing, and sustainable development. However, certain actions, such as land use changes and renewable energy projects, may carry risks, including habitat disturbance, soil disruption, and impacts on water resources, which would require careful planning and detailed assessments. Positive outcomes for cultural heritage and the landscape are expected, though renewable energy projects may present challenges.

5.6 The most beneficial option was considered to be the Strategy that focuses on doing the optimum on area-wide action that maximises synergies and ensures a more sustainable and resilient future, balancing benefits with potential risks. The detailed assessment of the three alternatives can be found in *Appendix D.*

Main Themes

5.7 The strategic themes serves overall direction to maximise the financial, economic and social benefits of a transition to net zero, helping to shape the priorities and detailed actions, to achieve this goal. The cumulative effects of the detailed assessment reveal that the strategy's vision and targets largely support the SEA Objectives by aiming for net zero greenhouse gas emissions and maximizing financial, economic, and social benefits. Strategic Theme 1, which focuses on energy and buildings, aligns with most SEA Objectives but requires further investigation into potential impacts on biodiversity, soil, and cultural heritage, depending on the technologies used. Strategic Theme 2, related to low-carbon transport, generally supports the SEA Objectives but needs more detailed analysis of its effects on biodiversity, soil, water, and landscape due to infrastructure choices. Strategic Theme 3, focused on waste, recycling, and the circular economy, fully supports the SEA Objectives with no significant conflicts identified. Strategic Themes 4 and 5, addressing biodiversity and adaptation, respectively, support the SEA Objectives but may encounter conflicts with cultural heritage, which can be mitigated through careful site investigations and planning.

5.8 Overall, most strategic themes align with the SEA Objectives, although some may pose uncertainties or potential conflicts, particularly regarding cultural heritage. To address these issues, further investigation and detailed site assessments are recommended. Careful planning is needed to mitigate any negative impacts. Comprehensive policy development and site-specific evaluations will be crucial for maximizing benefits and minimising conflicts.

5.9 The detailed assessment of each strategic theme against each SEA Objective can be found in *Appendix E.*

Climate Emergency Action Plan

5.10 The potential environmental impacts of planned strategies, future development projects and actions were assessed across the 6 strategic themes, as outlined below.

5.11 **Theme 1 - Energy Heat and Buildings**

This theme consist of strategy development (LHEES, Housing Strategy) and projects, which the assessment indicate long-term **positive outcomes** from energy efficiency improvements and investments in clean energy, leading to reductions in energy use, carbon emissions, and fuel poverty. While the primary actions themselves do not directly impact the environment, secondary actions could positively influence environmental performance, although they may pose risks to traditional and culturally significant buildings. Temporary negative impacts, such as particulate matter release during construction and disturbances to **habitats, soil, and water**, are possible and depend on the technologies used. These impacts can be mitigated through careful site investigation and the selection of appropriate technologies. Overall, the focus on energy efficiency and renewable energy investments offers significant environmental benefits, with attention needed to manage potential impacts on **cultural assets** and the **landscape character**.

5.12 **Theme 2 - Low-carbon Transport**

The review Local Transport Strategy and implementing the 'Connected Clackmannanshire' result in a **mix impact** on the environment depending on which consideration will prevail during best approach/alternative/infrastructure consideration. The assessment reveals significant **positive cumulative effects** primarily through investment in active travel, which enhances **air quality,** increases amenity space, and reduces carbon emissions, alongside improvements in **biodiversity** and resilience to climate change. While the overall impact is **largely beneficial**, **potential temporary disturbances** to soils may occur. The approach also contributes positively to **community health and well-being** by reducing private vehicle use and supporting sustainable travel modes. Although there are potential local impacts on **cultural heritage** and **landscapes**, these can be mitigated through careful planning and site-specific assessments. Overall, the initiative supports long-term sustainability, better public health, and improved environmental quality.

5.13 **Theme 3 - Waste, Recycling and the Circular Economy**

The assessment indicates that the strategy will have **largely positive cumulative** effects, primarily through significant reductions in biodegradable waste and landfill use. This includes improved sustainability practices, enhanced recycling efforts, and educational opportunities that promote waste reduction and sustainable behaviours. **Positive impacts** are also expected from reduced food waste and litter, contributing to a cleaner environment and better resource management. While some impacts are **neutral** or of limited significance due to scale, the overall trend shows substantial benefits in waste reduction, re-use, and repair, especially in Council projects and major developments such as Forthbank Recycling Centre. The approach supports a substantial decrease in waste generation and promotes sustainability across various sectors.

5.14 **Theme 4 - Biodiversity, Carbon Storage and Agriculture**

The cumulative effects of the assessment demonstrate significant **long-term benefits** across various environmental and social aspects. Increased woodland expansion and enhanced green spaces offer multiple **positive impacts**, including improved **human health, air** and

water quality, and increased **biodiversity**, while also enhancing resilience to **climate change** through natural flood management. Local food growing initiatives contribute to community resilience, reduce food miles, and offer improvements in s**oils**, **landscapes**, and overall environmental quality. Although largely positive, some potential **negative impacts** on landscapes may arise, which can be mitigated through careful site investigation and consideration of sensitive areas. Overall, the strategy supports substantial environmental and community health improvements, with a focus on maintaining and enhancing natural habitats and green infrastructure.

5.15 **Theme 5 - Adaptation, Planning and Organisational Capacity**

The initiative with the most impact will be Review the Council's Local Development Plan, Alloa town centre and Forthbank Transformation Zone and align spending plans and the use of resources to contribute to reducing emissions and while not pursuing high-carbon initiative. These actions will bring a set of **mixed impacts** in the environment depending on which consideration will prevail in NPF4 and technologies used. The cumulative assessment of the other projects highlights **largely positive long-term benefits** across all environmental issues, driven by actions to protect and enhance habitats, increase biodiversity, and prioritise net-zero carbon economy investments. While the focus on sustainable practices and climate-conscious planning supports improvements in air quality, public health, and overall environmental resilience, potential **mixed impacts** may arise from new low-carbon infrastructure, such as solar farms or wind turbines, which could affect local landscapes and ecosystems if not carefully designed. The strategy also promises significant long-term cost savings and emission reductions, contributing to reduced water pollution and enhanced community sustainability. Although administrative actions are expected to have minimal direct environmental impact, they support the broader goal of sustainable development by fostering awareness and reducing carbon footprints. Ensuring sensitive integration of development and conservation objectives will be crucial to maximising benefits and minimising any negative effects.

5.16 **Theme 6 - Economic Development and Sustainable Procurement**

The cumulative effects of the assessment reveal predominantly **positive impacts** across various environmental and social aspects. Support for green goods and services, along with sustainable procurement, offers minor benefits to **air quality, climatic factors, and material assets,** while enhancing lifecycle considerations of construction materials and waste management. Positive effects are also noted for **population health**, particularly through increased access to fresh produce and reduced carbon emissions from transportation. However, potential localized negative impacts on **habitats, soil, water, cultural heritage, and landscapes,** depending on the technologies used, require careful mitigation through site investigations and appropriate technology choices. Overall, the strategy promotes sustainable practices, supports local businesses, and fosters environmental protection, with careful management needed to address any negative effects.

5.17 The detailed assessment of each action of the Climate Emergency Action Plan against each SEA Objective can be found in Appendix F.

c. Mitigation

5.18 In accordance with Schedule 3 of the 2005 Act, proposed mitigation measures to prevent, reduce and, as fully as possible, offset any significant adverse effects on the environment by implementing the CC Strategy have been considered and are outline below alongside issue / impact identified in assessment, enhancement opportunities, lead authorities, proposed timescale and cumulative impacts.

SEA Topic	Issue / Impact Identified in ER	Relevant actions	Enhancement opportunities	Mitigation Measure	Lead Authority	Proposed Timescale
Biodiversity, flora & fauna	Temporary Disturbances to Habitats: Some themes, such as energy efficiency improvements and low-carbon transport, may cause temporary disturbances to habitats, soil, and water, particularly during construction or implementation phases. Potential Negative Impacts on Landscapes: There is a possibility of negative impacts on local landscapes, especially with the introduction of new low-carbon infrastructure like solar farms or wind turbines. These impacts can affect local ecosystems if not carefully managed. Risk to Green Infrastructure: The removal of existing green infrastructure, which is crucial for maintaining biodiversity, could occur. This would negatively impact habitats and the ecosystem services they provide. Impact of Non-Native Species: Some projects might introduce non-native species, which can disrupt local biodiversity and affect native species and habitats.	1.4 1.9 1.10 2.2 5.2 5.16 5.17 6.2 6.11	Opportunities to provide various 'ecosystem services'—including biodiversity improvement, air and water purification, carbon storage in trees, woodlands, and peatlands, flood protection, and waste treatment—can be complemented by urban features such as attenuation ponds, swales, green roofs, rain gardens, and street trees.	For developments in open countryside or urban fringes that may impact protected designations, a design statement and ecological assessment may be necessary to determine weather a Habitats Regulations Assessment is required. Prior to any infrastructure projects, site investigations should be conducted to prevent adverse environmental impacts. Projects should maximise the benefits of blue and green infrastructure by incorporating suitable features and using native species where possible, while ensuring the implementation of appropriate biosecurity measures.	Council's Planning/ Sustainability/ Rangers Team, NatureScot, and various stakeholders, with lead project managers taking overarching responsibility.	All SEA environmental topics to be considered during any policy development, project design and implementation
Population & human health	Temporary Disturbances: Possible short-term, localised effects on human health may arise from increased noise, dust, vibration, and local traffic congestion during construction. Potential Risks to Health from Environmental Changes: Higher traffic levels and congestion due to increased visitor numbers at new facilities could lead to greater pollution and associated health risks. Additionally, the risk of surface water flooding may increase due to soil sealing and hard landscaping.	5.17 6.6	Habitat restoration will support crucial ecosystem services, such as air and water purification, carbon sequestration in trees and woodlands, flood protection, and waste management. Fostering engagement for decision-making will encourage outdoor activity and promote more active travel options.	Implement construction-related traffic and site management measures to mitigate the impact of increased traffic and congestion. Protecting and improving existing habitats and green networks while maximizing the benefits of blue and green infrastructure. Providing the community with opportunities to voice concerns through online presentations and consultations for different PPSs/initiatives.	Council's various services, Scotland Public Health, and various stakeholders, with lead project managers taking overarching responsibility.	All SEA environmental topics to be considered during any policy development, project design and implementation

SEA Topic	Issue / Impact Identified in ER	Relevant actions	Enhancement opportunities	Mitigation Measure	Lead Authority	Proposed Timescale
Soil	Disturbance during Construction: Temporary negative impacts on soil may occur due to particulate matter release and disturbances during construction activities related to energy efficiency improvements, clean energy projects and infrastructure projects. Soil Sealing from Landscaping: Increased soil sealing and hard landscaping may contribute to increased surface water flooding. This could have localised negative effects on soil quality and hydrology if not carefully managed.	1.4 1.9 1.10 2.1 2.2 2.4 2.9 5.2 5.17 6.2 6.11	Sustainable and low-impact agricultural practices. Opportunity for soil remediation. Nature-based solutions to prevent erosion	Conduct site investigations and consider suitable solutions before initiating any infrastructure projects to prevent adverse impacts. Incorporate blue and green infrastructure elements to enhance infiltration, minimise surface sealing, and safeguard against soil erosion.	Council's various services, SEPA, and various stakeholders, with lead project managers taking overarching responsibility.	All SEA environmental topics to be considered during any policy development, project design and implementation
Water	Temporary Disturbances: During the implementation of energy efficiency and clean energy projects, temporary negative impacts on water can occur due to disturbances from construction activities. Increased Pollution: Potential for increased water pollution could arise from increased traffic levels and congestion associated with new. This is linked to higher visitor numbers leading to greater runoff and potential contamination. Flooding Risks: Increased surface water flooding is a potential issue due to soil sealing and hard landscaping. This can affect water quality and management if not properly addressed through careful planning. Localised Negative Impacts: Potential localised negative impacts on water resources could arise from the technologies used in sustainable procurement and green goods and services.	1.4 1.9 1.10 2.1 2.2 4.8 4.9 5.2 5.17 6.2 6.11	Implementation of blue and green infrastructure elements designed to filter surface water runoff and reduce water flow rates	Improved waste management practices support cleaner water environments. These impacts are dependent on the technologies used and can be mitigated with careful site investigation.	Council's various services, SEPA, Scottish Water, and various stakeholders, with lead project managers taking overarching responsibility.	All SEA environmental topics to be considered during any policy development, project design and implementation
Air	Particulate Matter: Temporary negative impacts on air quality could occur due to the release of particulate matter during construction activities related to energy efficiency and clean energy projects. These impacts can be mitigated with careful site investigation and appropriate technology choices. Mixed Impacts: The review of planning and development may have mixed impacts on air quality. While the focus on reducing emissions and supporting net-zero carbon initiatives aims to improve air quality, potential localised impacts from new infrastructure like solar farms or wind turbines need careful management to avoid adverse effects.	2.2 5.2 5.16 5.17	Opportunities for both immediate and long-term improvements in air quality through cleaner energy systems, vehicles, and reduced traffic congestion, along with the incorporation of diverse blue and green infrastructure features.	Implement Clackmannanshire Local Development Plan policies that address the impact of development on air quality. Introduce traffic management and planning measures to minimize short-term construction-related impacts. Enhance mitigation efforts through extensive tree planting, where suitable, to absorb pollutants, capture particulates, and reduce carbon emissions.	Council's Environmental Health/ Sustainability/ Planning team SEPA, and various stakeholders, with lead project managers taking overarching responsibility.	All SEA environmental topics to be considered during any policy development, project design and implementation

SEA Topic	Issue / Impact Identified in ER	Relevant actions	Enhancement opportunities	Mitigation Measure	Lead Authority	Proposed Timescale
Climatic factors	Short-Term Emissions from Construction: During the construction phase of any development project, it is likely that temporary emissions will be generated, contributing to environmental impacts. Risk of Failing to Meet Emissions Targets: Without the swift implementation of policies, plans, programs, and projects (PPPs) outlined in the Plan, emissions across the area may not decrease rapidly enough to meet climate targets. Global Climate Change and Its Local Impact: Ongoing global increases in emissions could exacerbate climate change, leading to higher temperatures, increased flood risks, extended drought periods, disruption to global supply chains, and more frequent and severe extreme weather events.	2.7 5.10 5.17	Opportunities for biodiversity/habitat restoration and tree planting initiatives. Incorporate eco-friendly designs in the construction and refurbishment of buildings, nature-based solutions to address climate impacts. Develop a larger, well-integrated low-emission active travel network.	Prioritise designs that reduce emission through demand reduction, energy efficiency, and renewable technologies, while expanding active travel options and green infrastructure to absorb emissions. Climate adaptations, including water management and shading, along with careful planning and construction management, will help mitigate environmental impacts and minimise carbon emissions.	Council's Sustainability/ other services team, and various stakeholders, with lead project managers taking overarching responsibility.	All SEA environmental topics to be considered during any policy development, project design and implementation
Material assets	Potential Risks from Construction: Temporary negative impacts such as the release of particulate matter during construction could affect material assets. Disturbances to habitats, soil, and water, depending on the technologies used, may also impact material assets. Localised Impacts from Low-carbon Infrastructure: Potential local impacts on material assets may arise from infrastructure changes. Linear economy: Potential for projects to use renewable and non-renewable resources (including energy, water & minerals) and generate waste	2.2 5.4 5.17	Implementation circular economy principles in supply chain and waste hierarchy. Repurposing vacant properties and derelict land for productive use.	Use of local, renewable and/or recycled materials wherever possible. Promote and apply good construction management principles and embed circular economy principles in supply chains for major development projects in the region. Minimise environmental impact through Project Life Cycle Assessment.	Council's Planning/ Waste /Sustainability Team, SEPA. Zero Waste Scotland and various stakeholders, with lead project managers taking overarching responsibility.	All SEA environmental topics to be considered during any policy development, project design and implementation
Culture heritage	Potential Risks to Cultural Assets: Actions related to energy efficiency and clean energy investments might pose risks to traditional and culturally significant buildings. While the primary actions themselves do not directly impact cultural heritage, careful management is needed to mitigate these risks. Local Impacts: Potential local impacts on cultural heritage due to infrastructure developments and changes in transport strategies. These impacts can be managed through careful planning and site-specific assessments to ensure the preservation of cultural heritage. Mitigation Measures Needed: Potential mixed impacts from new low-carbon infrastructure (e.g., solar farms, wind turbines) could affect local cultural heritage if not designed thoughtfully. Localised Negative Impacts: Dependences on the technologies used, there may be localised negative impacts on cultural heritage.	1.1 1.3 1.4 1.5 1.7 1.9 1.10 1.112.2 5.2 5.16 5.17 6.2 6.11	Careful refurbishment of neglected, vacant, or derelict properties to restore them to productive use. Enhance understanding and awareness of the area's rich built heritage.	To manage potential impacts effectively, careful site investigations and appropriate technology choices are essential. Environmental effects will be addressed during the planning process, including Listed Building Consent and site-specific evaluations, alongside the implementation of construction management measures like Environmental Management Plans.	Council's Planning/ Sustainability team, HES and various stakeholders, with lead project managers taking overarching responsibility.	All SEA environmental topics to be considered during any policy development, project design and implementation

SEA Topic	Issue / Impact Identified in ER	Relevant actions	Enhancement opportunities	Mitigation Measure	Lead Authority	Proposed Timescale
Landscape	Potential Risks to Landscape Character: The focus on energy efficiency and renewable energy investments could pose risks to landscape and setting of the historic environment. Although the primary actions are beneficial, secondary impacts may affect the landscape character visually. Local Impacts: The implementation of low-carbon transport initiatives may lead to local impacts on cultural heritage and landscapes. Negative Impacts on Landscapes: Increased woodland expansion and enhanced green spaces are generally positive, but there may be some potential negative impacts on landscapes. Mixed Impacts from Infrastructure: The review of planning and development may result in mixed impacts on landscapes. New low-carbon infrastructure, such as solar farms or wind turbines, could affect local landscapes and ecosystems if not designed carefully. Localised Negative Impacts: Economic development and sustainable procurement may cause localised negative impacts on landscapes depending on the technologies used.	1.9 1.10 2.2 4.8 4.2 5.16 5.17 6.11	There is an opportunity to enhance the landscape by reusing vacant and derelict land and incorporating suitable blue and green infrastructure. Highlight the advantages of proposed changes, such as increased tree cover in upland areas, to shift perceptions that the existing, degraded landscapes are always ideal.	Impacts can be mitigated through careful site investigation and sensitivity to key areas to enhance landscape quality, with projects required to improve visual amenity and landscape character in line with LDP policies. These potential impacts can be mitigated through careful planning and site-specific assessments to preserve landscape features. Conduct site investigations and evaluate suitable solutions before starting any infrastructure projects to ensure environmental enhancements are well-suited to the location, the right trees are planted in appropriate areas, and locally significant historical landscapes are preserved.	Council Planning/ Sustainability team, NatureScot, HES and various stakeholders, with lead project managers taking overarching responsibility.	All SEA environmental topics to be considered during any policy development, project design and implementation

d. Outline of Differences the SEA has made to the CC Strategy

5.19 The assessment findings have informed the further development of the final draft of the Climate Change Strategy, enhancing communication and coordination among Council services, stakeholders, and communities. This will promote climate-sensitive actions throughout Clackmannanshire, address key environmental issues identified through the SEA process, and maximise environmental benefits for the people. The SEA process facilitated greater synergy and clarity, resulting in a more consistent approach to tackling both the climate crisis and the nature emergency. It has ensured that the goal of achieving net zero is integrated across the Council and actively promoted within the community. The evaluation of potential alternatives highlighted the importance of pursuing a net zero ambition and illustrated the consequences of either inaction or minimal effort.

5.20 Overall, the SEA objectives influenced the final draft of the CC Strategy:

5.21 **Biodiversity, flora and fauna**

The SEA emphasised the importance of a collaborative approach to effectively address both the climate and nature emergencies, ensuring the best outcomes for both people and the environment. It highlighted the critical role of biodiversity in adapting to and mitigating climate change, leading to its integration into several key priorities in line with the Edinburgh Declaration.

5.22 **Population and human health**

The SEA focused and prioritised people and communities by offering a broader perspective on how the CC Strategy can emphasise the value of nature, local greenspaces, and active travel options. It highlighted their significance for enhancing public health, well-being, and resilience in the face of climate change impacts.

5.23 **Soils**

The SEA highlighted that the contribution of peatlands, grasslands and woodlands play in mitigating climate change through carbon sequestration.

5.24 **Water**

The SEA underscored the heightened risk of the water aspects during severe weather events like floods, storms and the quality of the water sources. In response, actions have been taken to address this risk by increasing awareness through community outreach and collaborative efforts.

5.25 **Air**

The SEA highlighted that actions within the CC Strategy will help to improve the air quality and address existing problems.

5.26 **Climatic ~~factors~~**

The SEA endorsed the CC Strategy goal to achieve net zero for Council's own operations and the wide area by maximising the financial, economic and social benefits of a transition across Council Services and the need to work collaboratively with communities and partners.

5.27 **Material assets**

The SEA reinforced and endorsed the SDCCS's approach to sustainable land use. It strengthened the need for a South Lanarkshire wide perspective and the important role that the planning system will have in promoting sustainable development and tackling climate change.

5.28 **Culture heritage**

The SEA highlighted the potential negative effects on the historic environment from applying different technologies to implement energy efficiency measures. This enabled the CC Strategy to consider these effects and how they can be sensitively addressed.

5.29 **Landscape**

The SEA emphasised the need to consider potential impacts on landscapes and the historical settings from climate change mitigation and adaptation measures and how these can be sensitively addressed.

5.30 After consulting on the Strategy and the Environmental Report, SEA findings and recommendations will be continuously shared with stakeholders and leads responsible for strategic themes and related projects. This will ensure that environmental considerations are integrated into the ongoing development and implementation of the CC Strategy and its associated actions.

6. Monitoring

a. Assessment Methodology / Framework for assessing environmental effects

6.1 According to Section 19 of the 2005 Act, the Responsible Authority is mandated to monitor any significant environmental impacts resulting from the implementation of qualifying PPS to ensure the prevention or prompt identification and remedy of adverse or unforeseen effects. Consequently, subsequent to the adoption of the Climate Change Strategy, the Council is obligated to monitor the significant environmental impacts arising from its implementation. This monitoring should assist identification of significant environmental effects arising from implementation of the Strategy and any unforeseen effects in order to prevent, reduce or offset these effects.

6.2 The formulation of specific measures to monitor the significant environmental impacts of the Climate Change Strategy's implementation will be integrated into the post-adoption statement, prepared promptly following the adoption of the Strategy, as stipulated by Section 18 of the 2005 Act. This will encompass the development of an action plan and an outcome monitoring plan featuring a variety of indicators to gauge progress across each environmental aspect. The finalisation of the monitoring plan will take into account relevant comments received during the consultation process. Monitoring activities will be carried out annually and reported to the Council's Climate Emergency Board, Climate Emergency Working Group, and the public. Additionally, the State of the Environment report is reviewed biennially.

7. Next steps

a. Consultation

7.1 The draft Climate Change Strategy and Environmental Report are published on the Clackmannanshire Citizen Space platform for public consultation for a period of 6 week. During this time responses to the consultation can be submitted by:

- Filling the questionnaire provided in the platform Citizen Space
- E-mail to: climatechange@clacks.gov.uk
- Writing to: Clackmannanshire Council, Sustainability, Kilncraigs, Greenside Street, Alloa, FK10 1EB

7.2 To assist consultees in providing focused feedback on the Environmental Report, the following questions are offered as guidance. However, responses need not be limited to these questions; broader comments on the Environmental Report and the draft Strategy are also welcomed.

7.3 **Questions:**

- Are there any additional environmental objectives outlined in other plans, programs, or strategies (PPS) that should be considered in the assessment of the Strategy?
- Has the Environmental Report adequately covered all significant environmental aspects within the Strategy area, including identified issues?
- Do you agree with the environmental evaluation of the objectives, priorities, supporting plans, and major projects?
- Are the proposed mitigation measures sufficient to address potential negative impacts?
- What are your thoughts on the methods for monitoring the significant effects of Plan implementation, including suggested indicators?

7.4 After the consultation period specified above, feedback received on the draft Strategy and SEA Environmental Report will be carefully considered and taken into account. Following the Council's approval of the Strategy, a Post-Adoption Statement will be published, detailing how consultation comments and assessment findings have been considered in both the SEA Environmental Report and the CC Strategy.

b. Habitats Regulations Appraisal

7.5 Under the EC Habitats Directive, all competent authorities must consider whether any plan or project could affect a European site before it can be authorized or carried out. This includes determining whether it will have a 'likely significant effect' on a European site, and if so, they must conduct an 'appropriate assessment' (AA), which is referred to as the Habitats Regulations Appraisal (HRA). Article 6(3) of the Directive requires that any PPS, which is not

directly connected with or necessary for the management of a European site but would likely have a significant effect on such a site, either individually or in combination with other plans or projects, shall be subject to an HRA.

7.6 While it is recognised that the SEA process offers an opportunity for early identification of any likely significant effects on European sites, it is not practical to undertake the full HRA process at this stage. The SEA process identified that proposals within the Climate Change Strategy program have the potential to impact Natura sites and Protected Species, raising the possibility of significant effects on their qualifying interests. However, the Strategy does not have a spatial nature but rather aims to influence different themes to adopt a more climate-sensitive approach. At this planning stage, there is insufficient detail available on specific development project sites and options for a meaningful HRA to be carried out.

7.7 In conclusion, this Environmental Report therefore considers whether project proposals are likely to raise concerns about impacts on Natura sites and Protected Species and suggests how any such impacts can be avoided or mitigated, but an HRA will be deferred until more detailed planning application stages.

c. Future milestones

7.8 Anticipated milestones in the development and adoption of SEA and Climate Change Strategy are outlined in the table below.

No.	Milestone	Date
1.	Consultation on draft Strategy and SEA Environmental Report	September/October 2024
2.	Consultation responses collated and considered	October 2024
3.	Strategy and ER revised to take account of consultation responses	October 2024
4.	Draft Strategy and SEA Environmental Report to Board	November 2024
5.	Draft Strategy and SEA Environmental Report to Council	November 2024
6.	Final SD Strategy, SEA Environmental Report and post-adoption statement published	December 2024
7.	Monitor and review of ER	Biennially thereafter

ANNEX A: Comments Received from the Consultation Authorities on the Screening and Scoping Report

Consultation Authority – **NatureScot**

No.	Report Section	Comment	Clackmannanshire Council Response
1.	**Screening**	NatureScot is content with the decision to screen this Plan into the SEA process.	No action required
2.	**Scope and level of detail**	NatureScot is content the scope and level of detail proposed for the Environmental Report.	No action required
3.	**Consultation period**	NatureScot notes that a period of 6 weeks is proposed for consultation on the Environmental Report and is content with this proposed period.	No action required
4.	**Setting the Context**	This should cover relations with other plans and the environmental objectives that should be taken on board	Noted, see *chapter 2*, *section e* & *Annex B*
5.	**Baseline information**	The Environmental Report should include a description of the likely evolution of the environment without the plan to provide a frame of reference for the assessment of the plan.	Noted, see *section 3.c*
6.	**Significant issues**	Attention should be given to: protected species, designated sites and nationally and internationally protected areas. The issues of sustainable use of biodiversity, ecosystem level diversity, networks and wildlife corridors, threats of alien species and the importance of non-protected biodiversity should also be given attention as should matters relating to landscape, access, open space and informal recreational provision. It is possible that significant effects in relation to locally valued landscape and wildlife sites may also be identified. We also advise that the added value of nature-based solutions and green infrastructure be borne in mind, especially as both public and private sectors are increasingly applying a natural capital approach to their business.	Noted.
7.	**Any effects on Natura sites/species**	Plans of public bodies that require appraisal under the Habitats Regulations are also likely to require SEA. For example: Guidance recommends that plan-making bodies can consider opportunities to combine the earlier stages of SEA and Habitats Regulations Appraisal, where appropriate, even though the differing requirements mean that the two assessments cannot be fully integrated. One option is to conduct the earlier stages in parallel, such as environmental information gathering, prediction of plan effects, and some early consultation stages. If the Habitats Regulations Appraisal is undertaken in parallel with SEA, it is important that the findings of both appraisals are separately and clearly documented and that the record of the Habitats Regulations Appraisal uses the correct terminology, applying them appropriately. In practice, it is easier to set out the Habitats Regulations Appraisal in a separate record, and where appropriate provide a cross-reference to it in the Environmental Report.	See *chapter 7, section b*
8.	**SEA objectives**	SEA objectives provide a tool for assessing the potential environmental effects arising from the implementation of the plan. This is distinct from the environmental objectives of the plan, which are used to consider the environmental performance of the plan through its lifetime	Noted.
9.	**Report structure**	Schedule 3 of the Environmental Assessment (Scotland) Act 2005 sets out the information to be included in the Environmental Report.	Noted.
10.	**Assessment Methodology**	This should include consideration of alternatives, assessment criteria and, where known, indicators and monitoring arrangements. It may be that Responsible Authorities will wish further consultation on these matters.	The assessment has considered 3 alternatives and has provided a methodology on how will assess them.

