

**Local
Authority
Climate
Action Plan
2024 -2029**



Comhairle Cathrach
& Contae **Luimnigh**

Limerick City
& County Council

ATLANTIC EDGE

LIMERICK
EUROPEAN EMBRACE

www.limerick.ie

Foreword

As the effects of climate change intensify worldwide, it is vital that Limerick City and County Council takes a leading role in addressing this pressing issue.

As a local authority, the Council is well positioned to drive meaningful change through innovation and commitment to tackling the impacts of climate change.

I welcome the publication of Limerick City and County Council's Climate Action Plan 2024-2029. The plan outlines our local strategies for tackling climate change in alignment with global, European and national agreements and policies. This plan sets out ambitious targets and actions across a range of areas, which will deliver real and lasting results.

A key component of the plan is the commitment to working with communities across the County to empower them to tackle challenges and issues in their own areas.

Innovation will be required to achieve our targets and the inclusion of a Decarbonizing Zone in the City Centre will see the local authority work with stakeholders from the community to implement a range of climate mitigation, adaptation and biodiversity measures that will address local low carbon energy and greenhouse gas emissions. I would like to thank members of the Council and the Climate Action and Biodiversity and Environment Strategic Policy Committee (SPC) for their work in delivering this plan and look forward to working with our neighbouring local authorities and the Atlantic Seaboard South Climate Action Regional Office (CARO) into the future.



A handwritten signature in blue ink that reads "Gerald Mitchell".

Councillor Gerald Mitchell,
Mayor of the City and County of Limerick.

Limerick City and County Council's Climate Action Plan 2024-2029 demonstrates our ongoing commitment to climate action through the reduction of greenhouse gas emissions, conserving resources, and fostering sustainable practices.

The Council must lead by example. The target of a 51% reduction in Limerick City and County Council's own emissions and a 50% energy efficiency increase by 2030 represents significant challenges to this organisation. These are challenges that we have already begun to address through our Active Travel schemes, flood protection schemes and social housing retrofitting amongst other initiatives.

We will continue to work with all communities across Limerick in their own endeavours to create climate resilient and sustainable towns, villages and neighbourhoods for everyone. The Community Climate Action Programme provides dedicated funding to support community initiatives.

As we transition to a low-carbon economy, Limerick City and County Council will enable the creation of green jobs, enhance public transportation, and bolster our resilience to climate-related challenges.

I invite all stakeholders and residents in Limerick to join us in this vital endeavour. Together, we can work to mitigate the impacts of climate change, protect our natural heritage and biodiversity, and build a brighter future for generations to come.



A handwritten signature in blue ink that reads "Pat Daly".

Dr Pat Daly
Chief Executive
Limerick City and County Council

Contents

1	INTRODUCTION	5
1.1	Need for a Climate Action Plan	5
1.2	Scope of the Plan	7
1.3	Local Authority Climate Action Planning	8
1.4	Plan Making Process and Structure	10
1.5	Environmental Assessments	11
	1.5.1 Strategic Environmental Assessment	11
	1.5.2 Appropriate Assessment	12
1.6	Public Engagement and Approval	12
2	POLICY AND CONTEXT	13
2.1	Profile of Limerick	13
2.2	Overview of Climate Change	16
2.3	Climate Policy Context	16
2.4	International Climate Change Policy	17
2.5	Climate Change Policy in Ireland	17
2.6	National Dialogue on Climate Action	18
3	THE EVIDENCE BASE FOR CLIMATE ACTION IN LIMERICK	20
3.1	Limerick City and County Council's Emissions	21
	3.1.1 Gap to Target	21
	3.1.2 Priority Areas for Reduction of Limerick City and County Council's own Emissions	21
3.2	Emissions Profile of County Limerick	22
	3.2.1 Emissions Reduction Pathway for County Limerick	23
3.3	Climate Change Risk Assessment for Limerick	24
	3.3.1 Purpose and Methodology of Climate Change Risk Assessment	24
	3.3.2 Limerick's Changing Climate	26
	3.3.3 Projected Climate Change for Limerick	27
	3.3.4 Future Climate Risks and Impacts	28
4	CLIMATE ACTION RESPONSE	31
4.1	A Vision and a Mission for Limerick City and County Council's Climate Action Plan	31
4.2	Buildings and Energy	32
	4.2.1 Limerick City and County Council Energy Management Team	33
	4.2.2 Public Lighting	33
	4.2.3 Social Housing Retrofits	33
	4.2.4 Alternative Energy and Heat Sources	33
	4.2