Consultation Authority – **Scottish Environment Protection Agency (SEPA)**

No.	Report Section	Comment	Clackmannanshire Council Response
1.	**Screening**	In regard to our main areas of interest (air, water, soil, human health, material assets and climatic factors) we agree with the conclusions of the screening report that the proposed PPS may have significant environmental effects.	No action required
2.	**Scope and level of detail**	We are satisfied with the contents of the Clackmannanshire Climate Change Strategy scoping report.	No action required
3.	**Relationship with other Plans, Policies and Strategies (PPS)**	Some of the PPS included have themselves been subject to SEA. Where this is the case you may find it useful to prepare a summary of the key SEA findings that may be relevant to the Clackmannanshire Climate Change Strategy. This may assist you with data sources and environmental baseline information and also ensure the current SEA picks up environmental issues or mitigation actions which may have been identified elsewhere.	Noted, see *chapter 2*, *section d*
4.	**Consultation period**	We are satisfied with the proposal for a six-weeks consultation period for the Environmental Report.	No action required
5.	**Baseline information**	We do not have capacity to check each individual set of data presented in the scoping report, therefore we point to the package of information and data sources (SEPA Evidence Sources) that we have shared with Clackmannanshire Council for the preparation of the Evidence Report for the Local Development Plan. SEPA also holds significant amounts of environmental data which may be of interest to you in preparing the environmental baseline, identifying environmental problems, and summarising the likely changes to the environment in the absence of the PPS, all of which are required for the assessment. Many of these data are now readily available on SEPA's website. Additional local information may also be available from our Access to Information unit (foi@sepa.org.uk). Other sources of data for issues that fall within SEPA's remit are referenced in our SEA topic guidance notes for air, soil, water, material assets, climatic factors and human health.	Noted, see *Annex 3*
6.	**Environmental problems**	We consider that the environmental problems described generally highlight the main issues of relevance for the SEA topics within our remit.	No action required
7.	**Alternatives**	We are satisfied with the alternatives outlined. These should be assessed as part of the SEA process and the findings of the assessment should inform the choice of the preferred option. This should be documented in the Environmental Report.	Noted, see summery in *chapter 5*, *section a* & *Annex 4*
8.	**Scoping in / out of environmental topics**	We agree that in this instance all environmental topics should be scoped into the assessment.	No action required
9.	**Methodology for assessing environmental effects**	Including a commentary section within the matrices in order to state, where necessary, the reasons for the effects cited and the score given helps to fully explain the rationale behind the assessment results. This allows the Responsible Authority to be transparent and also allows the reader to understand the rationale behind the scores given.	Policy Assessment and Alternative Assessment matrix have already had a commentary section. For the other matrixes the commentary section was added.
10.		Where it is expected that other PPS are better placed to undertake more detailed assessment of environmental effects this should be clearly set out in the Environmental Report.	Noted
11.		We expect all aspects of the PPS which could have significant effects to be assessed.	The two first components of the strategy consist historic data emission of the council and the governance bodies which will monitor the implementation. The third section consisting of Strategic themes and Actions which are expected to have potential environmental effects, will be part of the assessment.

<table>
<tr><th>No.</th><th>Report Section</th><th>Comment</th><th>Clackmannanshire Council Response</th></tr>
<tr><td>12.</td><td></td><td>We support the use of SEA objectives as assessment tools as they allow a systematic, rigorous and consistent framework with which to assess environmental effects.</td><td>No action required</td></tr>
<tr><td>13.</td><td></td><td>When it comes to setting out the results of the assessment in the Environmental Report, please provide enough information to clearly justify the reasons for each of the assessments presented. It would also be helpful to set out assumptions that are made during the assessment and difficulties and limitations encountered.</td><td>Noted, see chapter 5 section d</td></tr>
<tr><td>14.</td><td></td><td>It is helpful if the assessment matrix directly links the assessment result with proposed mitigation measures such as in the example below:

<table><tr><th>SEA ISSUES –CHECKLIST QUESTION</th><th>Yes/ No</th><th>Effect</th><th>COMMENT and OPPORTUNITIES TO MITIGATE OR IMPROVE</th></tr><tr><td>Is the allocation at risk from fluvial or coastal flooding?</td><td>Y</td><td>Negative</td><td>Part of site found to be at risk now removed from allocation.</td></tr><tr><td>Could the allocation have a physical impact on existing watercourses?</td><td>Y</td><td>Negative</td><td>Site dissected by watercourse. Developer Requirements includes statement "watercourse to be integrated as positive feature of the development. No culverting."</td></tr><tr><td>Can the allocation currently be connected to the public sewerage system?</td><td>Y</td><td>Positive</td><td>Developer Requirement includes statement "connect to public sewer"</td></tr></table></td><td>Noted, see chapter 5 section b</td></tr>
<tr><td>15.</td><td>Design of the Assessment Matrices</td><td>We are content with the proposed detailed assessment matrices proposed in Section 5 and in the Annexes, however we would recommend that a commentary box is added to fully explain the rationale behind the assessment results, as a space for this appears not to be available in the tables.
In particular, Table 6 (Policy assessment scoring) could include a symbol for unknown effects (usually'?'). You may also want to consider if there could be mixed effects (+/-).</td><td>Noted, see chapter 4, section b</td></tr>
<tr><td>16.</td><td rowspan="4">SEA objectives</td><td>General - We are generally content with the proposed SEA objectives to be used in the assessment, however we have the following comments to make in relation to Table 3- Proposed SEA objectives in relation to the assessment of the Climate Change Strategy.</td><td>No action required</td></tr>
<tr><td>17.</td><td>Soil - We welcome the objective promoting soil restoration, however this is not reflected in the questions as they only refer to protection/reduction. In particular, we highlight the important role of peat restoration as a way to store carbon and therefore contributing to climate change mitigation.</td><td>Noted, see chapter 4, section f</td></tr>
<tr><td>18.</td><td>Water - The sub-objective "protect and enhance the overall water bodies" would be clearer if it read "protect and enhance the overall ecological status of waterbodies"</td><td>Noted, see chapter 4, section f</td></tr>
<tr><td>19.</td><td>Materials assets - Main objective: minimise waste and energy consumption and promote resource efficiency. The promotion of resource efficiency seems to repeat the concept of minimise waste and energy consumption. We would recommend using "…and promote use of renewable energy".
There could be a sub objective for renewables and use of district heating.</td><td>Noted, see chapter 4, section f</td></tr>
<tr><td>20.</td><td rowspan="3">Mitigation & enhancement</td><td>We encourage you to use the assessment as a way to improve the environmental performance of individual aspects of the final option; hence we support proposals for enhancement of positive effects as well as mitigation of negative effects</td><td>No action required</td></tr>
<tr><td>21.</td><td>It is useful to show the link between potential effects and proposed mitigation / enhancement measures in the assessment framework</td><td>Noted, see chapter 5 section c</td></tr>
<tr><td>22.</td><td>We encourage you to be very clear in the Environmental Report about mitigation measures which are proposed as a</td><td>Noted, see chapter 5, section c</td></tr>
</table>

<table>
<tr><th>No.</th><th>Report Section</th><th>Comment</th><th>Clackmannanshire Council Response</th></tr>
<tr><td></td><td></td><td>result of the assessment. These should follow the mitigation hierarchy (avoid, reduce, remedy or compensate).</td><td></td></tr>
<tr><td>23.</td><td></td><td>One of the most important ways to mitigate significant environmental effects identified through the assessment is to make changes to the plan itself so that significant effects are avoided. The Environmental Report should therefore identify any changes made to the plan as a result of the SEA.</td><td>Noted, see chapter 5, section e</td></tr>
<tr><td>24.</td><td></td><td>Where the mitigation proposed does not relate to modification to the plan itself then it would be extremely helpful to set out the proposed mitigation measures in a way that clearly identifies: (1) the measures required, (2) when they would be required and (3) who will be required to implement them. The inclusion of a summary table in the Environmental Report such as that presented below will help to track progress on mitigation through the monitoring process.
<table>
<tr><th>Issue / Impact Identified in ER</th><th>Mitigation Measure</th><th>Lead Authority</th><th>Proposed Timescale</th></tr>
<tr><td>Insert effect recorded in ER</td><td>Insert mitigation measure to address effect</td><td>Insert as appropriate</td><td>Insert as appropriate</td></tr>
<tr><td>etc</td><td>etc</td><td>etc</td><td>etc</td></tr>
</table></td><td>Noted, see chapter 5, section c</td></tr>
<tr><td>25.</td><td>Monitoring</td><td>Although not specifically required at this stage, monitoring is a requirement of the Act and early consideration should be given to a monitoring approach particularly in the choice of indicators. It would be helpful if the Environmental Report included a description of the measures envisaged to monitor the significant environmental effects of the plan.</td><td>Noted, see chapter 6, section a</td></tr>
<tr><td>26.</td><td>Outcomes of the Scoping exercise</td><td>We would find it helpful if the Environmental Report included a summary of the scoping outcomes and how comments from the Consultation Authorities were considered.</td><td>Noted, see chapter 4, section c & d</td></tr>
</table>

Consultation Authority – **Historic Environment Scotland (HES)**

No.	Report Section	Comment	Clackmannanshire Council Response
1.	**Screening**	We note that the historic environment has been scoped into the assessment, and that the Screening & Scoping Report (Section 4.1) anticipates the potential for both positive and negative effects for cultural heritage from the CCS. Based on the information provided, we are content with this approach and are satisfied with the scope and level of detail proposed for the assessment.	No action required
2.	**Scope and level of detail**	We note that the historic environment has been scoped into the assessment, and that the Screening & Scoping Report (Section 4.1) anticipates the potential for both positive and negative effects for cultural heritage from the CCS. Based on the information provided, we are content with this approach and are satisfied with the scope and level of detail proposed for the assessment.	No action required
3.	**Consultation period**	Section 6 (Consultation and next steps) of the SEA screening & scoping report States that the consultation on the Environmental Report will be open to the public and consultation authorities for 6 weeks in May/June. We are content with this approach.	No action required
4.		Please note that, for administrative purposes, we consider that the consultation period commences on receipt of the relevant documents by the SEA Gateway.	Noted

ANNEX B: Compatibility analysis of the CC Strategy with other relevant legislation, PPSs and environmental objectives

Symbol	++	+	+/ x	?	0	x	xx
Assessment	**Major** Delivers the aim of the PPS	**Minor** Delivers part of the aim of the PPS	**Mixed** Delivers some part and conflicts other part of the aim of the PPS	**Uncertain** Unsure if it delivers part of the aim of the PPS	**Neutral** Neither delivers or conflicts with the PPS	**Minor** Does not deliver the aim of the PPS	**Major** Conflicts with the aim of the PPS

Policy area			Environmental Objectives	Score	How it affects or is affected by the proposed Climate Change (CC) Strategy
No.	Scale	PPS Name			
Climatic factors					
1.	International	UN Framework Convention on Climate Change (1992)	An international environmental treaty aiming to stabilise greenhouse gas concentrations in the atmosphere at a level that avoids dangerous climate change impacts, such as extreme weather events, sea-level rise, and disruptions to ecosystems and human societies. The UNFCCC sets out principles and commitments for international cooperation on climate change, including: Mitigation, Adaptation, Technology transfer and Financial assistance.	++	The CC Strategy addresses the effects of climate change and has adopted the principles of the convention.
2.		Kyoto Protocol 1997	The protocol aims to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system by setting binding emission reduction targets for developed countries.	++	The CC Strategy aims to identify and coordinate actions that help reduce greenhouse emissions.
3.		Paris Agreement - (UNFCCC) 2015	International agreement to strengthen the global response to climate change and limiting global warming by holding the increase in the global average temperature well below 2 °C pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 degrees Celsius.	++	The CC Strategy will contribute to the achievement of global commitments at a local level.
4.	National	Climate Change Scotland Act 2009	The Act establishes targets aiming to decrease Scotland's emissions by a minimum of 80% by 2050 compared to the 1990 baseline. It imposes obligations on all public bodies to conduct their operations in a manner that optimally aids in achieving emissions reduction goals, implementing any mandated adaptation programs, and prioritising sustainability considerations.	++	The CC Strategy aim to reach net zero at the latest 2045 for the wide area of Clackmannanshire.
5.		Climate Change (Emissions Reduction Targets) (Scotland) Act 2019	This Act amends the Climate Change (Scotland) Act 2009 and creates a new statutory framework for greenhouse gas emissions reductions in Scotland by setting a target of net-zero carbon emissions by 2045 at the latest, with interim targets for reductions of at least 56% by 2020, 75% by 2030, and 90% by 2040.	++	The CC Strategy will contribute to the achievement of Scotland commitments at a local level.
6.		Public Bodies Climate Change Duties	Part 4 of the Climate Change (Scotland) Act 2009 places duties on public bodies relating to climate change. These duties require that a public body must, in exercising its functions, act in the way best calculated to contribute to the delivery of emissions reduction targets (known as 'mitigation'), in the way best calculated to help deliver any statutory climate change adaptation programme, and in a way that it considers is most sustainable.	++	The CC Strategy will set out how the Council will meet its public sector duties and how it will contribute to the national greenhouse gas reduction targets.

Policy area			Environmental Objectives	Score	How it affects or is affected by the proposed Climate Change (CC) Strategy
No.	Scale	PPS Name			
7.		Climate Change Plan 2018 – 2032 (Scotland, 2018)	The plan sets out the path to a low carbon economy while helping to deliver sustainable economic growth and secure the wider benefits to a greener, fairer and healthier Scotland in 2032.	+ +	The CC Strategy will contribute to delivering on the policies and proposals set out in the Plan.
8.		*Securing a green recovery on a path to net zero*: Climate Change plan 2018-2032 – update	The plan is an update the 2018 Plan by aligning with the targets set by Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 and focuses on a Green Recovery from the Covid-19 pandemic.	+ +	The CC Strategy 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;
9.		The Climate Change (Nitrogen Balance Sheet) (Scotland) Regulations 2022	The regulation aims to manage nitrogen use to reduce greenhouse gas emissions and mitigate environmental impacts such as air and water pollution. It requires establishing a Scottish Nitrogen Balance Sheet (SNBS).	+	The CC Strategy will where possible support the principles of the regulations.
10.		*Climate Ready Scotland:* Climate Change Adaptation Programme 2019-2024 (Scotland, 2019)	The five-year programme to prepare Scotland for the climate change challenges by adapting and building resilience to these changes. The plan recognises the links between adaptation and mitigation action to help deliver wider objectives for our society and economy.	+ +	The CC Strategy will support the aims of the Adaptation Programme
11.		Just Transition Commission 2021	These recommendations intended to support a just transition include improvements for priority bus infrastructure and improving connectivity for people in lower socio-economic groups as the local authorities and developers are required to "commit to creating communities that embed low carbon lifestyles, while improving our health and wellbeing".	+ +	The CC Strategy 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.
Biodiversity, Flora & Fauna					
12.	International	EU Birds Directive	The regulation protects all wild birds, their nests, eggs, and habitats within the EC, with a focus on safeguarding European wild birds and designated species' habitats, notably through the establishment of Special Protection Areas (SPAs).	+ +	The CC Strategy will adhere to the Directive by ensuring no negative impact on Special Protection Areas (SPAs) or the safeguarding of wild, rare, and vulnerable birds, their nests, eggs, and habitats.
13.		EU Habitats Directive	The directive aims to protect biodiversity by conserving natural habitats and wild flora and fauna, providing the basis for classifying both Special Areas of Conservation (SAC) and Special Protection Areas (SPA).	+ +	The CC Strategy will adhere to the Directive by ensuring no negative impact on Special Protection Areas (SPAs) and Special Areas of Conservation (SAC)
14.		Habitats Regulations (1994)	The Habitats Regulations transpose the provisions of the EU Habitats and Birds Directives (European Council Directive 92/43/EEC Habitats Directive) into Scottish Law and require that plans and projects are subject to an appropriate assessment of their implications for European sites.	+ +	Some actions/projects may have an impact on Natura sites and require a Habitats Regulations Appraisal (HRA) and possibly an 'appropriate assessment' to ensure they do not adversely affect the site.
15.		UN Convention on Biological Diversity (1992)	The Convention aims to conserve vulnerable or threatened species and habitats locally and nationally, thereby contributing to global biodiversity conservation. It also seeks to raise awareness of local natural resources and engage communities in practical conservation efforts while promoting sustainable resource use.	+ +	The CC Strategy has as one of the strategic themes *Biodiversity*, aiming to conserving and, where possible, restoring biodiversity and avoiding adverse impacts on sites, habitats and species of value.

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No.	Scale	PPS Name			
16.		Edinburgh Declaration 2022	Setting out the aspirations and commitments of the Scottish Government, Edinburgh Process partners, and the wider subnational constituency of the Convention on Biological Diversity, in delivering for nature over 10 years.	+ +	The CC Strategy will help adopt a wide approach to the conservation of biodiversity.
17.	National	Wildlife & Countryside Act 1981 (as amended)	This Act implements the European Council Directive 2009/147/EC on the conservation of wild birds. It gives protection to native and listed species; enhances nature conservation including protection for SSSI and National Parks; and maintaining public rights of way records.	+ +	The CC Strategy will safeguard the area's biodiversity and biodiversity assets by ensuring outcomes lead to protection of wildlife.
18.		Nature Conservation (Scotland) Act 2004	The act sets out a series of measures, which are designed to conserve biodiversity and to protect and enhance the biological and geological natural heritage of Scotland. The act places duties on public bodies in relation to the conservation of biodiversity and increases protection for Sites of Special Scientific Interest (SSSI).	+ +	The CC Strategy will safeguard the area's natural heritage and will promote locally important sites for nature including protecting species, habitats and landscape due to climate change results such as flooding, erosion, high temperatures, pests and disease and fragmentation.
19.		*Making the Links:* Greenspace for a more successful and sustainable Scotland (2009)	The guideline aims to leverage greenspaces as valuable assets for promoting environmental sustainability, enhancing quality of life, and fostering resilient and successful communities across Scotland.	+ +	The CC strategy should take account of the actions required to deliver quality.
20.		Wildlife & Natural Environment (Scotland) Act 2011	The act introduced legislation on nature conservation and key measures affecting the way land and the environment is managed.	+ +	The CC strategy will promote positive actions towards sustainable land use management.
21.		*Scotland's Biodiversity:* A Route Map to 2020 (Scottish Government, 2015)	The rout map establishes the major steps needed to improve the state of nature in Scotland and meet the international Aichi Targets for biodiversity.	+ +	The Biodiversity, Carbon Storage and Agriculture theme in the CC strategy will play an important role in tackling the ecological emergency alongside the climate emergency by enhancing local biodiversity assets.
22.		Scottish Forestry Strategy (2019-2029)	The strategy presents a long-term vision and framework to enhance Scotland's forests and woodlands over the next 50 years. It highlights forestry's crucial role in advancing Scotland's transition to a low-carbon economy and addressing climate change threats through carbon sequestration and adaptation measures like natural flood management. Additionally, the strategy underscores the importance of ensuring Scotland's forests and woodlands are resilient and adaptable to future climate challenges.	+ +	The CC Strategy will acknowledge the significance of native woodland in climate action, environmental preservation, community well-being, and health by expanding tree canopy coverage and safeguarding tree populations from damage, degradation, pests, and disease.
23.		Pollinator Strategy for Scotland 2017 - 2027 (NatureScot, 2017)	The strategy addresses the causes of decline in populations, diversity, and range of Scotland's pollinator species, aims to make Scotland a more pollinator friendly place.	+ +	The CC Strategy will help tackle the decline in populations caused by minimising the effects of climate change
24.		The Conservation (Natural Habitats) Regulation and Subsequent Amendments (Scotland) Regulations 2019	The Regulations implement the Habitats and Wild Birds Directives, simplifying species protection and enhancing surveillance and monitoring of European protected species. They also designate and protect 'European sites', safeguard 'European protected species', and adapt planning controls to ensure the protection of these sites.	+	The CC Strategy should not adversely affect protected species and habitats.
25.		*Tackling the Nature Emergency* - Scottish biodiversity strategy to 2045	The strategy sets out Scotland's ambition to be Nature Positive by 2030, and to have restored and regenerated biodiversity across the country by 2045.	+ +	The Biodiversity, Carbon Storage and Agriculture theme in the CC strategy will promote actions to protect and where possible restore the biodiversity habitats across Clackmannanshire.

Policy area			Environmental Objectives	Score	How it affects or is affected by the proposed Climate Change (CC) Strategy
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26.	Regional	The Stirling & Clackmannanshire Forestry and Woodland Strategy	The strategy aims to provide a range of benefits for local people and visitors and contribute to economic, environmental and social well wellbeing through, the expansion, protection and sustainable management of forests and woodlands in Stirling and Clackmannanshire.	+ +	The CC Strategy should not result in conflict with forest and woodland priorities.
27.	Local	Clackmannanshire Biodiversity Action Plan 2012-2017	The plan aims to establish a fully functioning network of ecosystems within Clackmannanshire area, an environment rich in wildlife and an attractive place to live, enjoyed by people, while helping to reduce flooding allowing species to adapt to climate change and securing species populations.	+ +	The Biodiversity, Carbon Storage and Agriculture theme in the CC strategy will support the requirements set to protect the biodiversity of Clackmannanshire area.
Population & Human Health					
28.	National	Land Reform (Scotland) Act 2003	The act establishes statutory public rights of access to land and inland water for recreational and other purposes.	+	The CC Strategy should give consideration to providing recreational benefits to encourage increased levels of physical activity.
29.		Civil Contingencies Act 2004	The act delivers a framework for civil protection in the UK and defines responsibilities for responders to emergencies, including to floods.	+ +	The CC Strategy will coordinate adaption initiatives with a wide-range of partners to reach out to communities that are disproportionately vulnerable to climate change especially with regard to floods.
30.		Good Places Better Health 2008	Identifying what is needed to create places that nurture health and wellbeing and reduce health inequalities.	+	The CC Strategy will consider the impacts of climate change on health inequalities.
31.		Equality Act (Scotland) 2010	The act sets out a framework which prevents individuals from unfair treatment and promotes a more equal society.	+	The CC Strategy will reach out to communities that are disproportionately vulnerable address climate inequalities.
32.		*Achieving a Sustainable Future:* Regeneration Strategy (Scotland, 2011)	The strategy responds to the challenges faced by our most disadvantaged communities to help create a Scotland where all places are sustainable, and where people want to live, work and invest.	+ +	The CC Strategy will seek opportunities create high-value green jobs a role, support reskilling and retraining.
33.		Road Safety Framework to 2020 (Transport Scotland, 2012)	The framework describes the road safety vision for Scotland and sets national targets for reductions in road deaths and serios injuries to 2020.	+	The CC Strategy promotes active travel modes to alleviate road traffic and by providing attractive and safe opportunities.
34.		*Play Strategy for Scotland*: Our Action Plan (Scotland, 2013)	The action plan sets out the steps to enhancing daily experience for children and young people; in their homes, nurseries, schools and communities.	+	The CC Strategy will include young people in the Climate Emergency process and seek them to have a voice shaping the future.
35.		A Long-Term Vision for Active Travel in Scotland 2030 (Transport Scotland, 2014)	The vision aims to encourage more people to walk and cycle for everyday shorter journeys.	+ +	The Low-Carbon Transportation theme scope to reduce emissions while improving active travel infrastructure.
36.		*Let's Get Scotland Walking* – The National Walking Strategy (Scotland, 2014)	The strategy outlines a vision of Scotland where everyone benefits from walking, by create a culture of walking, better quality walking environments throughout Scotland, enable easy, convenient and safe independent mobility for all.	+ +	The CC Strategy will promote the development of world class uninterrupted, well-maintained networks of segregated cycling, walking and wheeling routes that link our communities, schools and businesses.

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37.		Community Empowerment (Scotland) Act 2015	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 CC Strategy should also take every opportunity to maximise the positive contribution of good design in place-making by supporting the resilience of local community food growing.
38.		*Going Further:* Scotland's Accessible Travel Framework (Transport Scotland, 2016)	The framework provides a national vision and outcomes for accessible travel, new ways of working to include disabled people and a high-level action plan to tackle issues.	+	The CC Strategy will promote the development of world class uninterrupted, well-maintained networks of segregated cycling, walking and wheeling routes that link our communities, schools and businesses.
39.		Cycling Action Plan for Scotland 2017 – 2020	The action plan sets out a new set of actions to help achieve the vision of "10% of everyday journeys to be made by bike by 2020".	+	The CC Strategy will support embedding the sustainable travel hierarchy into the Councils policies and programmes.
40.		Fairer Scotland Duty (2018)	The guidance places a legal responsibility on public bodies in Scotland to actively consider how they can reduce inequalities of outcome caused by socio-economic disadvantage, when making strategic decisions.	+ +	The main aim of the CC Strategy is identifying means of maximising the financial, economic and social benefits of a transition to net zero.
41.		*Covid Recovery Strategy:* for a fairer future (Scottish Government, 2021)	The strategy acknowledges the hardship experienced during the global pandemic was not felt evenly, it has both highlighted the inequalities in society and made them worse. This strategy focuses on the efforts required to tackle the inequality and disadvantage.	+ +	The CC Strategy should recognise the chance to rebuild in a way that delivers a greener, fairer and more equal society as we emerge from the Covid-19 pandemic.
42.		Disability Equality Scotland Strategic Plan 2020-2023 (Disability Equality Scotland, 2021)	This strategic plan focused on four key priority area to ensure that all disabled people in Scotland are given a voice with trust, care and empathy. These priority areas are Equality, Participation and Inclusion; Access Panel Network; Membership; Accessible Transport.	+	The CC Strategy should consider the needs of disabled people and address climate inequalities.
43.		The Good Food Nation Bill (Scotland, 2022)	The bill creates links between policy at the national and local levels and for local authorities and health boards in order to collaborate to create good food nation plans. A Food Commission will also be established to scrutinise and make recommendations of the good food nation plans and progress report.	+	The CC Strategy will align with the strategy in terms of food security and the contribution that food has to greenhouse gas emissions.
44.	Local	Clackmannanshire Food Growing and Allotment Strategy	The strategy fulfils the requirements of the Community Empowerment Act and identifies land that may be used as allotment sites, identify other areas of land that could be used for community growing, and describe how the authority intends to increase provision, in particular areas which experience socio-economic disadvantage.	+	The CC Strategy will closely align to the strategy through facilitating opportunities for communities to grow their own food and understanding sustainable land use by considering the contribution that food has to greenhouse gas emissions.
45.		Mainstreaming Equality & Diversity 2021-25 report	The framework for 2021 -25 sets out the Council's ambitions to advance equality and promote diversity. It also responds to new legislative requirements and policy changes since the Equality Act 2010, including The Fairer Scotland Duty, introduced in 2018, Child Poverty (Scotland) Act (2017) and others directly related to human rights.	+ +	The CC Strategy will reach out to communities that are disproportionately vulnerable address climate inequalities.

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46.		Clack Clackmannanshire Sport and Active Living Framework 2018-28	The framework focuses on making Clackmannanshire people to get out- get going – get active through 4 priorities: • Active Communities • Infrastructure and Places • Schools and Education • Leadership and Governance	+ +	The CC Strategy will promote the importance of recreational and functional greenspace within the communities.
Water					
47.	International	EU Water Framework Directive (2000)	The directive sets out rules to halt deterioration in the status of EU water bodies and achieve good status for Europe's rivers, lakes and groundwater through sustainable use of water and river basin management planning.	+ +	The CC Strategy will promote the importance of the good water quality and its sustainable use, mitigate the effects of floods and droughts; and address run off polluting watercourses.
48.		EU Floods Directive 2007/60/EC	The directive aims the reduction and management of risks that floods pose to human health, the environment, cultural heritage and economic activity through improved assessment and the sustainable and coordinated management of flood risk.	+ +	The CC Strategy will provide the framework to help address issues of flooding within the area and develop climate adaptation measures to reduce the risk.
49.		Groundwater Directive (80/68/EEC)	The directive requires that hazardous substances are prevented from entering groundwater and substances defined as non-hazardous pollutants must also be limited so as not to cause local pollution or a deterioration in status.	+	The CC Strategy should address the risks of groundwater pollution from severe weather events.
50.	National	The Water Industry (Scotland) Act 2002	The act assigns duties to Scottish Water to supply wholesome water for domestic purposes, manage sewers and SUDs, as well as maintain water supplies and drainage infrastructure.	+	The CC Strategy should have regard to Scottish Water's duties and address run off polluting watercourses.
51.		Water Environment and Water Services (Scotland) Act 2003	The act implements the requirements of the EU Water Framework Directive (2000) by improving the quality of water bodies and protecting those already in good condition.	+	The CC Strategy will promote the importance of the water environment for biodiversity and people and collaborative working with SEPA and other agencies.
52.		Flood Risk Management (Scotland) Act 2009	This Act aims to reduce and manage the risks that floods pose to human health, the environment, cultural heritage, and economic activity by creating a framework in which organisations involved in flood risk management can co-ordinate actions to deliver sustainable and modern approaches to flood risk management.	+ +	The CC Strategy will strongly support measures to mitigate against flooding and adaptation to reduce flood risk.
53.		Marine (Scotland) Act 2010	The act makes provision for a new statutory marine planning system to sustainably manage demands on the marine environment and includes measures to help boost economic investment and growth in areas such as marine renewables.	+	The CC Strategy should promote objectives that promote clean, safe, healthy and productive water environments.
54.		The Water Environment (Controlled Activities) (Scotland) Regulations 2011, amendment 2017	The regulations outline the different levels of authorisations to allow for proportionate regulation depending on the risk an activity poses for the water environment.	+	The CC Strategy should not promote development that would have adverse impacts on the water environment.

Policy area			Environmental Objectives	Score	How it affects or is affected by the proposed Climate Change (CC) Strategy
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55.		Scotland River Basin Management Plan (2015-2027)	The plan details the strategy and requirements for River Basin Management Planning in Scotland and requires 87% of water bodies to reach 'good' status by 2027.	+	The CC Strategy should align with River Basin Management Plan for the area and will promote collaborative working.
56.		Scotland's National Marine Plan (2015)	The plan fulfils requirements under the Marine (Scotland) Act 2010 to prepare marine plans, providing a cohesive approach which covers both Scottish inshore and offshore waters by incorporating environmental protection into marine decision-making to achieve sustainable management.	+	The CC Strategy should promote objectives that promote clean, safe, healthy and productive water environments.
57.	Regional	Forth Area Management Plan 2010 -2015	The plan aims to maintain and improve the ecological status of the rivers, lochs, estuaries, coastal waters and groundwaters in the Forth advisory group area.	+ +	The CC Strategy will promote sustainable use of natural resources, improve water quality and biodiversity.
58.		Flood Risk Management Plan: Forth Estuary Local Plan District	The plan ensures all efforts to reduce flood risk within the Firth of Forth area are coordinated and outlines the long-term ambition by setting objectives and identifying actions.	+ +	The CC Strategy will align with the plan and ensure future projects will not increase the risk of flooding.
59.		Flood Risk Management Plan: Forth Local Plan District	The plan ensures all efforts to reduce flood risk within the Forth area are coordinated and outlines the long-term ambition by setting objectives and identifying actions.	+ +	The CC Strategy will align with the plan and ensure future projects will not increase the risk of flooding.
Soil					
60.	International	EU Thematic Strategy for Soil Protection 2006	The strategy seeks to: establish common principles for the protection and sustainable use of soils, prevent threats to soils, and mitigate the effects of those threats and preserve soil functions within the context of sustainable use.	+ +	The CC Strategy should recognise the pressures of climate change on soils, address soil quality and reduce degradation.
61.	National	Scottish Soil Framework (2009)	The framework aims to alleviate the pressures on soils, particularly climate change and promotes the sustainable management and protection of soils consistent with the economic, social and environmental needs of Scotland, achieved through targeted activities including reducing/remediating soil erosion; reducing contamination; and protecting soils with historical & cultural features.	+ +	The CC Strategy should consider the contribution that projects could make in delivering the outcomes of the soil framework, especially any proposed land use change or physical measure.
62.		Scotland's National Peatland Plan – Working for our Future (NatureScot, 2015)	The plan recognises the wide range of benefits provided by healthy peatlands to the ecosystem and climate, by focusing on sustainable use, management, and restoration of peatlands.	+ +	The CC Strategy will support the protection and enhancement of peatlands to maximise carbon storage and sequestration.
63.		Draft Peatland and Energy Policy Statement (Scottish Government, 2016)	The statement presents a shared policy on peatland and energy and aims maximise greenhouse gas emissions abatement in the way best designed to deliver multiple benefits.	+ +	The CC Strategy will promote peatland restoration and renewables deployment, by making full use of the decision support tools available to balance carbon emissions savings.
Air					
64.	International	Environmental Noise Directive 2002/49/EC	The directive defines a common approach intended to avoid, prevent or reduce those harmful effects which derive from the exposure to environmental noise.	+	The CC Strategy should seek to develop blue, green infrastructure to support noise management objectives.

Policy area			Environmental Objectives	Score	How it affects or is affected by the proposed Climate Change (CC) Strategy
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65.		EU Thematic Strategy on Air Pollution 2005	The strategy sets out specific objectives, targets, and measures to improve air quality and protect human health and the environment.	+ +	The CC Strategy aims to support air quality standards.
66.		Air Quality Directive (2008/50/EC)	The directive aims to reduce pollution to levels which minimise harmful effects on human health, paying particular attention to sensitive populations, and the environment, to improve the monitoring and assessment of air quality including the deposition of pollutants and to provide information to the public.	+ +	The CC Strategy main aim is to support initiatives that reduce emissions at local scale and tackle climate change by promoting measures to improve air quality.
67.	National	Environment Act 1995 – Local Air Quality Management (LAQM)	The act requires local authorities in the UK to review air quality in their area and designate air quality management areas if improvements are necessary.	+	Clackmannanshire Council does not have any AQMAs however the CC Strategy main aim is to reduction of CO_2 emissions.
68.		Environmental Noise (Scotland) Regulations 2006	The regulations require preparation of strategic noise mapping and noise action planning for large urban areas, Noise Management Areas and Quiet areas.	+ +	The CC Strategy should seek to develop blue, green infrastructure to support noise management objectives.
69.		Air Quality Standards (Scotland) Regulations 2010	These set limits and targets for several airborne pollutants with implications for human health, including carbon monoxide, oxides of nitrogen, Sulphur dioxide, and particulates.	+ +	The primary goal of the CC Strategy is to endorse initiatives that decrease emissions on a local level and address climate change through the promotion of measures aimed at enhancing air quality.
70.		The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2011)	The strategy sets air quality standards and objectives for protecting human health and the environment to be included in regulations for the purposes of Local Air Quality Management. relating to concentrations of, amongst others, carbon monoxide, lead, nitrogen dioxide, ozone and particulates.	+	The CC Strategy ought to acknowledge the influence of climate change on air quality and advocate for the implementation of air quality management measures.
71.		Local Air Quality Management Policy Guidance PG 16 (DEFRA, 2016)	The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved.	+	Clackmannanshire Council does not have any AQMAs however the CC Strategy main aim is to reduction of CO2 emissions.
72.		Pollution Prevention & Control Regulations (Scotland) 2012	The regulations help to regulate and monitor certain industrial activities in Scotland that can generate airborne pollution.	+ +	The CC Strategy should promote collaboration with industrial activities to facilitate will clean air quality actions.
73.		*Cleaner Air for Scotland*: The Road to a Healthier Future 2015	The strategy provides the mechanism for necessary improvement in air quality in Scotland. It places a greater focus on delivering air quality improvement through evidence-based actions and measures and is complemented by existing local air quality management regimes. The approach also highlights the opportunities to generate efficiencies and cost savings by linking air quality to other areas, such as climate change adaption/mitigation and transport.	+ +	The CC Strategy should ensure synergies between climate change and air quality actions.
74.		*Cleaner Air for Scotland 2* – Towards a Better Place for Everyone (Scotland) 2021	Scotland's second air quality strategy sets out the Scottish Government's air quality policy framework for 2021 – 2026 and a series of actions to deliver further air quality improvements, by maximising the benefits from action to tackle poor air quality and build on the linkages with other key government strategies: transport, climate change, health, environment, place, planning, energy and land use.	+ +	The CC Strategy strongly support the aims of the national Strategy by its actions to reduce carbon emissions and reduce pollution.

Policy area			Environmental Objectives	Score	How it affects or is affected by the proposed Climate Change (CC) Strategy
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75.	Local	Clackmannanshire Council Annual Air Quality Report 2023	The annual report ensure air quality is below the threshold of the national objectives.	+ +	The CC Strategy target is the reduction of CO_{2eq} emissions and avoid other air pollutant by reducing traffic congestion, promoting active travel, public transport and electric vehicle use and infrastructure.
76.		Clackmannanshire Council Travel Plan - *Smart Travel*	The plan places s number of measures have been introduced to encourage staff and visitors to travel by more sustainable modes.	+	The CC Strategy will support embedding the sustainable travel hierarchy into the Councils policies and programmes.
77.		*Stirling-Alloa-Kincardine Railway and Linked Improvements:* A Guide to Noise and Vibration	The guide sets the procedures for measuring possible noise and vibration caused by trains running close to houses; who might be eligible to claim compensation; and insulation for houses and noise barriers along the track.	?	The CC Strategy should seek to develop blue, green infrastructure to support noise management objectives.
Landscape					
78.	International	European Landscape Convention (signed by UK in 2006)	The Convention seeks to promote sustainable development, biodiversity conservation, and the preservation of cultural heritage across Europe's diverse landscapes including natural, urban and peri-urban areas, as well as special, every day and also degraded landscapes.	+ +	The CC Strategy will help to safeguard local landscapes and townscapes by influencing changes in land use which can impact on them.
79.	National	*People, Place and Landscape:* A Position Statement from NatureScot and Historic Environment Scotland (HES and Nature Scot, 2019)	The position statement outlines managing change in Scotland's landscapes by making them vibrant and resilient, inspiring and benefiting everyone. They aim for landscapes to be actively managed as essential assets in addressing climate change, while still retaining their sense of place and identity, connecting past and present, people with nature, and promoting wellbeing and prosperity.	+ +	The CC Strategy will take into consideration in protecting the landscape but also enhance it while addressing climate change.
Culture Heritage					
80.	National	Managing Change in the Historic Environment (HES 2010-2019)	It aims to give a series of guidance notes about making changes to the historic environment by assessing the impact and minimizing the ecological impact of preservation and restoration efforts, promoting sustainable practices in conservation projects, and preserving natural habitats within historic sites.	+ +	The CC Strategy will investigate adaptation measures to safeguard townscapes, landscapes, and heritage assets against the impacts of climate change.
81.		*Creating Places*: A Policy Statement on Architecture and Place (Scotland, 2013)	The policy statement underscores the transformative power of good design, highlighting its ability to foster vibrant communities and enhance cultural connections. The policy seeks to cultivate healthier, more sustainable communities while safeguarding Scotland's rich natural and cultural heritage.	+ +	The CC Strategy seeks to support the development of sustainable places and the protection of existing buildings.
82.		*Our Place in Time* – Historic Environment Strategy for Scotland (2014)	The strategy is a high-level framework, setting out a ten-year vision for Scotland's historic environment to ensure that the cultural, social, environmental and economic value of Scotland's heritage makes a strong contribution to the well-being of the nation and its people. The Strategy has three high level aims: 1. investigating and recording the historic environment, 2. caring and protecting it 3. sharing and celebrating the historic environment's richness and significance.	+ +	The Plan should have regard to the protection of the historic environment and promote the economic value and contribution of the historic environment to local businesses and communities.

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83.		Historic Environment Scotland Act 2014	The Act sets out Historic Environment Scotland's role and legal status, including changes in processes for the designation of monuments and buildings (scheduling and listing) and for consents relating to scheduled monuments, listed buildings, and conservation areas.	+	The CC Strategy should seek to promote and manage the adaptation and maintenance of historic buildings without loss of character.
84.		Scotland's Archaeology Strategy (Scottish Strategic Archaeology Committee, 2015)	The strategy reflects upon archaeological highlights over a five-year period and aims to make archaeology matter for everyone in Scotland.	+	The CC Strategy will investigate ways to protect the archaeological assets in the area to mitigate climatic change.
85.		Historic Environment Policy for Scotland (2019)	The policy is designed to support and enable good decision-making around changes to the historic environment and helping to deliver the vision and aims of Our Place in Time.	+ +	The CC Strategy will acknowledge the significance of the area's historic environment, promoting mitigation measures that respect and complement the townscapes, landscapes, and heritage assets.
Material Assets					
86.	International	The Landfill Directive 99/31/EC	The directive aims to reduce reliance on landfill as a disposal option to prevent or to reduce, as far as possible, the negative environmental effects of landfill, in particular on surface water, groundwater, soil, air, and on human health from the landfilling of waste by introducing stringent technical requirements for those producing, collecting and disposing of waste.	+ +	The CC Strategy aims to facilitate the implementation of the Directive by advocating for a circular economy and minimising landfill waste.
87.		EU Waste Framework Directive (2008/98/EC)	The directive aims to set up measures to protect the environment and human health by preventing or reducing the adverse impacts of the generation and management of waste and by reducing overall impacts of resource use and improving the efficiency of such use.	+ +	The CC Strategy will safeguard waste infrastructure against the effects of climate change.
88.	National	Scotland's Zero Waste Plan (2010)	This plan sets out Scotland's goal of achieving zero waste by prioritising resource efficiency, minimising demand for virgin materials, and maximizing reuse, recycling, and resource recovery. It also emphasises resource conservation through redesign and end-of-life considerations.	+ +	The CC Strategy will consider the recycling targets set by the Scottish Government and will actively support the Plan by fostering the growth of a local circular economy.
89.		*Making Things Last:* a circular economy strategy for Scotland (2016)	The strategy sets out Scotland's priorities for action to move towards a more circular economy, build a strong economy, protect our resources, support the environment and targets to drive circularity.	+ +	The CC Strategy should aim to decrease reliance on limited resources and encourage the adoption of circular economy practices in businesses and communities alike.
90.		*Creating Places* - A policy statement on architecture and place for Scotland	The policy statement underscores the transformative power of good design, highlighting its ability to foster vibrant communities and enhance cultural connections. The policy seeks to cultivate healthier, more sustainable communities while safeguarding Scotland's rich natural and cultural heritage for future generations.	+	The Strategy will promote minimising creation of waste and look for opportunities to re-use materials
91.		National Procurement Journey	It is a structured process which illustrates each step taken from the identification of a need or requirement to the management of the contract and supplier. Its purpose is to provide stakeholders, customers, and suppliers with a chronological guide of all levels of procurement activity. Following this journey will allow you to develop a procurement strategy, manage the process and reduce potential risks.	+ +	The CC Strategy aims to support the strategy within the 6th strategic theme: Economic Development and Sustainable Procurement

Policy area			Environmental Objectives	Score	How it affects or is affected by the proposed Climate Change (CC) Strategy
No.	Scale	PPS Name			
92.		Procurement Reform (Scotland) Act 2014	The act highlights the importance of sustainable procurement for economic recovery in Scotland.	+ +	The CC Strategy will address economic, social and environmental wellbeing in applying climate sensitive solutions.
93.	Local	Clackmannanshire Council Zero Waste Strategy 2012-2022	The strategy 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 policy aligns the third strategic theme of the CC Strategy principles. The CC Strategy ought to advance the goals of the waste hierarchy while potentially pinpointing novel regional waste facilities, ensuring their sustainable implementation and minimizing impacts on communities, the environment, and transportation systems.
94.		Household Waste & Recycling Collection Policy 2023	The Policy helps support a more circular economy by developing a more efficient service with increased quality and quantity of recycling collected.	+ +	The policy aligns with the third strategic theme of the CC Strategy principles.
95.		Council Procurement Strategy	The strategy complies with 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 CC Strategy will provide the strategic direction for ensuring sustainable with procurement practices within the Council.
96.		Council Procurement Action Plan	The plan aims to implement systems for tracking how procurement practices align with the council's climate change responsibilities. It will utilize tools provided by the Scottish Government to prioritize sustainable procurement activities and assess performance levels. Additionally, it will establish a register to monitor and report on sustainable outcomes from procurement, ensuring alignment with internal and external reporting obligations.	+ +	The plan aligns with the CC Strategy principles.
Cross – cutting (Economy, Transport, Housing, Planning, Energy)					
97.	International	Agenda 2030 - Sustainable Development Goals (SDGs) (UN,2015)	The agenda goals offer a collective roadmap for all member states, aiming at peace and prosperity for both people and the planet, spanning present and future. The 17 Sustainable Development Goals urgently summon all nations to address poverty comprehensively, intertwining efforts to enhance health, education, diminish inequality, foster economic growth, combat climate change, and safeguard oceans and forests.	+ +	The CC Strategy should ensure that the Sustainable Development Goals are fully integrated and supported
98.		Energy Performance of Buildings Directive	The directive promotes the improvement of the energy performance of buildings within the EU through cost-effective measures and setting minimum standards for new and existing buildings.	+ +	The CC Strategy will support improvement of the energy performance of buildings and delivery of renewable energies.
99.	National	*Choosing our Future:* Scotland's Sustainable Development Strategy	Sets out action which will be taken in Scotland to turn the shared priorities set out in the UK framework for sustainable development into action.		The CC Strategy should consider objectives that will lead to sustainable communities.
100.		Scottish Planning Policy 2020	The policy national planning policies which reflect Scottish Ministers' priorities to support the transformational change to a low carbon economy, consistent with national objectives and targets.	+ +	The CC Strategy should contribute to delivery of the policy by reducing risk to life, impacts on human health and flood risk, and by helping to protect or improve recreational access and open space.

Policy area			Environmental Objectives	Score	How it affects or is affected by the proposed Climate Change (CC) Strategy
No.	Scale	PPS Name			
101.		Scotland's Economic Strategy (2015)	The strategy sets out the Scottish Government's vision for Scotland's economy and society, focusing on tackling inequality.	+ +	The CC Strategy consider actions that will support sustainable economic growth and tackle inequalities in Clackmannanshire.
102.		Scotland's Third Land Use Strategy 2021-2026	The strategy establishes principles to promote sustainable land use, which encompass encouraging land use practices that yield multiple benefits, making decisions rooted in the preservation of ecosystem services, acknowledging the opportunities and challenges posed by climate change, adopting considerate management of landscape alterations.	+	The CC Strategy should support the principles of sustainable land use to tackle the implications of climate change.
103.		National Planning Framework 4 (2023)	The strategy sets out the framework on how to improve people's lives by making sustainable, liveable, and productive places and reaching targets of net zero emissions by 2045, with significant progress expected towards this by 2030. It is set out in the framework that investment will be made into nature-based solutions whilst also addressing biodiversity loss.	+ +	The CC Strategy will contribute to the delivery of NPF4 at local scale by embedding climate change adaptation considerations, and potential responses such as habitat networks and green networks for the future LDP.
104.		*Scottish Energy Strategy:* The future of energy in Scotland (2017)	The strategy outlines Scotland's ambitious long-term vision for energy, aiming for a thriving, competitive energy sector delivering secure, affordable, and clean energy to households, communities, and businesses, with renewable sources supplying 50% of energy consumption and a focus on energy efficiency, targeting a 30% improvement by 2030.	+ +	The CC Strategy will strongly contribute to meeting the targets by developing the Council's approach to a whole systems approach to encourage affordable clean energy for Clackmannanshire households, communities and businesses.
105.		*Scotland's Energy Strategy:* Position Statement (Scottish Government, 2021)	The statement provides an overview of Scotland key priorities for the short to medium-term in ensuring a green economic recovery, whilst remaining aligned to national net zero ambitions, in the lead up to COP26.	+ +	The CC Strategy will align with the national key priorities for of the statement by promoting decarbonisation of heat, energy efficiency and supporting development of local clean energy projects.
106.		A Low Carbon Economic Strategy for Scotland (Scottish Government, 2010)	The strategy identifies decarbonising and improving the efficiency of transport as key enablers for enhanced productivity and increasing sustainable economic growth to meet Scotland's climate change targets.	+ +	The CC Strategy will align with key enablers within two of its strategic themes.
107.		Scotland's National Transport Strategy (2020)	The strategy redefines for the next 20 years a vision for a sustainable, inclusive, safe and accessible transport system helping deliver a healthier, fairer and more prosperous Scotland for communities, businesses and visitors.	+ +	The CC Strategy will support low carbon transport opportunities within the second strategic theme Low-carbon transport.
108.		Housing to 2040	The strategy sets out a vision for housing in Scotland to 2040, associated with a route map to deliver the Scottish Government's ambition for everyone to have a safe, good quality and affordable home that meets their needs in the place they want to be.	+ +	The CC Strategy will strongly support the national ambition by streamlining home insulation enhancements across all housing types and integrating renewable energy and heating systems into both new constructions and the retrofitting of current dwellings.
109.	Regional	Stirling & Clackmannanshire City Region Deal	The deal is a commitment between the Scottish Government, UK Government, Stirling Council, Clackmannanshire Council and the University of Stirling to deliver a total investment of £214 million over ten years to support the economic development of the Stirling and Clackmannanshire city region through building community wealth, ensuring inclusive growth, driving towards a net zero future, and ensuring the city region grows to be stronger and fairer for all.	+ +	The CC Strategy will strongly align with the deal in addressing the climate emergency challenge, providing a framework to towards net zero and through the promotion of the green economy and green businesses and jobs.

Policy area			Environmental Objectives	Score	How it affects or is affected by the proposed Climate Change (CC) Strategy
No.	Scale	PPS Name			
110.		Regional Transport Strategy (SEStran, 2023)	The strategy aims to create a fully integrated transport system for the South-East of Scotland that will be efficient, connected and safe; create inclusive, prosperous and sustainable places to live, work and visit; be affordable and accessible to all, enabling people to be healthier; and contributing to the region's net zero emissions targets.	+ +	The CC Strategy will help achieve the aim locally through the second strategic theme: Low carbon transport.
111.		Regional Energy Masterplan	The masterplan outlines the steps required to reach a net-zero energy system across Stirling and Clackmannanshire, with specific objectives and outcomes set out, and key performance indicators (KPIs) to monitor progress identified.	+ +	The masterplan (Clackmannanshire part) is a daughter plan of the CC Strategy and details specific steps of the first strategic themes of: Energy, Heat Building.
112.	Local	Clackmannanshire Council's Local Development Plan 2020-2030	The plan sets out the planning policies and proposals for the development and use of land across Clackmannanshire and is supported by Supplementary Guidance which explains in greater detail how planning policies will be used.	+ +	The CC Strategy should support the actions within the plan. particularly in relation to climate change and sustainable development.
113.		Local Outcomes Improvement Plan (LOIP) 2017-2027	The plan set the strategic outcomes for the next 10 years focussing on tackling the inequalities that exist in Clackmannanshire around poverty and socio- economic disadvantage, through the four strategic outcomes: • Clackmannanshire will be attractive to businesses and 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.	+ +	The CC Strategy will help achieve the account of all the outcomes of the plan.
114.		Clackmannanshire Local Housing Strategy (CHS) 2018-2023	The strategy vision is that everyone in Clackmannanshire should have a safe area to live in, a well-maintained house and help when they need it. The main priority areas are: • *The Investing in New Housing Supply* – Quality, affordable housing is maximised. • *Best Use of Existing Housing* - The housing we already have is optimised and effective in providing choice and meeting need. • *Homelessness* - Households have access to appropriate housing and advice to reduce homelessness. • *Specialist Housing and Independent Living* - Those requiring assistance to live independently at home have access to effective housing. • *Energy Efficiency and Fuel Poverty* - Energy efficiency is improved, and fuel poverty and carbon emissions are reduced across all tenures. • *Improving Neighbourhoods and Communities* – Improve long term outcomes for local communities and target town centres for improvement and regeneration to benefit the community.	+	The CC Strategy will provide a focus for ensuring that homes in all tenures are climate resilient and are able to transition to net zero.
115.		Strategic Housing Investment Plan 2022- 2027	The plan defines the priorities for housing investment, as set out in the Clackmannanshire's Housing Strategy (CHS) 2018-23.	+	The CC Strategy will provide a framework for prioritising sustainable development and place making with the focus on climate justice with respect to challenging fuel poverty and ensuring that homes are affordable to run for the owner/renter.
116.		Clackmannanshire Investment Strategy	The strategy sets the Councils 10-year vision that sought to narrow the focus of future council investment and undertake a strategic and considered approach to grant capture.	+	One of the strategic investments opportunities of the strategy is the masterplan of Forthbank Transformation Zone.

Policy area			Environmental Objectives	Score	How it affects or is affected by the proposed Climate Change (CC) Strategy
No.	Scale	PPS Name			
117.		Wellbeing Economic Strategy	The strategy presents a framework and vision for local strategies and programmes joining up work already underway to maximise the opportunities for improving wellbeing outcomes across the local system through 7 key themes: 1. Economic opportunity 2. Fair work, particularly for females 3. Sustainable place 4. Outcomes for young people 5. Environmental sustainability 6. Health and wellbeing 7. Poverty	+ +	The CC Strategy will deliver the 5th key theme of the strategy.

ANNEX C: Environmental Baseline

a. Biodiversity, fauna & flora

Clackmannanshire has a broad diversity of habitat types from the uplands in the Ochil Hills to the estuarine habitats along the River Forth, which forms the southern boundary of the County and all that lies in between including woodland, freshwater, wetland and lowland. Clackmannanshire contains a number of designated Sites including 10 Sites of Special Scientific Interest (SSSI) and approximately 249 hectares of Clackmannanshire are within the Firth of Forth Special Protection Area (SPA) and Ramsar Site.

Table 1 Comparison between Scotland and Clackmannanshire on the trend of vacant and derelict land 2022

Site name	Designation	Features
Back Burn Wood and Meadows	SSSI	• Lowland acid grassland • Upland mixed ash woodland
Craig Leith and Myreton Hill	SSSI	• Northern brown argus • Rocky slopes • Upland assemblage • Sticky catchfly
Craigmad Wood	SSSI	• Upland oak woodland • Lowland dry heath
Damhead Wood	SSSI	• Wet woodland
Devon Gorge	SSSI	• Upland mixed ash woodland
Dollar Glen	SSSI	• Upland mixed ash woodland • Subalpine calcareous grassland • Subalpine flushes • Carboniferous - Permian igneous petrology • Beetle
Firth of Forth	SSSI	• Breeding and non-breeding birds (30 species) • Northern brown argus • Transition grassland • Coastal geomorphology of Scotland • Carboniferous - Permian igneous petrology • Saltmarsh • Mudflats • Mineralogy of Scotland • Lowland neutral grassland • Beetle assemblage • Palaeontology: arthropoda, palaeozoic palaeobotany and permian - carboniferous • fish/amphibia • Quaternary of Scotland • Upper carboniferous and lower carboniferous stratigraphy • Maritime cliff • Sand dunes • Vascular plant assemblage

Site name	Designation	Features
Firth of Forth	Ramsar Site Special Protection Area (International)	• Breeding and non-breeding birds (30 species) • Including qualifying species: Pink Footed Goose; Common Redshank, Slavonian Grebe; Red Knot; Bartailed Godwit • Soil & Geology: Shingle, sand, mud • Physical Features: lowland intertidal sediments, open coast, estuary, lagoon, intertidal rocks. • Complex estuarine site stretching 100 km from River Forth, Stirling, past Clackmannanshire, and past Edinburgh to the estuary mouth. On its length it includes a wide range of coastal and intertidal habitats, salt marches, dune systems, maritime grasslands, heath and fen, cliff slopes, shingle and lagoons; rocky shores, sand and shingle shores, tidal flats, salt marches, coastal brackish, saline lagoons.
Gartmorn Dam	SSSI Local Nature Reserve Country Park	• Open water transition fen • Eutrophic loch
Linn Mill	SSSI	• Upland mixed ash woodland
Mill Glen	SSSI	• Old red sandstone igneous petrology

In addition to the Gartmorn Dam Local Nature Reserve and Country Park, there are also 21 'Local Nature Conservation Sites'. These include wooded areas such as Blackmuir Wood, Braehead Woodlands, Brandyhill Wood, Cowpark Wood, Pond Wood, Red Carr Wood, Devon Gorge Woodlands, Silver Glen & Woodland Park, Twenty-five Acre Wood and Auchlinksy Burn & Wood

Clackmannanshire's woodland accounts for 2446 ha or 16.2% of the total land area of the county, which is a significant proportion in comparison with national averages. Plantation conifer woodlands of pine, mixed spruce and larch account for 36% of the total wooded area. The remaining 1564 ha consists of a range of broadleaved woodland types. Broadleaved woods cover 9.6% of the total land area, which is much higher than the Scottish average of 4.5% and therefore represents an important habitat for the district. The majority of the broadleaved woods (1,091ha or 69.8%) consist of recent broadleaved or mixed plantations. Of the remaining semi-natural woodland resource, only 197ha (12.6%) are long established woodlands, with a tiny proportion (38ha or 2.4%) of ancient woodlands.

There are important fisheries on the Devon for brown trout and salmon, which is protected under Annex II of the EC Species and Habitats Directive. The three British species of lamprey are also covered by this piece of legislation, and all are known from the Forth catchment.

The main potential impacts of development are likely to relate to impacts on the water environment of the Firth of Forth, and habitat connectivity through the woodlands to the east of the area. With regard to the former consideration will need to be given to any relevant designated sites outside the plan area, such as the River Teith Special Area of Conservation and the proposed Outer Firth of Forth and St Andrews Bay Complex Marine Special Protection Area.

b. Population & human health

Clackmannanshire Council, an area of 159.2 km^2, according to Scotland's Census 2022[1] has a population density 325.4 people/ km^2 almost 5 times higher than Scotland (69.8 people/ km^2) and ranking 24 among the 32 overall authorities in Scotland with the highest density.

Between 2001 and 2021, the 25 to 44 age group saw the largest percentage decrease (-14.6%). The 65 to 74 age group saw the largest percentage increase (+59.2%).[2]

Over the next 10 years, the population of Clackmannanshire is projected to decrease by 1.7% due to natural change (more deaths than births). Total net migration (net migration within Scotland, from overseas and from the rest of the UK) is projected to result in a population increase of 1.4% over the same period.

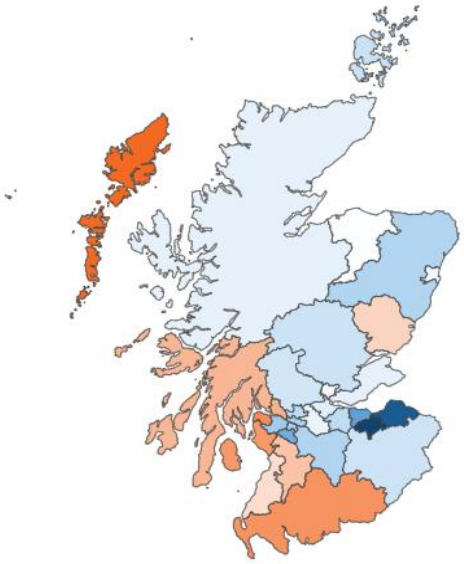


Figure 1 Population changes 2011-2022 in Scotland, local authorities' level.

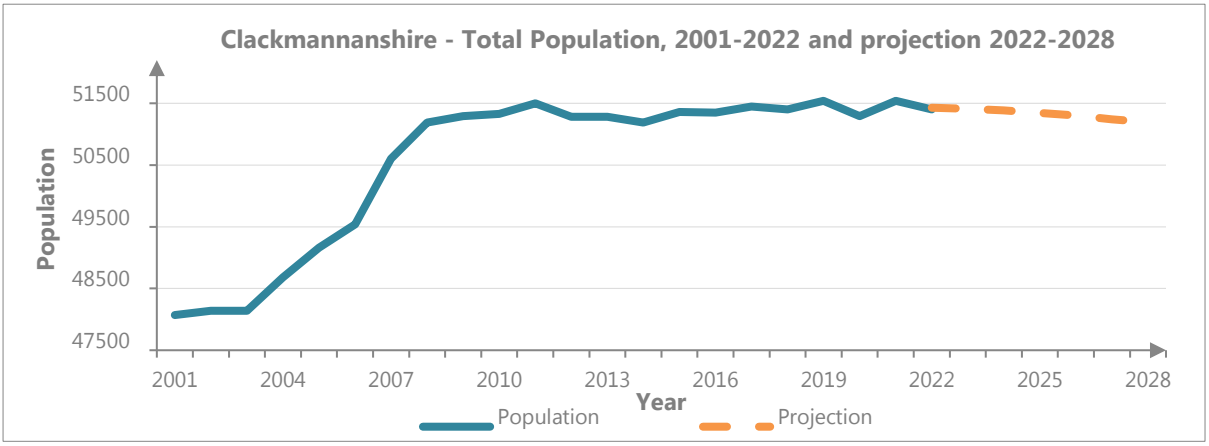


Figure 2 Clackmannanshire Council population during 2001 -2022 and projection from 2022-2028 (NSPS, 2022)

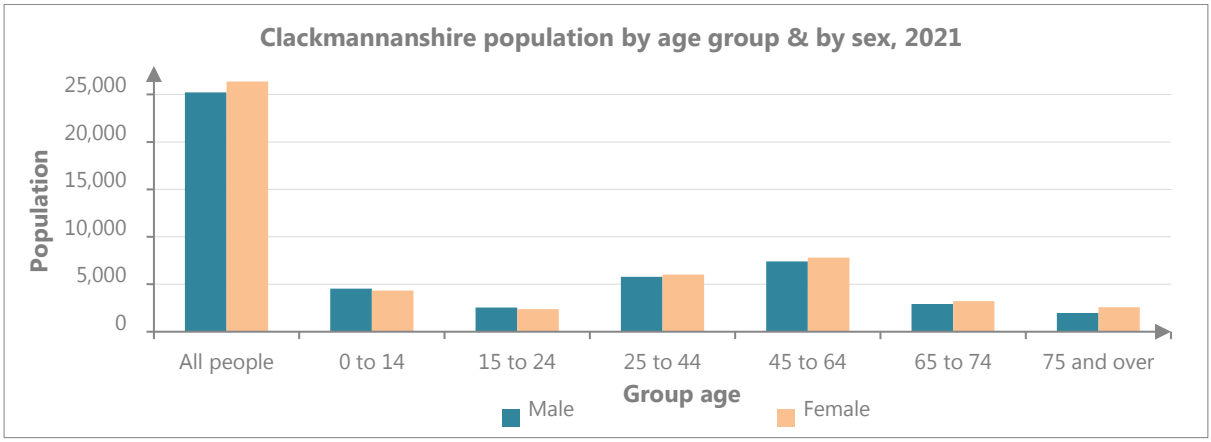


Figure 3 Clackmannanshire Council population by age group and by sex during 2021 (NSPS, 2022)

[1] Data according to the National Statistics Publication for Scotland (NSPS) September 2023, available from: https://www.scotlandscensus.gov.uk/documents/scotland-s-census-2022-rounded-population-estimates-data/

[2] Data according to National Statistics Publication for Scotland (NSPS) July 2022 available from: https://www.nrscotland.gov.uk/files/statistics/council-area-data-sheets/clackmannanshire-council-profile.html#table_pop_proj_age

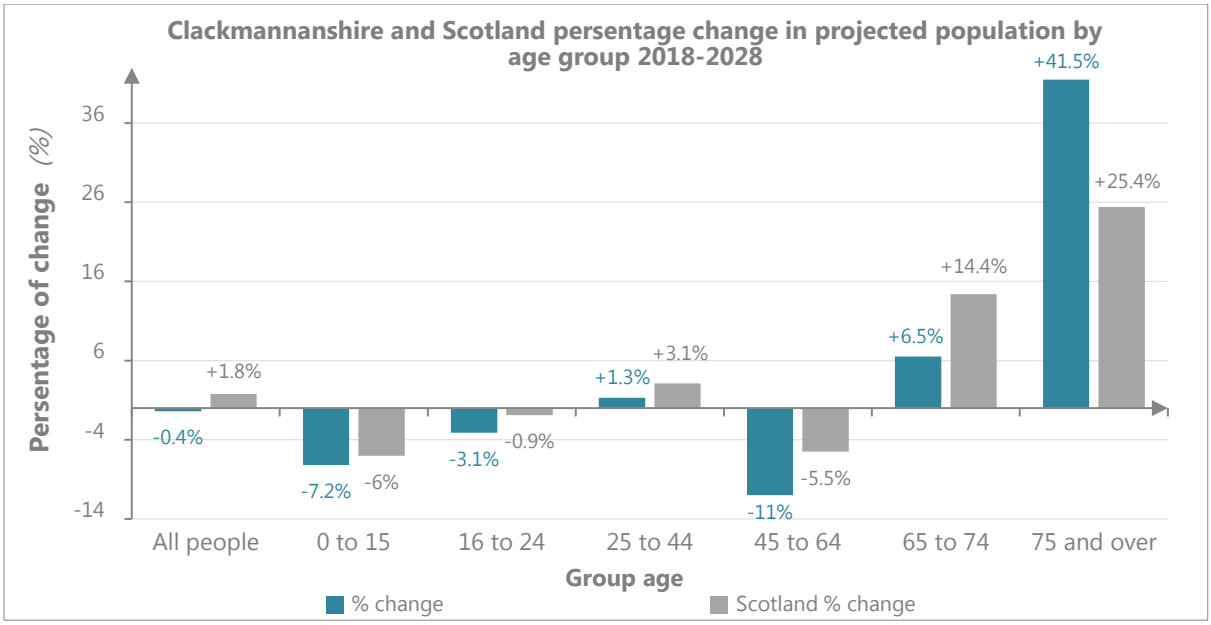


Figure 4 Comparison between Clackmannanshire and Scotland percentage change in projected population by age group 2018-2028 (NSPS, 2022)

The main employment area in Clackmannanshire is in services such as public administration, education, health and other services, with this sector covering approximately 43% of jobs. Other major sources of employment are in the areas of retail, wholesale, manufacturing, finance and business, construction and transport. The

Health trends and life expectancy are typically in line with the rest of Scotland. However, in relation to deprivation (SIMD 2016 figures) Clackmannanshire has a higher than average percentage of datazones within the 20% 'most deprived' in Scotland. Alloa South and East contains 5 of the 10 most deprived datazones in Clackmannanshire, largely on the basis of employment, income, health and education. All of these are within the 10% 'most deprived datazones' in Scotland. Clackmannanshire is generally reasonable or good in terms of geographic access to services SIMD indicators, although parts of the north east of Clackmannanshire including Pool of Muckhart and Yetts o' Muckhart rank within the 10% most deprived in Scotland in terms of geographic access to services.

c. Soil

Soil plays a crucial role by providing a habitat and gene pool, supporting human activities, preserving landscapes and heritage, and supplying raw materials. It performs many essential functions, such as serving as a growth medium for food, forestry, and other biomass production, and facilitating the storage and filtration of water, carbon, and nitrogen. Scottish soils are estimated to contain around 3,200 million tonnes (Mt) of carbon, surpassing more than half of the UK's oil carbon and amounting to 60 times the carbon stored in all of Scotland's vegetation. Notably, peat soils, which cover only about 11% of Scotland's land area, hold over 70% of the nation's carbon.

The high level of development activity in Clackmannanshire during the 2000's enabled the rehabilitation of many areas of contaminated land and brought much vacant and derelict land and buildings back into beneficial use. The Council's annual survey data on vacant and derelict land monitors progress on this. Much of the legacy of Clackmannanshire's industrial past has been addressed; however, there is still more to do, and the plan gives priority to the re-use of brownfield land over development of greenfield sites and encourages appropriate remediation of contaminated land[3].

The low-lying agricultural landscapes of Clackmannanshire are reasonably productive farmland, and the relatively high population density of the area puts pressure on the available land resource. Clackmannanshire has a significant resource of carbon rich soils, particularly in the Ochil Hills. Carbon-rich peat-based soils are a vital asset for storing and sequestering carbon, with their current extent mapped.

There are four Geological Conservation review (GCR) sites in Clackmannanshire:

- GCR3102 Mineralogy of Scotland Alva Mine, Alva
- GCR 2509 Old Red Sandstone Igneous Sheriffmuir Road to Menstrie Burn
- GCR 2504 Old Red Sandstone Igneous Tillicoultry (within Mill Glen SSSI)
- GCR 1383 Carboniferous-Permian Igneous Gloom Hill, Dollar (within Dollar Glen SSSI)

The State of Scotland's Soil report, 2011, compared the environmental and socio-economic impacts of soil degradation processes. It found that loss of soil organic matter appears to be the greatest threat to soil functions, whereas soil erosion and landslides seem to have had the greatest socio-economic impact. By combining environmental and socio-economic impacts, the report concluded that the degradation processes with the greatest potential impact are:

- loss of soil organic matter;
- changes in soil biodiversity;
- soil erosion; then
- landslides and soil sealing

Prime agricultural land is recognised as a valuable and non-renewable resource to support food production within Scotland. The prime agricultural land in Clackmannanshire is primarily situated along the River Devon and the Black Devon. In general, the peat soils/blanket bogs are located in the steeper slopes of the Ochil Hills, and along the Glen Artney, with a combination of blanket bog and industrial peat in the Flanders Moss area. The low-lying agricultural landscapes of Clackmannanshire are productive farmland, and the high population density of the area puts pressure on the available land resource.

The Scottish Vacant and Derelict Land Survey (SVDLS) 2022 survey undertaken to establish the extent of vacant and derelict land in Scotland showed that Clackmannanshire holds approximately 37 ha of

[3] Data according to Clackmannanshire Local Development Plan 2015: https://www.clacks.gov.uk/document/6862.pdf

total vacant and derelict land with 19 sites, which constitutes only 0.4%of the overall area recorded in Scotland. The trend shows a constant reduction of vacant/derelict land during the las 10 years, more specifically almost 50% compared to the 75 ha in 2016.

Table 2 Comparison between Scotland and Clackmannanshire on the trend of vacant and derelict land 2022

	2016	2017	2018	2019	2020	2021	2022
Clackmannanshire	74	64	57	52	50	50	37
Scotland	12,714	11,873	11,172	11,008	11,324	9,518	9,236

Table 3 List of vacant and derelict sites in Clackmannanshire in 2022[4]

Site Name	Site Size (Hectares)	Site Type	Period when site became Vacant or Derelict	Previous Use of Site	Development Potential
Forthbank	1.22	Derelict	1980 or earlier	Manufacturing	Developable - Medium Term
Carsebridge Row	0.57	Vacant Land	2001-2004	Unknown	Developable - Short Term
The Shore	0.6	Derelict	2010	Storage	Developable - Short Term
Patons Bowling Club	1.03	Vacant Land and Buildings	2013	Recreation & Leisure	Developable - Undetermined
Forthbank Yard	0.33	Vacant Land	2015	Unknown	Developable - Short Term
Former Gas Holder	0.63	Derelict	2015	Utility Services	Developable - Medium Term
Industrial Yard	0.72	Vacant Land and Buildings	2016	Transport	Developable - Medium Term
Greenfield House	0.78	Vacant Land and Buildings	2016	Offices	Developable - Medium Term
Former Leisure Bowl Site	1.15	Derelict	2021	Recreation & Leisure	Developable - Short Term
Brook Street/Beauclerc Street	0.53	Derelict	1986-1990	Unknown	Developable - Short Term
Alloa Road	0.18	Vacant Land	2014	Transport	Developable - Undetermined
Former Bus Garage	0.19	Vacant Land and Buildings	2017	Transport	Developable - Short Term
Kilbagie	18.66	Derelict	2015	Manufacturing	Developable - Undetermined
Former Tullygarth Colliery	4.44	Derelict	2015	Mineral Activity	Developable - Undetermined
Former Glenochil Nursery	2.7	Vacant Land	2012	Retailing	Developable - Short Term
Devon Village	0.34	Vacant Land	1996-2000	Transport	Developable - Medium Term
Main Street	0.35	Derelict	2001-2004	Mineral Activity	Developable - Medium Term
Middleton Mill	1.27	Derelict	1986-1990	Manufacturing	Unknown (uncertain /insufficient information)
Blackfaulds Street	0.37	Derelict	2010	Mineral Activity	Developable - Short Term
Crankie Brae	1.44	Vacant Land	2015	Agriculture	Developable - Short Term

[4] Data according to Scottish Vacant and Derelict Land Survey (SVDLS) Site Register 2022 https://www.gov.scot/publications/scottish-vacant-derelict-land-survey-2022/

d. Water

Areas of importance for flood management: The potentially vulnerable areas designated in 2018 based on the potential current or future risk from all sources of flooding within Clackmannanshire Council area are:

1. Hillfoots Villages - potentially vulnerable area due to flood risk to a number of Hillfoots communities including Alva, Dollar, Menstrie and Tillicoultry from the River Devon, small burns running off the Ochil Hills and surface water. There is a long history of flooding in this area, with recent river and surface water causing flooding of homes, roads and fields.
2. Alloa - potentially vulnerable area due to the flood risk to Alloa from the Brothie Burn and to Sauchie from surface water. The Brothie Burn culvert plays an important role in flood risk management. There is a history of surface water flooding in this area including flooding to properties.

Figure 1 Flooding in Alva, Winter 2022/23

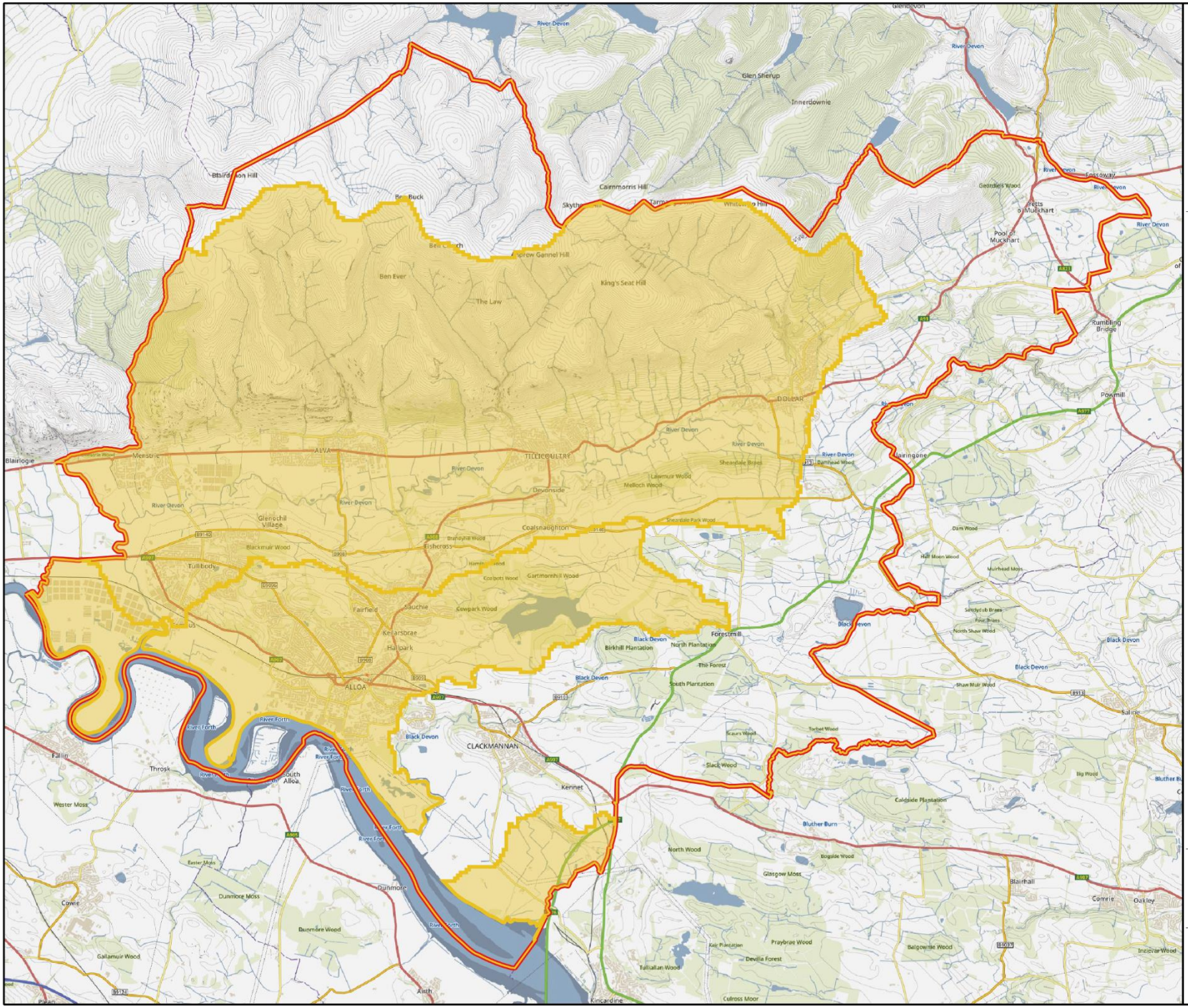
Clackmannanshire Council have operated a cyclical watercourse inspection and maintenance regime since 2011. This comprises a GIS based dataset of recorded key watercourse locations where flood risk is known to have been generated. These locations benefit from cyclical (minimum monthly) inspection and clearance activities carried out and reported on (to the council) by the Community Payback Teams with additional inspections and some works also carried out and reported on by volunteers managed by The Conservation Volunteers and by flood group members in Alva and Menstrie.

The Forth Local Flood Risk Management Pla sets out actions to reduce the impact of flooding the identified from SEPA 2021 through the Flood Risk Management Plan for Forth. Low lying areas adjacent to the River Forth are potentially at risk from flooding along the estuary. There is also flood risk associated with the course of the River Devon, the River Black Devon, and the outflow from Gartmorn Dam.

Rivers: Clackmannanshire is relatively poorly served by open water, with Gartmorn Dam the single largest area of open water. Clackmannanshire Council manages Gartmorn Dam as part of the Gartmorn Dam Country Park. The River Devon and the River Black Devon are the principle rivers in the area. The River Devon rises in the Ochil Hills to the north of the area and flows east to west. The catchment comprises a mountainous upper catchment and a lower floodplain. The River Black Devon flows from east to west through the northern edge of Clackmannan. It rises as a series of small tributaries in low lying hills to the east and out with the Council area.

Water quality: The EU Water Framework Directive requires water bodies (rivers, lochs, groundwater, artificial waters and coastal waters) to be classified on a status basis related to characteristics including ecology, geomorphology, and chemistry to give a holistic overview of each water body. Overall the groundwater across the Clackmannanshire area region is in good condition according to the SEPA database, with some problems in Alloa, Culross and Sirling, however it is predicted that the condition will improve withing 2027 and in the long term.

The water quality of the surface waters is overall good with some problems around some segments along River Devon and Bluther Burn, while the north-west part of Clackmannanshire area such as Wharry Burn and Menstrie Burn remain with high quality of water. The detailed status of surface waters and groundwater in Clackmannanshire in 2021 is set out in Table xx from the SEPA's Water Environment Hub.


N
Potential Vulnerable Areas in Clackmannanshire Council Area
Legend
Potential Vulnerable Areas
© Base map and data from OpenStreetMap contributors, tiles by OpenStreetMap Foundation
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Comhairle Siorrachd Chlach Mhanann
www.clacks.gov.uk

Name	Category	Genre	Sub Basin District	Artificial	Type	Detailed Impacted condition	Current	2027	Long Term
Bluther Burn (Gibsley Farm to Estuary)	River	SURFACE WATER	Forth	N	Surface water	Overall	Poor	Good	Good
						Water quality	Good	Good	Good
						Water flows and levels	High	High	High
						Physical Conditions	Good	Good	Good
						Access for fish migration	Poor	Good	Good
						Freedom from invasive species	High	High	High
Bluther Burn (Source to Gibsley Farm)	River	SURFACE WATER	Forth	N	Surface water	Overall	Poor	Moderate	Good
						Water quality	Moderate	Good	Good
						Water flows and levels	High	High	High
						Physical Conditions	Moderate	Moderate	Good
						Access for fish migration	Poor	Good	Good
						Freedom from invasive species	High	High	High
Brothie Burn (Source to Gartmorn Reservoir)	River	HEAVILY MODIFIED WATER BODY	Forth	N	Surface water	Overall	Good	Good	Good
						Water quality	High	High	High
						Water flows and levels	High	High	High
						Physical Conditions	Good	Good	Good
						Access for fish migration	High	High	High
						Freedom from invasive species	High	High	High
Black Devon (Birkhill Plantation to Forth Estuary)	River	SURFACE WATER	Forth	N	Surface water	Overall	Moderate	Good	Good
						Water quality	Good	Good	Good
						Water flows and levels	High	High	High
						Physical Conditions	Good	Good	Good
						Access for fish migration	High	High	High
						Freedom from invasive species	High	High	High
Black Devon (Source to Birkhill Plantation)	River	SURFACE WATER	Forth	N	Surface water	Overall	Moderate	Moderate	Moderate
						Water quality	Moderate	Moderate	Moderate
						Water flows and levels	High	High	High
						Physical Conditions	Good	Good	Good
						Access for fish migration	High	High	High
						Freedom from invasive species	High	High	High
Foulbutts Burn	River	HEAVILY MODIFIED WATER BODY	Forth	N	Surface water	Overall	Moderate	Moderate	Moderate
						Water quality	Moderate	Moderate	Moderate
						Water flows and levels	Good	Good	Good
						Physical Conditions	Good	Good	Good
						Access for fish migration	High	High	High
						Freedom from invasive species	High	High	High

Name	Category	Genre	Sub Basin District	Artificial	Type	Detailed Impacted condition	Current	2027	Long Term
River Devon (Gairney Burn confluence to Estuary)	River	HEAVILY MODIFIED WATER BODY	Forth	N	Surface water	Overall	Moderate	Moderate	Good
						Water quality	Moderate	Moderate	Good
						Water flows and levels	Good	Good	Good
						Physical Conditions	Good	Good	Good
						Access for fish migration	High	High	High
						Freedom from invasive species	High	High	High
River Devon (Source to Gairney Burn confluence)	River	HEAVILY MODIFIED WATER BODY	Forth	N	Surface water	Overall	Moderate	Moderate	Moderate
						Water quality	Good	Good	Good
						Water flows and levels	Moderate	Moderate	Moderate
						Physical Conditions	High	High	High
						Access for fish migration	High	High	High
						Freedom from invasive species	High	High	High
Menstrie Burn	River	SURFACE WATER	Forth	N	Surface water	Overall	Good	Good	Good
						Water quality	High	High	High
						Water flows and levels	High	High	High
						Physical Conditions	Good	Good	Good
						Access for fish migration	High	High	High
						Freedom from invasive species	High	High	High
Dollar Burn (Burn of Sorrow)	River	SURFACE WATER	Forth	N	Surface water	Overall	Good	Good	Good
						Water quality	High	High	High
						Water flows and levels	High	High	High
						Physical Conditions	Good	Good	Good
						Access for fish migration	High	High	High
						Freedom from invasive species	High	High	High
Wharry Burn	River	SURFACE WATER	Forth	N	Surface water	Overall	High	High	High
						Water quality	High	High	High
						Water flows and levels	High	High	High
						Physical Conditions	High	High	High
						Access for fish migration	High	High	High
						Freedom from invasive species	High	High	High
Brothie Burn (Gartmorn Reservoir to Forth Estuary)	River	HEAVILY MODIFIED WATER BODY	Forth	N	Surface water	Overall	Moderate	Good	Good
						Water quality	High	High	High
						Water flows and levels	High	High	High
						Physical Conditions	Moderate	Good	Good
						Access for fish migration	High	High	High
						Freedom from invasive species	High	High	High

Name	Category	Genre	Sub Basin District	Artificial	Type	Detailed Impacted condition	Current	2027	Long Term
Gartmorn Dam	Lake	SURFACE WATER	Forth	N	Surface water	Overall	Moderate	Moderate	Good
						Water quality	Moderate	Moderate	Good
						Water flows and levels	High	High	High
						Physical Conditions	High	High	High
						Access for fish migration	High	High	High
						Freedom from invasive species	High	High	High
Upper Forth Estuary	Transitional	HEAVILY MODIFIED WATER BODY	Forth	N	Surface water	Overall	Moderate	Moderate	Moderate
						Water quality	Good	Good	Good
						Physical Conditions	Moderate	Moderate	Moderate
						Freedom from invasive species	High	High	High
Tullibody	Groundwater		Forth		Groundwater	Overall	Good	Good	Good
						Water quality	Good	Good	Good
						Water flows and levels	Good	Good	Good
Dollar	Groundwater		Forth		Groundwater	Overall	Good	Good	Good
						Water quality	Good	Good	Good
						Water flows and levels	Good	Good	Good
Longannet	Groundwater		Forth		Groundwater	Overall	Good	Good	Good
						Water quality	Good	Good	Good
						Water flows and levels	Good	Good	Good
Ochils North	Groundwater		Forth		Groundwater	Overall	Good	Good	Good
						Water quality	Good	Good	Good
						Water flows and levels	Good	Good	Good
Culross	Groundwater		Forth		Groundwater	Overall	Poor	Poor	Good
						Water quality	Poor	Poor	Good
						Water flows and levels	Good	Good	Good
Alloa	Groundwater		Forth		Groundwater	Overall	Poor	Poor	Good
						Water quality	Poor	Poor	Good
						Water flows and levels	Good	Good	Good
Stirling	Groundwater		Forth		Groundwater	Overall	Poor	Good	Good
						Water quality	Poor	Good	Good
						Water flows and levels	Good	Good	Good
Ochils	Groundwater		Forth		Groundwater	Overall	Good	Good	Good
						Water quality	Good	Good	Good
						Water flows and levels	Good	Good	Good

Name	Category	Genre	Sub Basin District	Artificial	Type	Detailed Impacted condition	Current	2027	Long Term
Teith and Forth Valleys	Groundwater		Forth		Groundwater	Overall	Good	Good	Good
						Water quality	Good	Good	Good
						Water flows and levels	Good	Good	Good
Devon Sand and Gravel	Groundwater		Forth		Groundwater	Overall	Good	Good	Good
						Water quality	Good	Good	Good
						Water flows and levels	Good	Good	Good

Table 4 Status of water quality in Clackmannanshire based on SEPA monitoring

e. Air

Clackmannanshire is dominated by large amounts of rural land, giving rise to a generally good level of air quality[5]. Clackmannanshire Council continued to monitor concentrations of NO_2, PM_{10} and $PM_{2.5}$ to determine if any air quality objectives. Monitoring is currently carried out at Hallpark Road, Alloa which show recorded emissions to be below objectives (as at 2017) and consideration is being given to the monitoring of additional sites (Figure xx).

Over the years the records from the automatic and passive monitoring networks have shown concentrations below the air quality objectives, therefore Clackmannanshire has currently no Air Quality Management Areas (AQMAs). As the trend show concentrations below the air quality objectives there are no plans for declaring any AQMAs in the future.

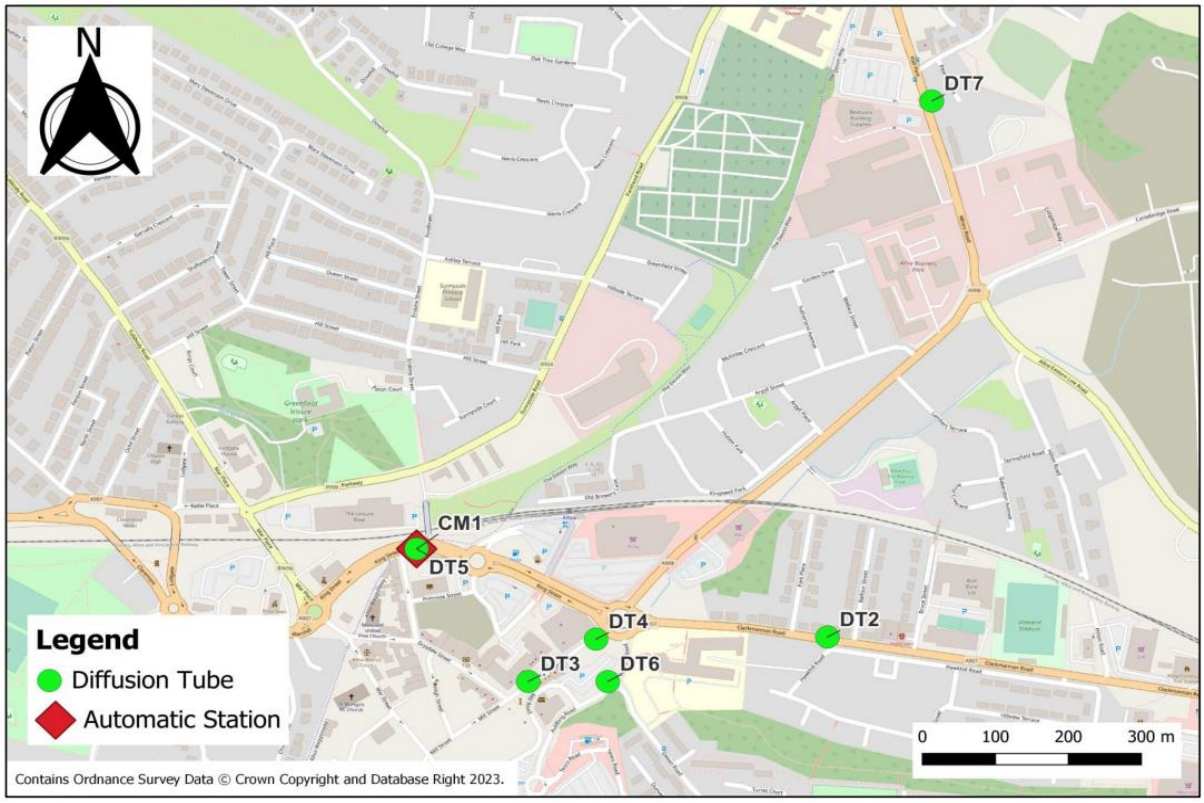


Figure 2 Location of Air Quality Monitoring Sites within Clackmannanshire

The Fidas analyser located at the CM1 monitoring station recorded an annual mean concentration of 11.2 µg/m^3 for PM_{10} and 6.4 µg/m^3 for $PM_{2.5}$. During 2022, the annual mean objective was therefore not exceeded for both PM10 and PM2.5. The daily mean objective for PM_{10} was exceeded on two occasions, with 24-hour mean concentrations of 55.8 µg/m^3 (22nd March 2022) and 65.1 µg/m3 (23rd March 2022) being recorded. However, these two exceedances are below the seven times per year that is permitted by the air quality objective, meaning that the PM10 daily mean objective was not exceeded in 2022.

Table 5 Annual mean PM_{10} and $PM_{2.5}$ concentration results from site CM1 (µg/m^3)

Pollutant	2018	2019	2020	2021	2022
PM_{10}	11.0	11.0	9.0	10.7	11.2
$PM_{2.5}$	6.0	6.0	5.0	5.6	6.4

[5] Data according to Clackmannanshire Air Quality Report 2023 https://www.clacks.gov.uk/document/6971.pdf

In 2022, the maximum NO_2 annual mean concentration was 16.1 µg/m^3, which was at the same site where the maximum NO_2concentration was recorded in 2021. However, the NO_2 annual mean was lower at every diffusion tube site in 2022 than that recorded in 2021, demonstrating continuing improvements in air quality in Clackmannanshire. During 2022, there was no exceedance of the NO_2 hourly objective (200 µg/m^3 not to be exceeded 18 times), as the maximum NO2 hourly concentration recorded at site CM1 was 81.1 µg/m^3. As no single passive diffusion tube recorded an annual mean NO_2 concentration greater than 60 µg/m^3, it is also unlikely that the hourly objective was exceeded at these locations during 2022. Table xx show the trend since 2018 for each site.

Table 6 Annual mean NO_2 monitoring results (µg/m^3)

Site ID	Site Type	Monitoring Type	2018	2019	2020	2021	2022
CM1	Roadside	Automatic	23.0	22.0	19.0	11.7	14.8
DT2	Roadside	Diffusion Tube	23.4	21.7	16.1	18.4	15.7
DT3	Kerbside	Diffusion Tube	26.3	25.2	15.6	17.7	15.6
DT4	Kerbside	Diffusion Tube	25.2	22.5	15.2	18.6	16.1
DT5	Kerbside	Diffusion Tube	21.9	18.3	13.0	15.8	12.9
DT6	Kerbside	Diffusion Tube	21.8	16.8	13.0	16.2	14.2
DT7	Kerbside	Diffusion Tube	-	20.6	11.8	14.5	12.0

The main source of air pollution in Clackmannanshire is traffic. Road traffic statistics from the Department for Transport show that traffic in Clackmannanshire continues to rise constantly. The decrease in 2020 is a result of the restrictions from Covid-19, which brought consequently a reduction of NO_2, PM_{10} and $PM_{2.5}$ concentration during 2020. While it is forecast that future emissions levels will remain within acceptable levels, consideration should be given to the air quality implications associated with increased road traffic and congestion.

In Clackmannanshire there is only industrial activity within Alloa with the majority of the county being rural in nature.

Clackmannanshire has three sites on the Scottish Pollutant Release Inventory which register their emissions to air at a level over reporting thresholds: Waste disposal services (methane, carbon dioxide, HFCs, sulphur hexafluoride and nitrous oxide) and a glass manufacturer (carbon dioxide), both in Riverside Industrial Estate in Alloa, and the Black Devon landfill site also in Alloa (methane).

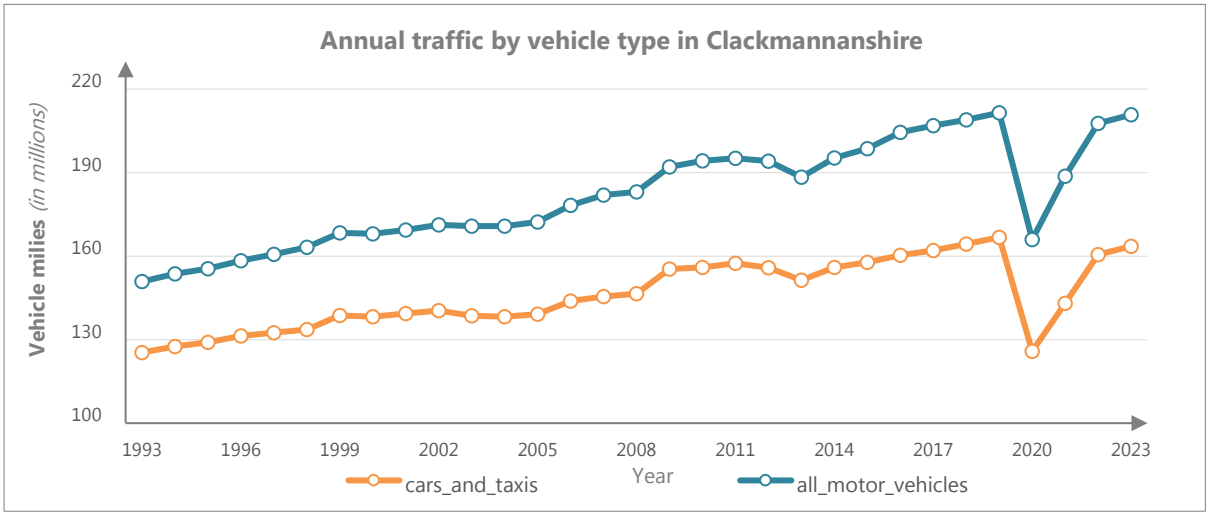


Figure 3 Annual traffic by vehicle type in Clackmannanshire between 1993 and 2023

f. Climatic factors

Clackmannanshire area overall area has a marine west coast with warm summer climate (Classification: Cfb)[6]. The city's yearly temperature is 8.44ºC and it is -2.31% lower than United Kingdom's averages. Clackmannanshire typically receives about 38.99 millimetres (of precipitation and has 105.36 rainy days (28.87% of te time) annually.

However, the characteristics can be diverse from wards to another:

Alloa - *Temperate maritime climate:* generally mild and wet - temperatures rarely falling below freezing

- Summers are generally warm and humid, with average daily highs of 17°C and occasional heat waves.
- Winters are relatively mild, with average daily lows of 4°C and moderate snowfall in some years.
- Spring and autumn are mild and wet, with average highs of 10°C and lows of 3°C.
- The wettest months in Allo are October and November, when rainfall averages around 109mm and 111mm.

Clackmannan - *Temperate oceanic climate:* mild climate year-round - warm summers - mild winters -consistent rainfall

- Summers are typically mild and sunny, with average temperatures ranging from 10.4°C to18.5°C.
- Winters are wet and mild, with temperatures ranging from 0.7°C to 7.2°C.
- Spring and autumn are generally mild and wet, with average highs of 13.2°C and lows of 6.1°C.
- Rainfall is fairly consistent throughout the year, with an average of 781 mm of precipitation annually.
- Snowfall is not common, but it does occur usually in January and February.

Alva -*Temperate climate:* generally mild year-round - temperatures rarely going below freezing or above 30°C

- Summers are usually dry and sunny, with some occasional thunderstorms peak, with average temperatures ranging from 15.7°C to 16.4°C.
- Winters can experience occasional snowfall, but it is usually light, with average temperatures of 3°C.
- Spring and autumn are mild and wet, with average highs 11.6°C and lows of 6.3°C.
- Rainfall is spread evenly throughout the year, with more frequent rain in the spring and fall months.

Sauchie - *Temperate climate:* mild winters - relatively warm summers

- Summers are relatively warm with average temperatures reaching 18°C.
- Winters are mild with temperatures typically range from 2°C during the day to -1°C during the night.
- Spring and autumn are mild and wet with average highs of 12°C and lows of 4°C.
- Rainfall is fairly consistent throughout the year, with an average of 60-70mm of precipitation per month.

Dollar - *Temperate climate:* generally mild temperatures - rarely falling below °C - rainfall distributed relatively evenly throughout the year

- Summers are generally quite warm, with average temperatures reaching into the mid-twenties.
- Winters can be quite cold, with temperatures ranging from 0°C to 5°C and occasional snowfall.
- Spring and autumn months have milder temperatures, with average temperatures ranging from 10°C to 15°C.
- Rainfall is generally evenly spread throughout the year, with an average of 600-800 mm of precipitation.

Tillicoultry - *Typical temperate climate:* fairly mild - pleasant year-round

- Summers are mild with temperatures average ranging from 16°C to 20°C.
- Winters are usually cold, with average temperatures reaching with lows of 1°C.
- Spring and autumn months have milder temperatures, with average temperatures ranging from 5°C to 13°C.

[6] Data according to https://weatherandclimate.com/united-kingdom/clackmannanshire

Observation data from Met Office shows an increasing trend in the average, maximum and minimum temperatures from the industrial times till nowadays, outlining an increase around 0.59°C. Graphs shown in *Figure xx, xx* and *xx* show detailed trends for Clackmannan, Alloa, Alva, Tillicultry and Dollar. Moreover, each year the area and Scotland have been experiencing more extreme weather events. Between April 2023 and March 2024 our Emergency Resilience Team in Clackmannanshire Council have received:

- 52 Flood Alerts;
- 21 Yellow Weather warnings;
- 7 amber Weather warnings;
- 11 named storm warnings since September 2023.

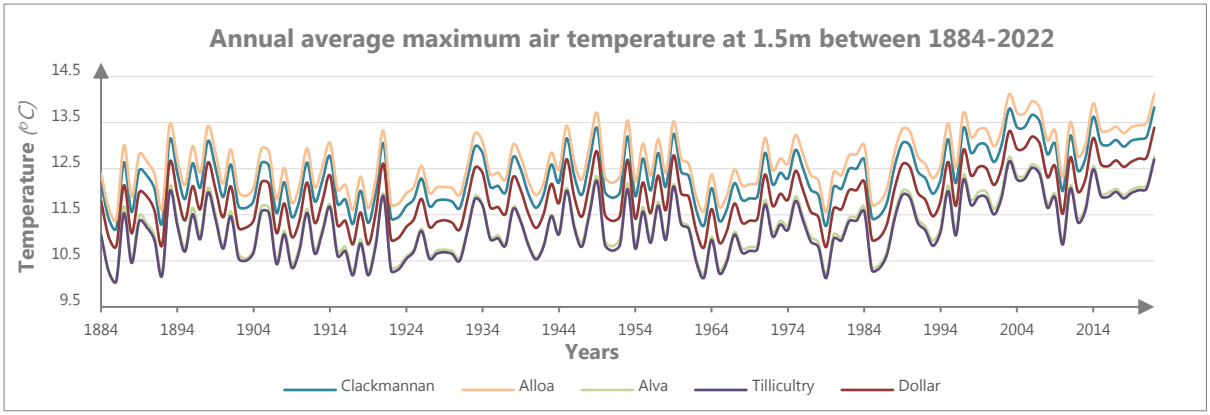


Figure 8 Annual average maximum air temperature at 1.5m between 1884-2022 (Met Office)

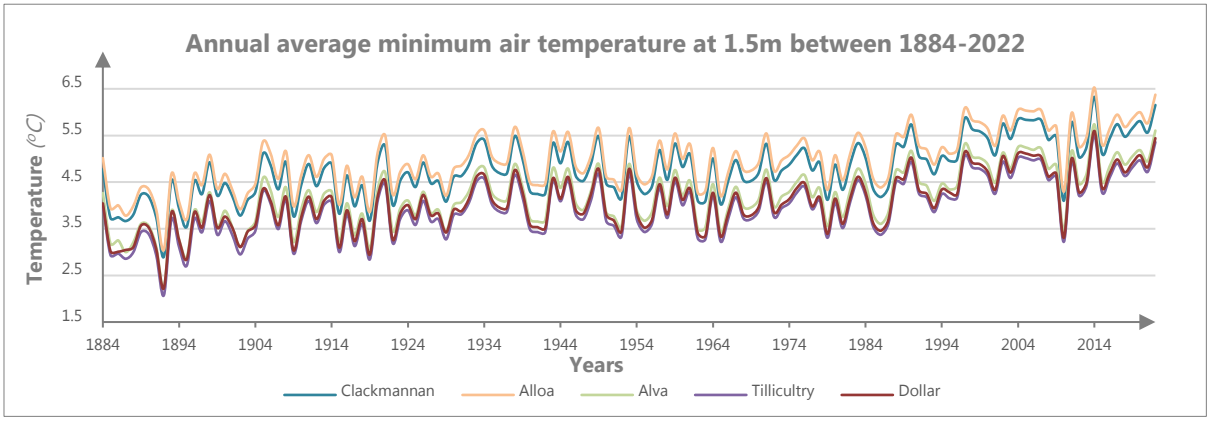


Figure 4 Annual average minimum air temperature at 1.5m between 1884-2022 (Met Office)

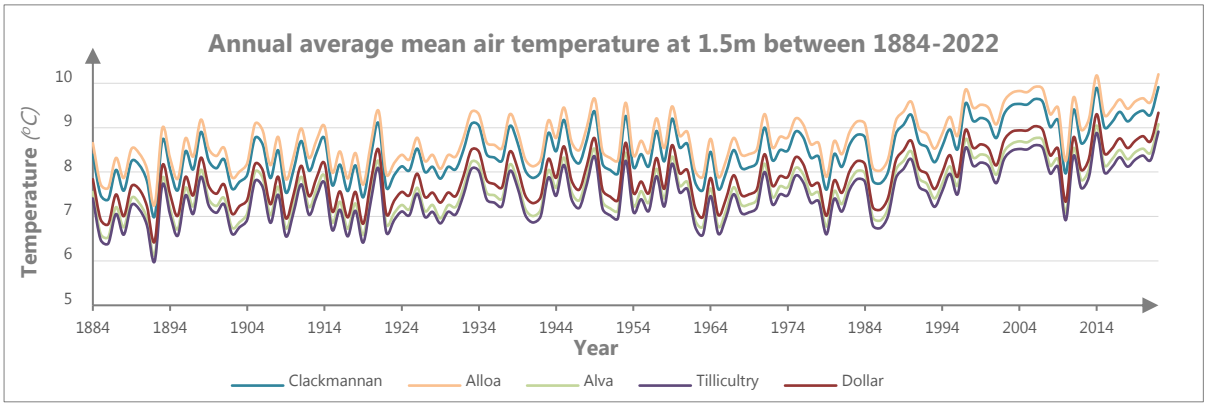


Figure 10 Annual average mean air temperature at 1.5m between 1884-2022 (Met Office)

UK Climate Projections predicts that climate change impacts will lead to increased of the average, maximum and minimum temperatures, a decrease in the length of winter cold spells and occurrence of air and ground frost, an upward trend in the days of heavy rain each year and in the average rainfall intensity. If global average temperatures increase 2°C above pre-industrial levels, the hottest summer day could be about 30.9°C and the warmest winter day could be about 15.6°C. If global temperatures rise by 4°C, the hottest summer day could be about 34.3°C and the warmest winter day could be about 16.5°C[7]. In addition to the higher addition of the rainfall, apart from flooding events, the area is also vulnerable to the global and UK issues like sea level rise.

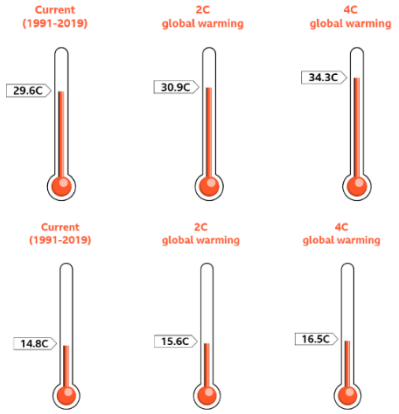


Figure 5 Winter and summer projections for Clackmannanshire (Met Office & BBC)

Clackmannanshire Council is aiming to meet the current national reductions targets for carbon emissions by achieving net zero in 2040 at latest for its own operations and in 2045 at latest for the wide area. The council has reported its own emissions a requirement of Public Bodies Climate Change Duties since 2013, however till 2021 the overall emissions did not include some significant areas of the Council's carbon footprint such as waste. 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. Below are Clackmannanshire's emissions for the Council's own activities and their corresponding financial year:

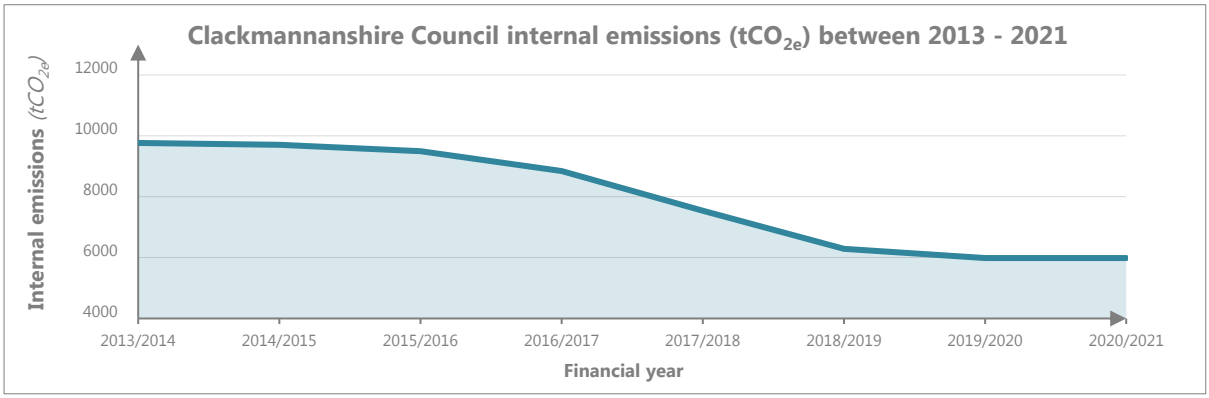


Figure 12 Clackmannanshire Council internal emissions (tCO2e) between 2013 – 2021 (PBCCD Report)

The commitment to reduce carbon emissions is based on the 2021/2022-year carbon footprint as it includes waste. The Climate Emergency Board has approved the interim targets to reduce emissions based on the graph below:

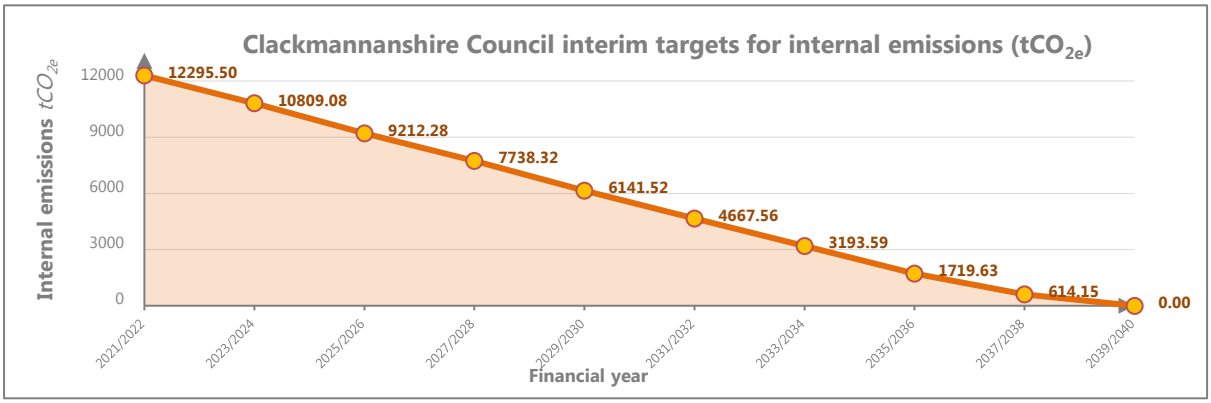


Figure 63 Clackmannanshire Council interim targets for internal emissions (tCO2e) till 2040 (CEB, 2021)

[7] Data according to https://www.bbc.co.uk/news/resources/idt-d6338d9f-8789-4bc2-b6d7-3691c0e7d138

Figures released by the Department of Energy and Climate Change (DECC) show Clackmannanshire's per capita greenhouse gas emissions to be higher than the Scottish average: this is mostly because of high emissions from industrial and commercial sources; per-capita emissions from domestic and transport sources are below the Scottish average. Clackmannanshire's external emissions by sector are summarised in the *Table 7* below[8]. 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.

Table 7 Estimated territorial greenhouse gas emissions by sector in Clackmannanshire 2005-2021 (kt CO_2e)

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

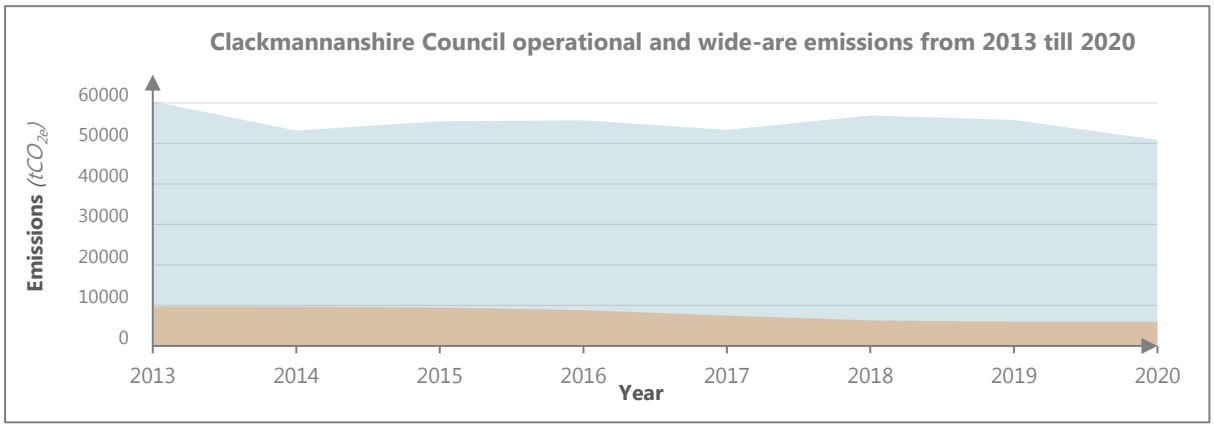


Figure 7 Comparison between Clackmannanshire Council operational and wide-are emissions between 2013- 2020

[8] Data published by the Department for Business, Energy & Industrial Strategy provides CO_2 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-greenhousegas-emissions-national-statistics-2005-to-2020

g. Material assets

Waste and Resource Management Infrastructure

Significant progress has been made in recent years about waste management in Clackmannanshire. Clackmannanshire Council's Zero Waste Strategy 2012-22 aims to ensure that the Council meets the targets set by the Zero Waste Plan and the European Council Landfill Directive 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.

Since 2013 the Council has increased the recycling rates, which is above the average recycling rate for Councils in Scotland[9]. However, still a significant proportion of waste was sent to landfill, making this a quite important mission to find opportunities to reduce emissions.

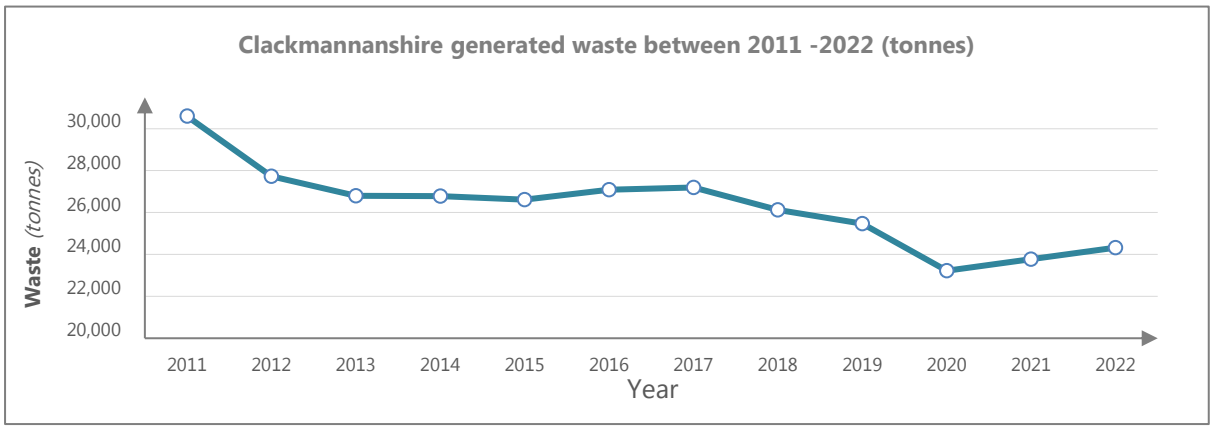


Figure 8 Clackmannanshire household waste trend between 2011 and 2022 (SEPA)

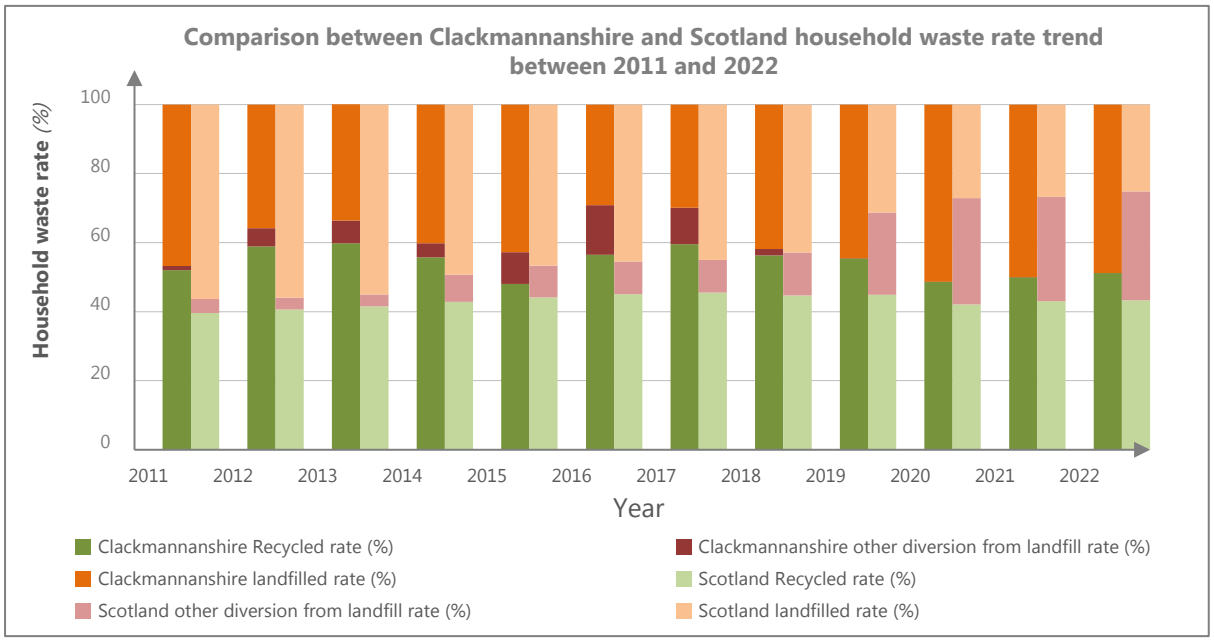


Figure 9 Comparison between Clackmannanshire and Scotland household waste rate trend between 2011 and 2022 (SEPA)

[9] Data according to https://www.sepa.org.uk/environment/waste/waste-data/waste-data-reporting/household-waste-data/

Clackmannanshire contains a range of minerals, including sand & gravel, silica, hard rock resources and other secondary aggregates as described in The Scottish Government (2008) A Guide to Minerals Information in the Central Belt of Scotland. Shallow coal reserves that may be suitable for opencast working are found across much of Clackmannanshire. There are no landfill sites within the Clackmannanshire area licensed to accept non-inert waste. A major new facility has planning permission at Muirpark, Tullibody which will provide sufficient inert capacity to serve the area for a number of years. A waste transfer facility is located in Stirling which bulks waste for transport to the landfill site at Polmont, Falkirk.

h. Cultural heritage

Clackmannanshire is a region teeming with cultural heritage assets that serve as enduring symbols of its rich history and vibrant identity. From ancient landmarks to contemporary expressions of creativity, these assets encompass a diverse range of tangible and intangible treasures that contribute to the fabric of Clackmannanshire's cultural landscape. One of the most prominent cultural heritage assets in Clackmannanshire is its architectural heritage.

Listed Buildings: In the area there are around 297 listed buildings.

Scheduled Monuments: There are 13 Scheduled Monuments within Clackmannanshire including a wealth of historic buildings, castles, and monuments that bear witness to centuries of human endeavour. Iconic landmarks such as Clackmannan Tower, Alloa Tower, and Castle Campbell stand as poignant reminders of the area's medieval past, while charming villages and towns showcase a wealth of vernacular architecture dating back centuries.

Historic gardens and designed landscapes: Historic Environment Scotland maintain the Inventory of Gardens and Designed Landscapes to record assets of national, regional and local importance since in 1987. They are valuable in terms of contribution to scenery, history, artistic design, wildlife, horticulture or tourism. There are 2 sites designated within the Council's area at Castle Campbell and Cowden Japanese-Style Garden.

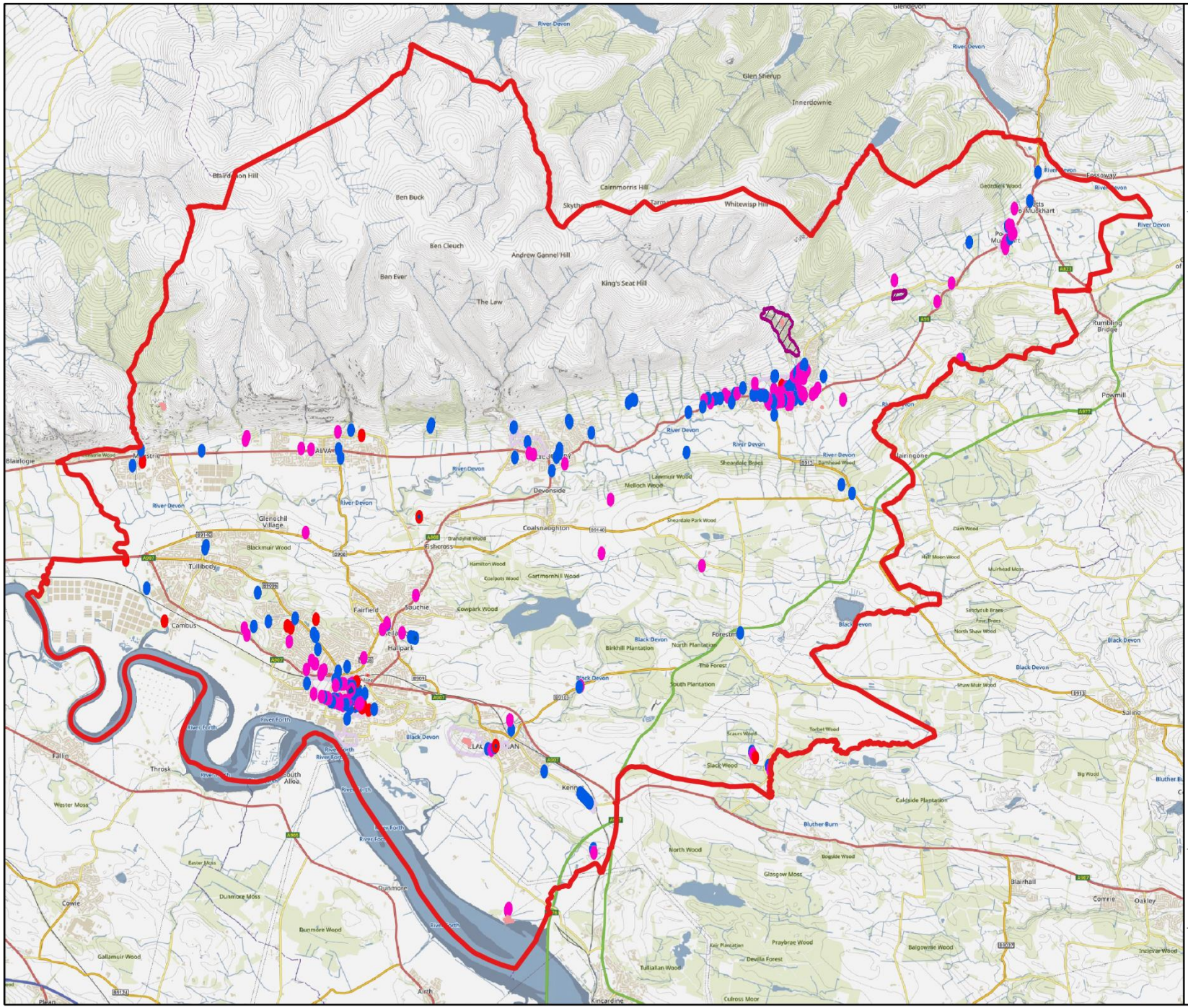
Conservation areas: There are 7 conservation areas in Clackmannanshire.

The are 15 buildings on the Building at Risk Register and their condition and risk category are detailed in *Table 8*. The In addition, non-designated sites contribute to the wider cultural heritage resource. These resources contribute positively to the landscape and townscape of the area and provide visible connections to the industrial heritage of the area.

Table 8 List of buildings in Clackmannanshire area on the Building at Risk Register[10]

Name of Building	Listing Category	Condition	Category of Risk
Carsebridge Distillery Offices		Poor	Moderate
Carsebridge House Walled Garden & Garden House	B	Poor	Moderate
Carsebridge House Napoleon Pillar	B	Good	Low
Carsebridge House	B	Very Poor	High
Greenfield House	B	Poor	Moderate
The Railway Tavern	C	Fair	Moderate
Kilbagie House	B	Poor	Moderate
Kilbagie Mill House	C	Fair	Low
Moncrieff House	C	Fair	Low
Muckhart Limekiln	B	Poor	Moderate
Linn Mill Footbridge		Very Poor	High
Forestmill Weir	B	Poor	Moderate
Hope Bakers (Former)	B	Fair	Moderate
New Mills Doocot	B	Ruinous	Moderate
Town Hall Tower (Former)	B	Fair	Low

[10] Data according to Building at Risk Register: https://www.buildingsatrisk.org.uk/


N
Culture heritage sites and asstes in Clackmannanshire Council
Legend
Scheduled monuments
Listed Buildings boundary
Listed Building by category
A
B
C
Gardens and Designed Landscpaes
Conservation Areas
© Base map and data from OpenStreetMap contributors, tiles by OpenStreetMap Foundation
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i. Landscape

Clackmannanshire is distinguished by the contrast between the high ground of the Ochil Hills and the flat cars elands of the Devon and Forth Valleys. The area Clackmannanshire is broadly characterised as rural in terms of landscape and settlement pattern, but with the bulk of the population, employment and development activity concentrated in a small number of the larger urban communities in the Core Area.

Agriculture is the most extensive land use within the area, and it is very diverse, reflecting the area's varied topography, climate and soils. Arable land is the most common type, while the remainder of the agricultural land consists of rough grassland, and improved grassland. Areas of arable land generally correspond with the fertile soils of the Carse of Forth. Rough grassland dominates the hill land of the Ochills, with small percentages of coniferous and broadleaved woodlands. The district has a high percentage of urban and rural development compared to the national averages. The principal areas of Green Belt in Clackmannanshire are between Alloa and Clackmannan, Tullibody and along the Hillfoots. Forestry is the other major land use.

Table 9 Land cover distribution in Clackmannanshire in 2020[11]

No.	Land cover class	Percentage of cover
1.	Inland surface standing and running waters	2.92%
2.	Raised and blanket bogs	3.15%
3.	Valley mires, poor fens and transition mires	0.14%
4.	Dry grasslands	16.01%
5.	Mesic grasslands	20.28%
6.	Seasonally wet and wet grasslands	10.17%
7.	Alpine and subalpine grasslands	1.47%
8.	Woodland fringes and clearings and tall forb stands	0.96%
9.	Arctic, alpine and subalpine scrub	0.01%
10.	Temperate and mediterranean-montane scrub	1.01%
11.	Temperate shrub heathland	3.71%
12	Riverine and fen scrubs	0.35%
13.	Broadleaved deciduous woodland	13.19%
14.	Coniferous woodland	2.48%
15.	Mixed deciduous and coniferous woodland	0.45%
16.	Young woodland	0.48%
17.	Cliffs and rock pavements	0.01%
18.	Arable land	13.86%
19.	Build-up	5.05%
20.	Bare field	4.32%

Local Landscape Areas (LLAs) are designated to safeguard and enhance the character and quality of a landscape which is valued locally or regionally. Clackmannanshire has two Local Landscape Areas (LLAs):

- the Forest, which covers the predominantly wooded lowland area east of Alloa and north of Clackmannan,
- the Ochil, which covers the Ochil Hills.

[11] Data according to Scotland Habitat and Land Cover Map – 2020: https://www.data.gov.uk/dataset/911c87c4-a0d3-4bb8-9089-f7657980113e/scotland-habitat-and-land-cover-map-2020

These LLAs cover a surface of 7,260.5 ha, which consists of 44.29 % of the council's administrative area. Ochil has an extension of 6,130.22 ha, why Forest has an extension of 1,130.28 ha.

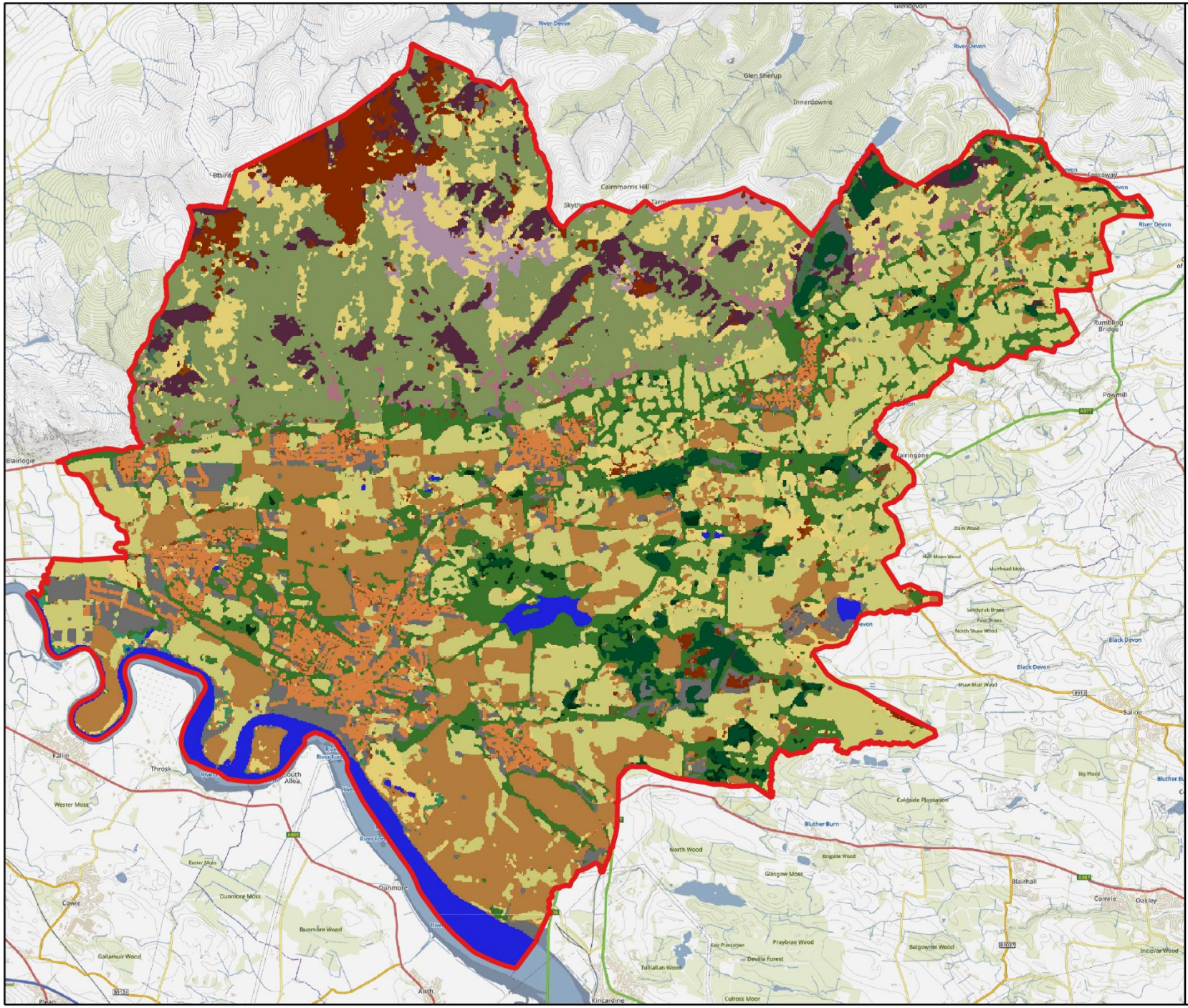
Whilst the Local Plan policies seek to protect designated landscapes such as LLAs, the wider landscape heritage is also given protection from development that may affect its overall quality. Landscape Character Assessment (LCA) has been undertaken for the whole of Clackmannanshire. This identifies the different landscape types in the area, provides information about key landscape features.

Landscape Character Assessments have identified thirteen landscape character types within the study area: valleys and floodplains of the lowlands; high, rolling rounded hills; highland straths; highland and island glens; inland lochs; urban; lowland hill margins and fringes; lowland hills; lowland river valleys; undulating farmlands, hills and valleys; lowland valley fringes; upland hills and moorlands; and fragmentary character types. According to the LCA, the landscape of Clackmannanshire can be divided into three Landscape Types: Hills, River Valleys and Valley Fringes.

1) The Ochils fall within the type termed Hills and form the highest ground within the Lowlands of Central Region. The dominant feature of the hills is the striking contrast between the abrupt, extremely steep southern scarp, and the broad, level plain of the lower Devon River below. The streams of the upper plateau slopes converge and carve into the south-facing perimeter of the hills, plunging through steep-sided glens to reach the valley floor.

2) The River Valleys consist of three separate Character Areas, ranging in nature from the broad agricultural flatlands of the Carse of Forth to the narrow gorge-like Middle Devon.

3) The third Landscape Type; Valley Fringes, includes the transitional landscapes of generally subdued relief, which link together the adjoining Forth and Devon valley



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Land cover distribution in Clackmannanshire Council Area in 2020

Legend

- A2: Littoral sediment (predominantly saltmarsh
- B1: Coastal dunes and sandy shores
- B2: Coastal shingle
- B3: Rock cliffs, ledges and shores
- C: Surface standing and running waters
- D1: Raised and blanket bogs
- D2: Valley mires, poor fens and transition mires
- D4: Base-rich fens and calcareous spring mires
- E1: Dry grasslands
- E2: Mesic grassland
- E3: Seasonally wet and wet grasslands
- E4: Alpine and subalpine grasslands
- E5: Woodland fringes and clearings and tall forb stands
- F2: Arctic, alpine and subalpine scrub
- F3: Temperate and mediterranean-montane scrub
- F4: Temperate shrub heathland
- F9: Riverine and fen scrubs
- G1: Broadleaved deciduous woodland
- G3: Coniferous woodland
- G3.4: Scots pine woodland
- G3.F: Highly artificial coniferous plantations
- G4: Mixed deciduous and coniferous woodland
- G5: Lines of trees, small anthropogenic woodlands, early-stage woodland and coppice
- H2: Screes
- H3: Inland cliffs, rock pavements and outcrops
- I1: Arable land and market gardens
- J: Build-up
- O: Bare field
- OW: Windthrow

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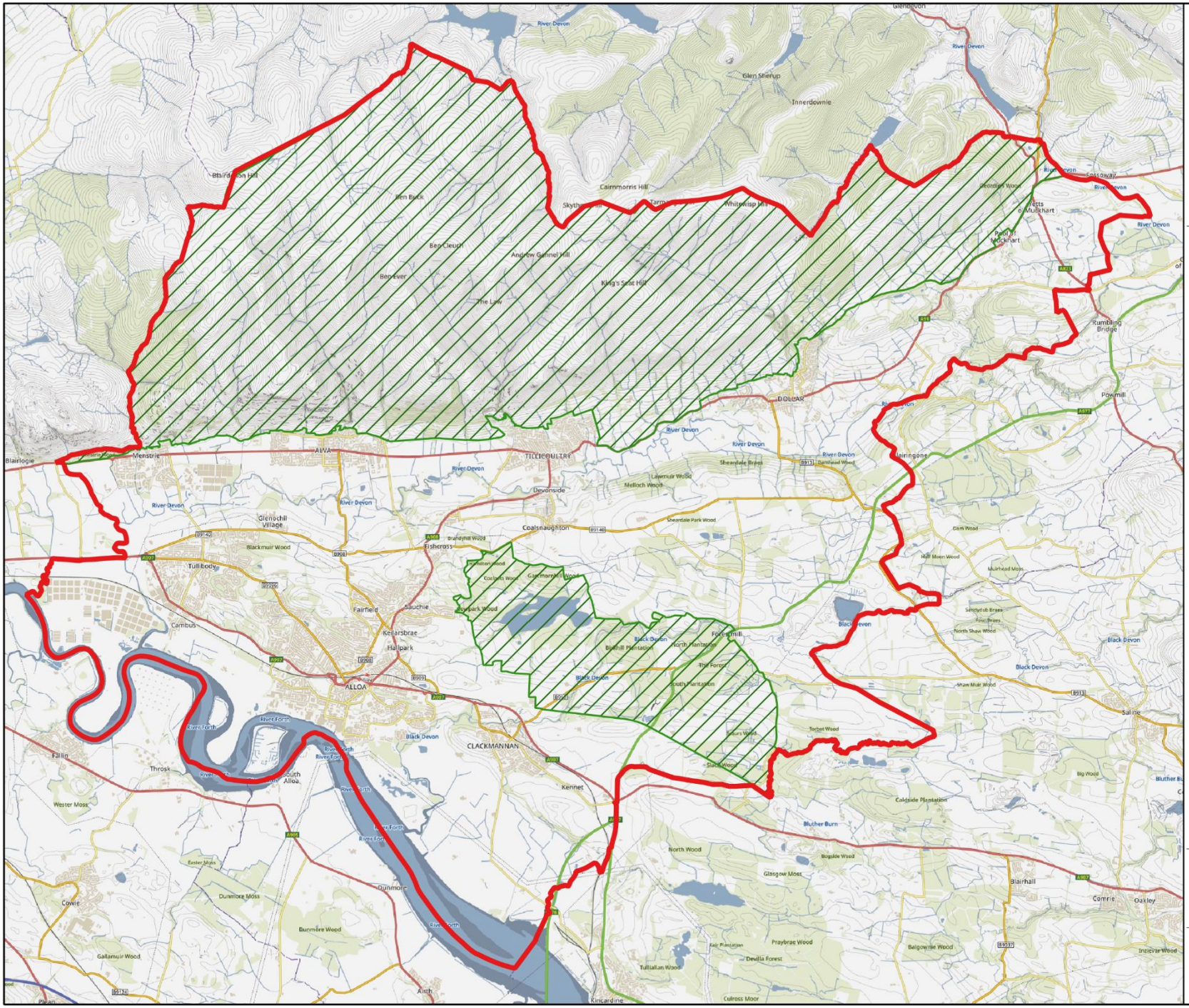
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Local Landscape Areas in Clackmannanshire Council Area
Legend
Local Landscape Areas
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ANNEX D: Assessment of CC Strategy Alternatives

Symbol	✓	✗	O	?
Assessment	Positive Environmental Effect	Negative Environmental Effect	No Environmental Effect	Uncertain Environmental Effect

Option 1: Do Nothing

In the 'do nothing' approach, the opportunity for collaboration and transparency around actions from partner organisations, as well as accountability and measurement of progress is not conducted in a systematic manner. Carbon emissions and climate adaptation actions would not be strategically managed and potential benefits would be lost.

SEA Topic	SEA Objective	Assessment Question (does the Climate Change Strategy…)	Score	Comment
Biodiversity, flora & fauna	*Protect, conserve and enhance biodiversity, flora and fauna and habitat networks*	• have the potential to have a significant impact any international, national or locally designated site? • protect the diversity of species and habitats? • promote restoration opportunities for woodlands? • avoid habitat fragmentation and increase green network connectivity? • have the potential to have a significant impact on and improve native wider biodiversity? • support a healthier natural heritage ecosystem?	✗	This option is likely to result in moderate, long-term negative impacts on biodiversity, including greenspace, designated sites, protected habitats, and species, due to climate change influence. The benefits and opportunities that biodiversity and habitats play on local climate change mitigation and adaptation may be missed to without coordinated or aligned actions.
Population & human health	*Promote human health & well-being, social inclusion, economic growth, access to a rich and diverse local environment by reducing inequalities*	• promote opportunities to improve personal and community resilience? • support opportunities for social equality and cohesion? • improve opportunities for healthier lifestyles? • safeguard, enhance and promote green infrastructure, green networks, and opportunities for active travel?	✗/O	This option is likely to have negative effects in human health due to a diminished motivation to reduce carbon emissions and enhance resilience against climate change. Vulnerable groups and communities in Clackmannanshire may bear the brunt of consequences like extreme weather events, flooding, and compromised air quality. There are no likely chances to have a negative effect on the population while the provision of open space would have no environmental effect.
Soil	*Protect valuable land resources, promote soil restoration and enhance the soil resource function /quality where appropriate*	• safeguard soil quality, quantity and function? • avoid adverse impact on valuable soil resources such as carbon rich soils? • reduce the risk of erosion, landslip and landslide? • promote opportunities for soil restoration such as peat restoration to store carbon?	O/✗	This option is likely to have a neutral impact on soil due to existing policies and regulations which control the release of substances during construction, remediation of contaminated land and the production and disposal of waste. However, the benefits that carbon rich soils play in storing carbon and climate change mitigation may be missed to without coordinated or aligned actions.
Water	*Protect, prevent deterioration and, where appropriate, enhance the water environment*	• protect and enhance the overall ecological status of waterbodies? • avoid adverse effects on the coastal environment? • promote water conservation and purification? • promote sustainable water use? • avoid or reduce flood risk? • promote sustainable flood management?	✗	This option is likely to result on negative impacts water resources due to lack of awareness and community resilience to extreme weather events and flooding. Ad- hoc development of plans and policies such as land use change and renewable technologies could have greater negative impacts on watercourses and the coastline.

SEA Topic	SEA Objective	Assessment Question (does the Climate Change Strategy…)	Score	Comment
Air	*Limit or reduce the emissions of air-borne pollutants to prevent deterioration of air quality*	• impact air quality negatively? • increase congestion and vehicle traffic? • support measures to reduce levels of air pollution? • encourage and promote mobility and active travel?	O/✘	This option is likely to have no effect on air due to national strategies /targets that monitor/control the release of particulate matter through construction and traffic. However, the benefits that low carbon transport modes bring in improving the air quality might be lost and result on moderately negative, short- to- medium term impact on air.
Climatic factors	*Increase resilience by contributing to mitigation of and adaptation to climate change*	• limit emissions of greenhouse gases? • have the potential to alleviate risk of flooding and erosion? • increase the resilience of people, material assets and the natural environment to the impacts of climate change?	✘	This option is likely to have negative impacts on climatic factors in the medium to long term due to fragmented climate actions within Clackmannanshire. The benefits and opportunities that create synergies between interventions and scale up activities to meet emission reduction targets be missed to without coordinated or partnership actions.
Material assets	*Minimise waste and energy consumption to increase resource efficiency and promote use of renewable energy*	• promote sustainable use, including energy, waste, water, and minerals? • contribute to shifting to clean energy resources / renewables and use of district heating? • meet the targets of the Zero Waste Plan and apply the waste hierarchy (reduce, reuse, repair, recycle)?	✘/O	This option is likely to have negative impacts on material assets due climate impacts such as damage and degradation of the built environment and infrastructure, including property will increase. Continued reliance on landfill for waste will increase. However, there are no likely chances to have any effect on the material assets due to other national strategies and local policies.
Cultural heritage	*Protect, where appropriate also enhance culture heritage and historic environment to preserve Clackmannanshire identity*	• reduce the effects of climate change on the historic environment and its settings? • enhance or restore historic features and their settings?	O/✘	This option is unlikely to have any impact on the culture heritage under the status quo scenario of the conservation and enhancement of historic buildings, archaeological sites, and conservation areas. However, without adaptation actions certain designated sites and their surroundings could be vulnerable to the effects of climate change, such as flooding and degradation.
Landscape	*Protect and enhance the quality of landscape and publicly accessible open space*	• cause changes to the landscape environment that are at variance with the character of the area? • improve and enhance the quality and amount of accessible open space within the area?	✘	This option is expected to negatively affect the surrounding landscape due to renewable technology projects developed, inefficient land use, inadequate design and without a collaborative approach.

Option 2: Do Minimum

In the 'do minimum' approach, the Council would produce a limited plan covering only a selection of its main activities. These would be delivered, and results monitored. However, the scale of carbon reductions and climate adaptation measures would be insufficient. There would be a minimum management of environmental impacts and potential benefits would be lost.

SEA Topic	SEA Objective	Assessment Question (does the Climate Change Strategy…)	Score	Comment
Biodiversity, flora & fauna	*Protect, conserve and enhance biodiversity, flora and fauna and habitat networks*	• have the potential to have a significant impact any international, national or locally designated site? • protect the diversity of species and habitats? • promote restoration opportunities for woodlands? • avoid habitat fragmentation and increase green network connectivity? • have the potential to have a significant impact on and improve native wider biodiversity? • support a healthier natural heritage ecosystem?	✓/✗	This option is likely to have positive effect on biodiversity and habitats as individual stakeholders' strategies and management plans can tackle the ecological emergency by conserving and protecting native biodiversity. However, this option does not consider the area-wide cumulative positive impacts and synergies that the CC Strategy would provide and might result in overlapping initiatives or not coordinated actions which would lose momentum to maximise the benefits.
Population & human health	*Promote human health & well-being, social inclusion, economic growth, access to a rich and diverse local environment by reducing inequalities*	• promote opportunities to improve personal and community resilience? • support opportunities for social equality and cohesion? • improve opportunities for healthier lifestyles? • safeguard, enhance and promote green infrastructure, green networks and opportunities for active travel?	✓/O/✗	This option is unlikely to have an overall moderately positive effect on population and there would be a neutral effect on the provision of open space. There could be a possible negative effect on human health as, there vulnerable groups and communities in Clackmannanshire may bear the brunt of consequences like extreme weather events, flooding, and compromised air quality.
Soil	*Protect valuable land resources, promote soil restoration and enhance the soil resource function /quality where appropriate*	• safeguard soil quality, quantity and function? • avoid adverse impact on valuable soil resources such as carbon rich soils? • reduce the risk of erosion, landslip and landslide? • promote opportunities for soil restoration such as peat restoration to store carbon?	O	This option is likely to have a neutral impact on soil due to existing policies and regulations which control the release of substances during construction, remediation of contaminated land and the production and disposal of waste. However, the benefits that carbon rich soils play in storing carbon and climate change mitigation would be minimal.
Water	*Protect, prevent deterioration and, where appropriate, enhance the water environment*	• protect and enhance the overall ecological status of waterbodies? • avoid adverse effects on the coastal environment? • promote water conservation and purification? • promote sustainable water use? • avoid or reduce flood risk? • promote sustainable flood management?	✓/✗	This option could result in positive impact on water resources through individual stakeholders and projects lowering carbon emissions and adapting to climate change. However, individual organisations may implement projects like renewable energy projects that have the potential to negatively affect water. This option does not consider the area-wide cumulative positive impacts and synergies that the CC Strategy would provide and might result in overlapping initiatives or not coordinated actions which would lose momentum to maximise the benefits.
Air	*Limit or reduce the emissions of air-borne pollutants to prevent deterioration of air quality*	• impact air quality negatively? • increase congestion and vehicle traffic? • support measures to reduce levels of air pollution? • encourage and promote mobility and active travel?	✓/O	This option is likely to have a positive or neutral impact on air whereby individual stakeholders promote projects to reduce emissions and improve air quality. However, this option does not consider the area-wide cumulative positive impacts and synergies that the CC Strategy would provide and might result in overlapping initiatives or not coordinated actions which would lose momentum to maximise the benefits.

SEA Topic	SEA Objective	Assessment Question (does the Climate Change Strategy…)	Score	Comment
Climatic factors	*Increase resilience by contributing to mitigation of and adaptation to climate change*	• limit emissions of greenhouse gases? • have the potential to alleviate risk of flooding and erosion? • increase the resilience of people, material assets and the natural environment to the impacts of climate change?	✓	This option is likely to have a positive effect on climatic factors as individual stakeholder plans are enacted, leading to reduced energy consumption, carbon emissions, and greater utilisation of renewable energy sources. However, this approach could be fragmented, missing the chance to maximise synergies between interventions and scale up activities necessary to meet emission reduction targets.
Material assets	*Minimise waste and energy consumption to increase resource efficiency and promote use of renewable energy*	• promote sustainable use, including energy, waste, water, and minerals? • contribute in shifting to clean energy resources / renewables and use of district heating • meet the targets of the Zero Waste Plan and apply the waste hierarchy (reduce, reuse, repair, recycle)?	✓/o	This option is likely to have a positive effect on material assets due to individual stakeholders' strategies and action plans such as sustainable transport, waste management and flood prevention. However, this approach could be fragmented, missing the chance to maximise synergies between interventions and scale up activities such as waste reduction initiatives.
Cultural heritage	*Protect, where appropriate also enhance culture heritage and historic environment to preserve Clackmannanshire identity*	• reduce the effects of climate change on the historic environment and its settings? • enhance or restore historic features and their settings?	o/x	This option is likely to have neutral effects on cultural heritage as carbon reduction/low emission initiatives of individual organisations would be unlikely to influence the conservation and enhancement of historic buildings, archaeological sites and conservation sites. However, the implementation of some projects on an ad-hoc basis such as renewable technologies may have a negative impact on historic features and their settings an inefficient use of land and poor design.
Landscape	*Protect and enhance the quality of landscape and publicly accessible open space*	• cause changes to the landscape environment that are at variance with the character of the area? • improve and enhance the quality and amount of accessible open space within the area?	?	This option is likely to have uncertain effects on the surrounding landscape due to renewable technology projects developed, inefficient land use, inadequate design and without a collaborative approach and the character of the area may change over time to adapt to the effects of a changing climate.

Option 3: Do Optimum

Under the 'do optimum' approach, the Climate Change Strategy will be developed to realise the greatest environment benefits due to the strategic cooperative and partnership approach to the development of the plan. The Climate Change Strategy will outline the approach Clackmannanshire intends to meet its commitments on reducing energy use and carbon emissions. The effects are likely to be positive if the strategy is implemented.

SEA Topic	SEA Objective	Assessment Question (does the Climate Change Strategy…)	Score	Comment/Mitigation
Biodiversity, flora & fauna	*Protect, conserve and enhance biodiversity, flora and fauna and habitat networks*	• have the potential to have a significant impact any international, national or locally designated site? • protect the diversity of species and habitats? • promote restoration opportunities for woodlands? • avoid habitat fragmentation and increase green network connectivity? • have the potential to have a significant impact on and improve native wider biodiversity? • support a healthier natural heritage ecosystem?	✓/✗	This option is likely to have a significant positive effect on biodiversity and habitats, as the CC Strategy aims to acknowledge biodiversity and habitats such as native woodland as important local contributors to climate mitigation and adaptation and as a result it will tackle the ecological emergency alongside the climate emergency by enhancing local biodiversity assets. All the benefits will be enhanced by adopting a wide approach and collaboration. However, some actions, like changes in land use or renewable energy projects, may have negative impacts such as habitat loss or disturbance. Early and thorough assessments are necessary to mitigate these risks.
Population & human health	*Promote human health & well-being, social inclusion, economic growth, access to a rich and diverse local environment by reducing inequalities*	• promote opportunities to improve personal and community resilience? • support opportunities for social equality and cohesion? • improve opportunities for healthier lifestyles? • safeguard, enhance and promote green infrastructure, green networks and opportunities for active travel?	✓	This option is likely to have long-term positive effects on population as the CC Strategy aims to promote climate justice approach by providing solutions to shift to sustainable low carbon economy energy system, (e.g. helping to tackle fuel poverty), protect groups that are more vulnerable to climate change impacts and in deliver a development pattern centred on environmental sustainability to support economic growth, employability, skills development and community wealth building. Long-term improvements to human health are expected through reducing harmful emissions to air, promote healthy and local eating, increasing active travel and creating more usable open/green spaces.
Soil	*Protect valuable land resources, promote soil restoration and enhance the soil resource function /quality where appropriate*	• safeguard soil quality, quantity and function? • avoid adverse impact on valuable soil resources such as carbon rich soils? • reduce the risk of erosion, landslip and landslide? • promote opportunities for soil restoration such as peat restoration to store carbon?	✓/✗	This option is likely to have a positive impact on soil due to coordinated/aligned actions with high environmental/sustainability standards of different stakeholders, the benefits that carbon rich soils play in storing carbon and climate change mitigation are enhanced. However, there is possibility of temporarily or permanent disturbance to soils during development activity of climate adaptation actions such as flood management and would require early and detailed assessment as part of the planning process.
Water	*Protect, prevent deterioration and, where appropriate, enhance the water environment*	• protect and enhance the overall ecological status of waterbodies? • avoid adverse effects on the coastal environment? • promote water conservation and purification? • promote sustainable water use? • avoid or reduce flood risk? • promote sustainable flood management?	✓/✗	This option is likely to result on both positive and negative impacts water resources. The CC Strategy will raise the awareness and community resilience to extreme weather events and flooding. However, developments of certain technologies may have temporary to longer term impacts on water and groundwater quality, so detailed impact assessments for any such projects would be required.

SEA Topic	SEA Objective	Assessment Question (does the Climate Change Strategy…)	Score	Comment/Mitigation
Air	*Limit or reduce the emissions of air-borne pollutants to prevent deterioration of air quality*	• impact air quality negatively? • increase congestion and vehicle traffic? • support measures to reduce levels of air pollution? • encourage and promote mobility and active travel?	✓/✗	This option is likely to have a significantly positive impact on air quality as the CC Strategy would provide a joined-up approach that would ensure the effective co-ordination of climate change and air quality actions to deliver co-benefits. Certain actions, such as renewable energy adoption (which can impact air quality positively or negatively) and the shift to low-carbon fuels (resulting in reduced particulate emissions), may play a significant role in this improvement.
Climatic factors	*Increase resilience by contributing to mitigation of and adaptation to climate change*	• limit emissions of greenhouse gases? • have the potential to alleviate risk of flooding and erosion? • increase the resilience of people, material assets and the natural environment to the impacts of climate change?	✓	This option is likely to have a mayor positive effect on climatic factors as the CC Strategy ensure synergies between interventions and scale up activity to both harness the benefits of, whilst also offsetting the negative effects of, climatic change.
Material assets	*Minimise waste and energy consumption to increase resource efficiency and promote use of renewable energy*	• promote sustainable use, including energy, waste, water, and minerals? • contribute to shifting to clean energy resources / renewables and use of district heating • meet the targets of the Zero Waste Plan and apply the waste hierarchy (reduce, reuse, repair, recycle)?	✓	This option is likely to have a positive effect on material assets through a cohesive approach that encourages sustainable resource utilization, construction practices, circular economy opportunities and promotes the development of active travel networks, low-carbon transportation, and the adoption of renewable energy and heating technologies.
Cultural heritage	*Protect, where appropriate also enhance culture heritage and historic environment to preserve Clackmannanshire identity*	• reduce the effects of climate change on the historic environment and its settings? • enhance or restore historic features and their settings?	✓/?	This option is likely to have a positive effect on cultural heritage by improving the resilience of historic buildings to the impacts of climate change. However, development of projects to improve the energy efficiency can potentially impact historic features, affecting local identity or the setting of important cultural heritage, which can be avoided by appropriate detailed assessment and consideration of energy systems in different settings.
Landscape	*Protect and enhance the quality of landscape and publicly accessible open space*	• cause changes to the landscape environment that are at variance with the character of the area? • improve and enhance the quality and amount of accessible open space within the area?	✓/o/?	This option is expected to have positive or neutral effects on the surrounding landscape due ecosystem improvements and local environmental resilience. However, there is possibility of uncertain effects on the landscape and character of the area due to development of renewable energy and low-carbon transport projects depending on the technology used. Adaptation actions and appropriate detailed assessment can help manage unavoidable changes to landscape and natural heritage.

ANNEX E: Compatibility Analysis of CC Strategy Targets & Themes against SEA Objectives

Key to scoring		SEA Objectives										Comment / Mitigation / Enhancement
✓	Themes/priorities supportive of SEA Objectives	Overall effect	Biodiversity, fauna & flora	Population & human health	Soil	Water	Air	Climatic factors	Material assets	Cultural heritage	Landscape	
✗	Potential conflict between themes/priorities & SEA Objectives											
O	Themes/priorities have no identified conflict or support for SEA Objective											
?	Uncertain whether themes/priorities conflict with or support the SEA Objectives											
Strategy Vision & Themes	**Vision/Target**	✓	✓	✓	O	O	✓	✓	O	O	✓	The vision of the strategy is to create a framework to achieve net zero greenhouse gas emissions in Clackmannanshire by identifying means of maximising the financial, economic and social benefits of a transition to net zero. The main targets are for the area to achieve net zero carbon by 2040 for the Council's own operations at the latest and for the Clackmannanshire area by 2045 at the latest. Mainly the vision supports the SEA Objectives. Emphasis on carbon reduction means potential impact on some SEA issues less clear.
	Strategic Theme 1 Energy Heat and Buildings	✓	?	✓	?	✓/✗	✓	✓	✓	✓/✗	?	Decarbonise buildings under council management and support the ones across the wide area, enhance energy efficiency, reduce reliance on fossil fuels, invest in renewable energy, and facilitate access to affordable energy for everyone. Mostly the theme supports the SEA Objectives but with some uncertainty whether the theme conflict or support the SEA Objectives of biodiversity, soil and landscape and the possibility of some potential conflict between the theme and SEA Objectives of water environment and cultural heritage, depending on the technology implemented. The uncertain impacts need to be investigated more in deep through policy development emphasising the importance of all SEA environmental topics, affecting the decision-making of the best approach/alternative/technology to be considered. Potential negative impacts can be mitigated through policy development emphasising the importance of all SEA environmental topics, site investigation and assessment prior to project development, and appropriate technologies to be considered in different settings.
	Strategic Theme 2 Low-carbon Transport	✓	?	✓	?	?	✓	✓	O	✓	?	Shift the mode of transportation away from transport on the lower end of the diagram to more sustainable modes that are higher up the sustainable transport hierarchy. Mostly the theme supports the SEA Objectives but with some uncertainty theme conflict or support the SEA Objectives of biodiversity, soil, water and landscape as dependent on infrastructure choices to be taken. The uncertain impacts need to be investigated more in deep through policy development emphasising the importance of all SEA environmental topics, affecting the decision-making of the best approach/alternative/infrastructure to be considered. Potential negative impacts can be mitigated through policy development emphasising the importance of all SEA environmental topics, site investigation and assessment prior to project development, and appropriate technologies to be considered in different settings.

Key to scoring		SEA Objectives										Comment / Mitigation / Enhancement
✓	Themes/priorities supportive of SEA Objectives	Overall effect	Biodiversity, fauna & flora	Population & human health	Soil	Water	Air	Climatic factors	Material assets	Cultural heritage	Landscape	
✗	Potential conflict between themes/priorities & SEA Objectives											
O	Themes/priorities have no identified conflict or support for SEA Objective											
?	Uncertain whether themes/priorities conflict with or support the SEA Objectives											
	Strategic Theme 3 Waste, Recycling and the Circular Economy	✓	✓	✓	✓	O	✓	✓	✓	O/✓	O	Improve resource efficiency through maximising the volume and quality of recyclates and reducing the impact of waste management, by contributing to the transition towards a circular economy. It is identified the theme is only supportive of the SEA Objectives or the theme have no conflict or support for SEA Objective. Policy development should emphasise the importance of all SEA environmental topics and that site investigations are carried out and appropriate solutions are considered prior to any infrastructure projects to avoid the possibility of any negative impacts.
	Strategic Theme 4 Biodiversity, Carbon Storage and Agriculture	✓	✓	✓	✓	✓	✓	✓	O	✓/✗	✓	Safeguarding and improving biodiversity and ecosystems, increase the carbon storage potential, promote healthy and local eating. Mainly the theme supports the SEA Objectives, but with the possibility of conflict with the SEA Objectives on some cultural assets, which could be mitigated through advance site investigation and avoidance of sensitive sites.
	Strategic Theme 5 Adaptation, Planning and Organisational Capacity	✓	✓	✓	✓	✓	✓	✓	O	✓/✗	✓	Implement transformative measures to build resilience and sustainably safeguard our communities and environment; engage in community involvement efforts to foster societal and behavioural changes necessary for planning and adapting to the impacts of climate change. Predominantly the theme supports the SEA Objectives, but with the possibility of conflict with the SEA Objectives on some cultural assets. Actions to protect cultural assets from the changing climate need to be undertaken sensitively to minimise any potential negative impacts.
	Strategic Theme 6 Economic Development and Sustainable Procurement	✓	✓	✓	O	O	O	✓	✓	O	O	Deliver a development pattern centred on environmental sustainability to support economic growth, employability, skills development and community wealth building. It is identified the theme is only supportive of the SEA Objectives or the theme have no conflict or support for SEA Objective. Policy development should emphasise the importance of all SEA environmental topics and that site investigations are carried out and appropriate solutions are considered prior to any infrastructure projects to avoid the possibility of any negative impacts.

ANNEX F: Evaluation of the Effects of the CC Strategy

Theme 1 - Energy Heat and Buildings

Key to scoring		SEA Objectives									
++	Major positive	Biodiversity, fauna & flora	Population & human health	Soil	Water	Air	Climatic factors	Material assets	Cultural heritage	Landscape	Overall Effect
+	Positive										
0	Neutral										
-	Negative										
- -	Major Negative										
+ / -	Mixed										
?	Uncertain										
S	Short-term effects										
M	Medium-term effects										
L	Long-term effects										
Actions	1. Develop a long-term investment programme to meet the Council's obligations in relation the Scottish Government's latest New Social Housing Net Zero Standard (SHNZS) decarbonisation targets as part of the review of the 30-year HRA business plan.	0	++	0	0	?	+	+	+/-	0	Long term positive effects due to energy efficiency improvements, with expected reductions in energy use, tackling fuel poverty and carbon emissions from investment in city's housing stock. Installation may have impact on traditional and culturally significant buildings.
	2. Assess building fabric of properties held following asset review to determine appropriate insulation upgrade	0	++	0	0	0	+	+	+	0	Action itself will not have a direct environmental impact. Secondary actions if delivered may have long term positive effects due to energy efficiency improvements, with expected reductions in energy use, tackling fuel poverty and carbon emissions from investment in city's housing stock. The assessment will avoid cases when the installation could have impacted the traditional and culturally significant buildings.
	3. Use the HRA business plan review to compile a list of sites where upgrades are required, in order of necessity.	0	++	0	0	0	+	+	+/-	0	Action itself will not have a direct environmental impact. Secondary actions if delivered may have long term positive effects due to energy efficiency improvements, with expected reductions in energy use, tackling fuel poverty and carbon emissions from investment in city's housing stock. Installation may have impact on traditional and culturally significant buildings.
	4. Work on Tenant Participation Strategy to support the development of community and Council owned sustainable energy projects such as green retrofitting as part of ongoing- wider property restructure.	0/-	++	0/-	0/-	+	+	+	+/-	?	Action itself will not have a direct environmental impact. Secondary actions if delivered may have largely positive impacts through clean energy investments with expected reductions in carbon emissions. Installation may have impact on traditional and culturally significant buildings. Temporary release of particulate matter during construction, and disturbance of habitats, soil and water. The effects depend on the technology being considered. Negative impacts can be mitigated through advance site investigation and use of technology appropriate for the location.

	5. Reduce the carbon footprint, energy costs and increase efficiency within the public building stock, lighting designs to be drawn up for each building, with a view to replacing all older fittings with more energy efficient LED systems and possibly reducing the number of units required.	0	0	0	0	0	+	+	+/-	0	Long term positive effects due to energy efficiency improvements, with expected reductions in energy use and carbon emissions from investment in public building stock. Installation may have impact on traditional and culturally significant buildings.
	6. Development for a data led approach which entails understanding how the buildings and mechanical plant are used.	0	+	0	0	0	+	+	0	0	Long-term benefit through reduction of energy use, tackling fuel poverty and improved assets performance
	7. Use the stock condition survey information to compile a list of sites where upgrades are required, in order of necessity.	0	0	0	0	0	+	+	+/-	0	Action itself will not have a direct environmental impact. Secondary actions if delivered may have long term positive effects due to energy efficiency improvements, with expected reductions in energy use and carbon emissions from renewable heating installation on public buildings. Installation may have impact on traditional and culturally significant buildings.
	8. Convert street light units (including switch gear - which consumes electricity) sodium lanterns to LED.	0	+	0	0	0	+	+	0	0	Long-term positive impact on reducing carbon emissions, energy use and light pollution.
	9. Provide an investment-focussed framework for the promotion and development of the region's renewable energy resources for sustainable economic growth through the Regional Energy Masterplan and link to the LHEES.	0/-	++	0/-	0/-	+	+	+	+/-	+/-	Action itself will not have a direct environmental impact. Secondary actions, if delivered, may have positive environmental impacts although level of impact difficult to quantity at this stage. Possible temporary release of particulate matter during construction. Positive impact on delivery of low carbon heat networks and cumulative benefits from scaled up activity in order to achieve the required emissions reduction target.
	10. Apply the recommendation of LHEES and accompanying Delivery Plan to reduce emissions from private buildings, tackle fuel poverty and contribute to net zero targets, by identifying area-based solutions, as well as identifying zones suitable for the development of heat networks.	0/-	++	0/-	0/-	+	+	+	+/-	+/-	Largely positive impacts through energy efficiency and district heating investment, with expected reductions in energy use and carbon emissions. Installation may have impact on traditional and culturally significant buildings. Temporary release of particulate matter during construction, and disturbance of habitats, soil and water. The effects depend on the technology being considered. Negative impacts can be mitigated through advance site investigation and use of technology appropriate for the location.
	11. Use the Energy Efficient Scotland Area Based Scheme (EESABS) partnership opportunities as a platform to develop collaboration with Registered Social Landlords and other homeowners to improve the energy efficiency and reduce carbon emissions from privately owned homes	0	+	0	0	?	++	++	+/-	0	Focused on energy efficiency improvements (inc. renewables), with expected reductions in energy use and carbon emissions. Installation may have impact on traditional and culturally significant buildings.

Theme 2 - Low-carbon Transport

Key to scoring	
++	Major positive
+	Positive
0	Neutral
-	Negative
- -	Major Negative
+ / -	Mixed
?	Uncertain
S	Short-term effects
M	Medium-term effects
L	Long-term effects

		SEA Objectives									
		Biodiversity, fauna & flora	Population & human health	Soil	Water	Air	Climatic factors	Material assets	Cultural heritage	Landscape	Overall Effect
Actions	1. Implement the 'Connected Clackmannanshire' in order to further develop world class uninterrupted, well-maintained networks of segregated cycling, walking and wheeling routes that link our communities, schools and businesses. Ensuring better access to key services and public transport, and across Clackmannanshire.	+/0	++	0/-	0/-	++	++	+	0	0	Positive cumulative benefits expected through investment in active travel with benefits to air quality, providing additional amenity space, enhancing biodiversity and a reduction in carbon emissions. Potential temporary disturbance to soils.
	2. Review Local Transport Strategy.	+/-	+	0/-	0/-	+/-	+	+/-	+/-	+/-	Mixed impact, dependent on whether traditional transport planning or NTS2 and Climate Emergency considerations prevail.
	3. Develop EV Strategy / Policy for EV Charging.	0	+	0	0	+	+	+	0	0	Positive benefit with long term benefits to air quality and climatic factors. Cumulative benefit to air quality alongside other active travel actions.
	4. Update the Staff Travel Plan to facilitate travel to work based upon the sustainable transport hierarchy.	0	+	0/-	0	++	++	+	0	0	Positive benefits as a result of increased provision for sustainable travel modes including improved air quality and community health and wellbeing, followed by long-term emission reduction. There is potential for temporary disturbances to soils.
	5. School Travel Planning - Help primary schools and full-time nurseries complete and update their plans year on year which promote active travel, the barriers and actions to help.	0	++	0	0	+	+	0	0	0	Positive benefits as a result of reduced number of private vehicles on the road, associated carbon emissions and community health and wellbeing.
	6. Replacement of Internal Combustion Engine (ICE)	0	0/+	0	0	0/+	+	+	0	0	Positive benefits as a result of improvements to the fleet, reduced carbon emissions from council owned/ operated transport and improved air quality.
	7. Lock in behaviours beneficial to emission reduction that emerged in the COVID-19 lockdowns	0	+	0	0	+	+/-	+	0	0	Positive impacts through decreased paper use and travel and improves access to public services. Some perceived negative impacts might present if it is not ensured that digital systems are energy-efficient and accessible to all, minimizing the digital divide.
	8. Support and promote cycling and ebike hire schemes/community pool fleets to encourage cycling for short everyday journeys	+	++	+	+	++	++	+	0/+	+	Positive cumulative impact across most SEA topics expected through sustainable practices and behaviours promotion, contributing to broader environmental and community benefits. Impacts on cultural heritage are Neutral to Positive, depending on traffic changes around heritage sites.

	9. Improve the infrastructure around schools in order to make walking and wheeling to school attractive, fun and safe	0	++	0/-	0	++	++	+	0	0	Positive benefits as a result of increased provision for active travel including improved air quality and community health and wellbeing. There is potential for temporary disturbances to soils.
	10. Continue to promote the Council's pool car services, pool bikes and explore other efficiency options	+	++	+	+	++	++	+	0/+	+	Positive cumulative impact across most SEA topics expected through sustainable practices and behaviours promotion, contributing to broader environmental and community benefits. Impacts on cultural heritage are Neutral to Positive, depending on traffic changes around heritage sites.
	11. Explore vehicle utilisation analysis to improve use of resources such as through use of the telematics system (fleet driven)	0	++	0	0	++	++	+	0	0	Positive benefits in long-term particularly in air quality, climatic factors, and resource use, due to significant reductions in emissions, fuel consumption, and resource waste, contributing to environmental sustainability and public health improvements.
	12. Support and promote Car clubs in Clackmannanshire and potentially hiring of personal vehicles or hiring out car vehicles outside of Council hours.	+	++	+	+	++	++	+	0	+	Positive cumulative impact across most SEA topics expected through sustainable practices and behaviours promotion, contributing to broader environmental and community benefits.
	13. Encourage staff to make car sharing connections within the Council and point staff and residents to free to use car sharing platforms such as Liftshare	0	+	0	0	+	++	0	0	+	Positive cumulative impact expected through sustainable practices and behaviours promotion.
	14. Enshrine the Council's ambition to develop active travel friendly principles in long-term Town Centre Masterplans to act as a regeneration blueprint that could transform town centres while making active travel a realistic option for residents while conserving town centres' heritage	+	++	+	+	++	++	+	+	+	Major positive impact across most SEA topics, particularly in improving air quality, public health, and climate resilience, while preserving town centres' cultural heritage. This holistic approach ensures that town centres become more sustainable, healthier, and more vibrant, while respecting the historical and cultural significance of the area. Long-term benefits include significant reductions in emissions, enhanced biodiversity, and improved urban landscapes.
	15. Providing internal and external education reflecting the climate impacts of transport to support the transition to public and active transport.	0	+	0	0	+	++	0	0	0	Positive cumulative impact expected through sustainable practices and behaviours promotion.
	16. Ensure that there is adequate information on the central bus and railway station and how they link in with the cycle routes with adequate signage.	0	+	0	0	+	++	0	0	0	Positive impact expected through sustainable practices and behaviours promotion. The action will encourage sustainable transport, promotes public health, and helps reduce air pollution and greenhouse gas emissions.
	17. Pilot innovative 'warm-mix' emission saving initiatives for the construction of our roads infrastructure by using asphalt mixes that operate at lower temperatures and therefore reducing emissions.	0	++	+	+	++	++	+	0	0	Overall positive effect particularly for air quality, population and human health, and climatic factors, through reduction of emissions, energy consumption, and environmental pollutants, leading to improvements in air quality and contributing to climate change mitigation. Other positive impacts on soil, water, and material assets, as the initiative reduces pollution and enhances the sustainability of infrastructure projects.
	18. Encourage the local taxi drivers to shift towards low carbon vehicles	0	++	0	+	++	++	+	0	0	Positive overall effect, particularly in terms of air quality, population and human health, and climatic factors, by reducing emissions and air pollutants, contributing to cleaner environments and better public health outcomes. Water quality also benefits from reduced vehicle-related contamination and improved material assets as it supports the long-term sustainability of the local transport sector.

	19. Recycling of road planings from resurfacing schemes in order to create RAP (Recycled Aggregate Product) that helps reducing the amount of bitumen.	+	+	+	+	++	++	++	0	+	Overall long-term major positive through significant reductions in emissions, energy use, and the consumption of natural resources. The use of recycled materials minimizes the need for raw material extraction, which reduces negative impacts on biodiversity, soil, water, and landscapes. Population and human health also benefit from improved air quality and fewer disruptions during road maintenance activities.
	20. Invest in in-situ recycling road resurfacing schemes to conserve natural mineral resources, reduce lorry movements, save energy and reduce impact on local community.	+	++	+	+	++	++	++	0	+	Overall major positive effects through reduced emissions, energy use, and vehicle movements. Material assets benefit significantly from the conservation of resources and improved road longevity, while the impacts on biodiversity, water, soil, and landscapes are positive due to reduced environmental disruption and pollution risks.
	21. Implementing long term asset management of the road network to ensure investment in the road networks maintain a steady state that supports the local economy, reducing emissions and energy costs associated with pothole repairs and emergency road closures due to low investment.	0	+	0	0	+	+	++	0	0	Positive overall effect through implementing sustainable transport infrastructure, reducing emissions and energy costs, ensuring economic resilience by maintaining roads efficiently and reducing the need for emergency repairs.
	22. Embedding biodiversity and environmental consideration when creating new active travel routes.	++	++	0	0	++	++	+	0	+	Overall long-term positive impact overall, particularly for biodiversity, air quality, climate change mitigation, and public health, through promotion of more resilient urban ecosystems and healthier lifestyles while reducing the environmental footprint of transport infrastructure. Over the long term, these routes will not only facilitate low-carbon transport, but also improve urban landscapes and protect natural resources, making cities more sustainable and pleasant to live in.
	23. In new developments there is an expectation for high-quality active travel, EV infrastructure and connections to the bus network with the goal of creating '20-minute neighbourhoods' while being cognisant of how climate change impacts peoples' experiences of using public transport, such as in heat and flood risk areas.	+	++	+	+	++	++	+	+	+	Long term, multiple positive benefits through sustainable urban development, reduces carbon emissions, and improves health and resilience. Key long-term benefits include better air quality, healthier populations, and improved climate adaptation. The careful design of urban spaces with reduced vehicle dependency also enhances landscapes and helps preserve cultural heritage, making cities more livable and sustainable.

Theme 3 - Waste, Recycling and the Circular Economy

Key to scoring	
++	Major positive
+	Positive
0	Neutral
-	Negative
- -	Major Negative
+ / -	Mixed
?	Uncertain
S	Short-term effects
M	Medium-term effects
L	Long-term effects

		SEA Objectives									
		Biodiversity, fauna & flora	Population & human health	Soil	Water	Air	Climatic factors	Material assets	Cultural heritage	Landscape	Overall Effect
Action	1. Diversion of biodegradable waste from landfill	+	+	+	+	+	+	++	0	0	Largely positive or neutral impacts identified through the diversion of biodegradable waste from landfill.
	2. Implementing initiatives that contribute to Scottish Government's target to reduce waste sent to landfill by 5% by 2025	+	+	+	0	0	+	+	0	+	Largely positive or neutral impacts identified through the reduction of waste from landfill.
	3. Establish links with businesses, residents, schools, community groups and other partners to reduce waste and increase recycling rates – particularly through the Curriculum for Excellence and the EcoSchools Programme	+	+	0	+	+	+	+	0	0	Positive cumulative impact expected through sustainable practices and behaviours promotion.
	4. Produce videos to promote dry recycling and food waste recycling by households.	0	+	+	0/ +	+	+	+	0	0	Positive benefits in promoting sustainable practices and reducing Clackmannanshire's litter and food waste.
	5. Work with schools to produce videos promoting recycling and climate change material including areas such as music	0	+	+	+	0	+	++	0	0	Positive impact on the sustainable use of resources, recycling and educational opportunities.
	6. Work with ACE and the Wee County Men's Shed volunteers to increase the amount of waste that is diverted to re-use at Forthbank Recycling Centre.	0	+	+	0	0	+	++	0	0	Largely positive cumulative benefit expected through significant waste reduction and increase of re-using and repair.
	7. Provide community groups and schools, upon request, with home composters and food waste digesters to produce a useful by-product (compost or digestate) while reducing the amount of waste that goes to landfill	0	+	0	0	0	+	+	0	0	Largely neutral, with some positive impacts identified but of limited significance due to scale.
	8. Ensuring that all Council services such as Property and Housing services manage the waste that they generate more sustainably, seeking to maximise recycling at source and reduce the amount of residual waste requiring disposal at Forthbank Recycling Centre	0	+	+	+	+	+	++	0	0	Largely positive cumulative benefit expected through significant waste reduction and increase of re-using and repair in Council's projects.

	9. Reflect the circular economy as an economic model which will play a significant role in the transition to net zero in Council policies, reports and strategies.	0	+	+	+	+	+	++	0	0	Largely positive cumulative benefit expected through significant waste reduction and increase of re-using and repair in major developments.
	10. Undertake a waste audit of Council buildings and recruit Recycling Champions to improve awareness of recycling across different Council sites. Explore the potential to extend this scheme to schools and partner groups to share a 'blueprint' for increasing recycling in buildings and share material from organisations such as Zero Waste Scotland.	0	+	+	+	0	+	++	0	0	Action itself will not have a direct environmental impact. Secondary actions if delivered will bring positive benefits in promoting recycling and reducing Clacks' waste and litter within workplaces.
	11. Reduce food waste through implementation of the food waste hierarchy, raising awareness of waste and the redistribution of good nutritious food from all stages of the supply chain: farms to retail	0	++	+	+	0	+	0	0	0	Positive benefits in reducing the amount of food waste generated in Clacks, tackling food poverty and promoting sustainable practices. Positive impact due to a reduction in the amount of litter.
	12. Strive to contribute towards the Scottish Government's target for a recycling rate of 70% of all waste by 2025.	0	+	+	0	0	+	++	0	0	Positive benefits in reducing city's waste generation and promoting sustainable practices within homes and workplaces.

Theme 4 - Biodiversity, Carbon Storage and Agriculture

Key to scoring	
++	Major positive
+	Positive
0	Neutral
-	Negative
- -	Major Negative
+ / -	Mixed
?	Uncertain
S	Short-term effects
M	Medium-term effects
L	Long-term effects

	SEA Objectives									
		Biodiversity, fauna & flora	Population & human health	Soil	Water	Air	Climatic factors	Material assets	Cultural heritage	Landscape	Overall Effect
Action	1. Fully commit and be a key partner in the Forth Climate Forest Initiative to increase tree canopy cover where possible, increase our carbon sequestration and improve our bio-diversity connectivity while recognising the impact that this would have on the area's net emissions while also and contribute to the Scottish Government's targets of 12,000 hectares of woodland being created annually.	++	+	++	++	++	++	0	0	+	Long term, multiple positive benefits through increased woodland expansion including positive impacts on human health, air and water quality, improved habitats, increased biodiversity and increased resilience to the impacts of climate change through natural flood management.
	2. Undertake Net Negative emission / Carbon Sequestration quantification study.	++	+	++	++	++	++	0	0	+	Only positive or neutral impacts identified but of limited significance due to scale.
	3. Adopt a Council-wide approach to the conservation of biodiversity that further embeds biodiversity considerations into corporate & service plans, policies, strategies and operations is required so that all decision-making takes account of the potential impacts on local biodiversity.	++	+	+	+	+	+	0	0	+	Long term, multiple positive benefits across all environmental issues through protecting and enhance habitats and increase biodiversity.
	4. Review the Council's local biodiversity action plan (LBAP) to include aims/objectives and actions which will help protect and enhance pollinator habitats and species.	++	+	+	+	+	+	0	0	+	Long term, multiple positive benefits through enhanced natural habitats, enhanced green spaces and resultant improvements in air quality.
	5. To investigate and produce recommendations on the creation of a Pollinator Strategy and long-term plan and capacity to deal with the decline in pollinators.	++	+	+	+	+	+	0	0	+	Long term, multiple positive benefits through enhanced natural habitats, enhanced green spaces and resultant improvements in air quality.
	6. Explore ways of improving quality of water and soils and developing other measures to reverse biodiversity loss and habitat declines at other sites.	++	+	++	++	0	0	0	0	0	Only long term positive or neutral impacts identified.
	7. Review Council's Food Growing and Allotment Strategy.	+	++	+	+	+	+	0	0	+	Local food growing builds community resilience, reduces emissions from food miles, can improve soils, landscape and biodiversity as well as contribute towards water and air quality when compared with other land uses. Long term benefits through reduced carbon emissions as a result of the transportation of food.

	8. Ensure biodiversity is entrenched into Town Centre Masterplans and site development briefs to include the availability of greenspace, parks linkages and greening options through a place-based lens.	+	+	+	+/-	+	+	0	0	+/-	Largely positive impacts identified but with the potential for negative impacts on landscape, which could be mitigated through advance site investigation and avoidance of sensitive areas. Some perceived negative impacts might be due to familiarity with a degraded environment, which could be mitigated by greater promotion of the climate and nature benefits of certain proposed changes. Site investigation on a case-by-case basis will be vital to ensure any developments are appropriate to the location.
	9. Collaborate with planning colleagues to consider means of greening towns through tree planting, food planting and post of nectar rich flowers as 'Islands' that allow pollinators a link from one bigger site to another (like Island hopping) through future LDP Review and the preparation of Masterplans and Site Briefs.	+	+	+	+/-	+	+	+	+	+	The action will identify opportunities to improve green spaces and green infrastructure which will contribute to improved health, air and water quality, increase biodiversity and growing spaces and improving resilience. Any landscaping may cause temporary disturbance to soils.
	10. Approve Local Nature Conservation sites and subsequently considered while approving new building sites.	++	+	+	+	+	+	0	0	++	Largely positive impacts identified through improved health of ecosystems, people, and communities, and creation of local nature networks.

Theme 5 - Adaptation, Planning and Organisational Capacity

Key to scoring	
++	Major positive
+	Positive
0	Neutral
-	Negative
- -	Major Negative
+ / -	Mixed
?	Uncertain
S	Short-term effects
M	Medium-term effects
L	Long-term effects

		SEA Objectives									
		Biodiversity, fauna & flora	Population & human health	Soil	Water	Air	Climatic factors	Material assets	Cultural heritage	Landscape	Overall Effect
Action	1. Review 'Sustainability Considerations' to ensure compliance with net zero targets.	+	+	+	+	+	+	+	+	+	Largely long term, multiple positive benefits across all environmental issues through protecting and enhance habitats and increase biodiversity, prioritising all decisions on new infrastructure investment based on their contribution to an inclusive net zero carbon economy, making the climate emergency a guiding principle in all planning decisions while involving climate experts in planning.
	2. Agree as a Council to align spending plans and the use of resources to contribute to reducing emissions and while not pursuing high-carbon initiatives that would jeopardise net zero such as new roads while adapting capital bid processes and revenue budgeting to account for the requirement to reduce carbon.	+/-	+	+/-	+/-	+/	++	+	+/-	+/-	Mix impact depending on the technology and development of new types of low-carbon infrastructure, such as solar farms or wind turbines, could alter local landscapes and potentially lead to visual or ecological impacts if not designed with sensitivity to the surrounding environment
	3. Respond to input from the Climate Change Forums with the following actions: • Create a quarterly 'Climate Clacks' newsletter, • Create an 'Over to You' section on the Council's website with recommendations for individual action • Hold theme-specific events for engagement, starting with engagement events on the consultations of the REM, Pollinator Strategy and Climate Change Strategy.	0	+	0	0	0	0	0	0	0	Positive impact expected through sustainable practices and behaviours promotion. The action will foster a more informed and active community,
	4. Delivering 20-Minute Neighbourhoods.	+	++	+	+	++	++	+/-	+	+	Major long term positive effects across most SEA topics, with some mixed impacts related to material assets due to the initial investment required. Positive impacts in air quality and climatic factors from the reductions in carbon emissions through decreased car usage Overall, the concept supports sustainable development, enhances public health, and contributes positively to environmental and community resilience.
	5. Evergreen Investment Fund. Following the Housing Business Plan Review and Stock Condition Survey, explore front-loading spending on retrofitting and energy efficiency to make significant long-term cost savings that could more than pay for themselves while reducing emission on the Council's portfolio. These savings could then be re-invested into an evergreen fund for other cost savings.	+	++	+	+	++	++	+	0	+	Positive cumulative benefits with major impact on long -term cost savings and reduce emission.

	6. Facilitate adaptation to climate change by considering the flood risk and protecting the natural capital in major spending and planning decisions.	+	+	+	+	+	+	+	+	+	Positive cumulative benefits in all SEA topics through enhanced management of natural resources and infrastructure, improved public health, and supporting long-term sustainability.
	7. Press for divestment from fossil fuels including through the public sector pension fund.	++	++	+	+	++	++	0	0	+	Major positive in long term through reduction of funding for fossil fuel projects, aiding in emission reductions, improving air quality, decrease water pollution and contamination risks. Neutral effects on material assets and cultural heritage.
	8. Establish a Carbon Budget for Clackmannanshire's emission trajectories to net zero and monitor performance against it in conjunction with interim emission reduction targets leading up to 2040.	0	0	0	0	0	+	+	0	0	Targeted at reducing carbon emissions, energy use and raising awareness within the Council's operation. Impact can be quantifiable, dependent on type of carbon budget selected. Mainly an administrative action with no discernible environmental impact of other SEA objectives.
	9. Explore using Adaptation Scotland's benchmarking tool to undertake an adaptation assessment to identify a baseline for the Council and allow progress in relation to adaptation measures to be tracked, the identification of gaps and potential areas for future progress.	0	0	0	0	0	0	0	0	0	Administrative action with no discernible environmental impact.
	10. Invest in digital infrastructure, innovative use of data, digital skills, universal access to digital public services and locking in positive trends and behaviours from the Covid-19 pandemic.	0	+	0	0	+	+/-	+	0	0	Positive impacts through decreased paper use and travel and improves access to public services. Some perceived negative impacts might present if it is not ensured that digital systems are energy-efficient and accessible to all, minimizing the digital divide.
	11. Provide universal access to climate education, literacy, and learning while creating a communications link for employees from all areas of the council to escalate emission savings and cost savings ideas.	+	+	+	+	+	+	+	+	+	Positive cumulative impact in medium and long-term through expected influence of the CC Strategy to promote sustainable practices and behaviours.
	12. Develop an internal communications plan for climate action and associated 'brand' for staff to recognise and work towards including a way for all staff members to escalate their ideas for decarbonisation and cost saving opportunities to the Energy and Sustainability Team.	+	+	+	+	+	+	+	+	+	Positive cumulative impact in medium in long-term through expected influence of the CC Strategy to promote sustainable practices and behaviours.
	13. Callout for voluntary Green Champion roles across service areas to help normalise Climate Change and Sustainability practices across the Council. • Recycling Champions • Lift Share / Active Travel Champions.	+	+	0	+	+	+	+	0	0	Positive cumulative impact expected through sustainable practices and behaviours promotion.
	14. 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, the Policies of National Planning Framework 4, regional land use strategies, including the Regional Spatial Strategy, the Local Development Plan and development masterplans.	+	+	+	+	+	+	+	+	+	Positive cumulative impact through enhancing the resilience of ecosystems and communities by promoting sustainable development and biodiversity conservation. This approach will help mitigate climate risks and support long-term environmental health. However, it will require careful integration across various planning frameworks to ensure that development and conservation objectives are aligned.
	15. Integrate wording on Council Job Descriptions for net zero and Climate Change duties.	0	0	0	0	0	0	0	0	0	Administrative action with no discernible environmental impact.

	16. Alloa town centre and Forthbank Transformation Zone: Build place-based integration of capacity, services, investment and infrastructure to improve community and economic resilience. Partnership working on upstream preventative approaches. Focus on Alloa town centre and Forthbank.	+/-	+	0	0	+/-	++	+	+/-	+/-	Mixed impact depending on which considerations will prevail. Likely long-term positive effects positive through improvements in urban infrastructure, air quality, and public health due to better integration of services and sustainable development practices. However, there are potential risks, such as the loss of green spaces and increased pollution during construction. Appropriate further investigation is essential to mitigate potential negative impacts and maximize the long-term benefits for the community and environment
	17. Review the Council's Local Development Plan.	+/-	+/-	0/-	0/-	+/-	+/-	+/-	+/-	+/-	Mixed impact, dependent on which considerations from the NPF4 and Climate Emergency considerations prevail.
	18. NPF 4: Consider projected heat spots of climate change impacts in Clackmannanshire and opportunities for greening and resilience through local wildlife pathways, tree planting and food planting.	+	++	0	0	0	++	0	0	+	Long-term positive benefits to climatic factors people heath, mainly targeting vulnerable groups such as elderly population by creating climate sensitive areas within Clackmannanshire. Secondary positive improvements through tree planting and food planting.

Theme 6 - Economic Development and Sustainable Procurement

Key to scoring	
++	Major positive
+	Positive
0	Neutral
-	Negative
- -	Major Negative
+ / -	Mixed
?	Uncertain
S	Short-term effects
M	Medium-term effects
L	Long-term effects

		SEA Objectives									
		Biodiversity, fauna & flora	Population & human health	Soil	Water	Air	Climatic factors	Material assets	Cultural heritage	Landscape	Overall Effect
Action	1. Review the Council's Procurement Strategy to identify conflicts or ambiguity with climate change targets and amend as required	0	0	0	0	+	+	++	0	0	Minor benefits for air quality, climatic factors and material assets through the support for 'green goods' and services and increasing the consideration of life-cycles of construction materials, waste management process and transport through the procurement of resources. In committing to ensuring alignment with the Sustainable Procurement Duty.
	2. Explore procuring green energy	0/-	++	0/-	0/-	+	++	+	+/-	+/-	Largely positive impacts but with the potential for negative localised impacts on habitats, soil, water, cultural heritage and landscape, dependent on the technology being considered. Negative impacts can be mitigated through advance site investigation and use of technology appropriate for the location.
	3. Commit to procuring good food such as in the Government's Eatwell Guide due to the significant health and emission reduction potential, particularly in schools	0	+	0	0	0	+	0	0	0	Positive benefits to population and human health especially in schools through increased access to fresh, healthy produce. Long term benefits through reduced carbon emissions as a result of the transportation of food.
	4. Devise procurement strategies and frameworks that allow space for local procurement to increase, to provide local investment in our economy, increased market share of contracts and projects and investment in our Clackmannanshire employment base	0	++	0	0	0	+	0	0	0	Positive benefit through reduced emissions associated with the transport of goods and boost of local economy.
	5. Public bodies can lead the way through developing procurement frameworks and contracts with specific environmental requirements and with developing and maintaining standards / regulation thus building on the existing sustainable procurement duties placed on public bodies	+	?	+	+	+	+	?	?	?	Positive cumulative effects through projects that enhance and protect the environment.
	6. Explore requirements of procurement processes and business support to prioritise businesses with emission reduction plans	0	+/-	0	0	+	++	0	0	0	Positive effects through GHGs emission reductions plans, however this might not prioritise the local SMEs.

	7. Continue to explore options to securing funding to support businesses with carbon accounting, establishing net zero targets and decarbonisation	+	+	0	0	+	++	+	0	0	Positive cumulative impact in long-term by empowering local businesses and encouragement of emission reduction practices.
	8. Continue to develop the environmental element of the Good Employment Charter to encourage employers to develop plans to reach net zero	+	+	0	0	+	+	+	+	+	Positive cumulative impact through GHGs emission reductions plans and promotion of sustainable practices and behaviour.
	9. Explore the development of a Carbon Charter with a Green Pledge and carbon certification for businesses	+	+	0	0	+	++	+	0	0	Positive cumulative impact in long-term by empowering local businesses and encouragement of emission reduction practices.
	10. Respond to businesses' input at the Climate Change Forums and developing demand-led initiatives such as: - hosting green networking events; - identifying green businesses as role models for other organisation exploring emissions reductions; - escalating green skills gaps to learning providers and Scottish Government to maximise economic productivity; - explore potential through the funding through the Flexible Skills programme and the SIEC.	+	+	+	+	+	+	+	+	+	Positive cumulative impact through increased cohesion of local participation to adopt sustainable practices.
	11. Securing funding for or signposting to partner organisations' energy reduction initiatives	0/-	++	0/-	0/-	+	++	+	+/-	+/-	Largely positive impacts but with the potential for negative localised impacts on habitats, soil, water, cultural heritage and landscape, dependent on the technology being considered. Negative impacts can be mitigated through advance site investigation and use of technology appropriate for the location.
	12. Explore making business support conditional to ensure that companies align with the transition to net zero	+	+	+	+	+	+	+	+	+	Positive cumulative impact through promotion of sustainable practices and behaviours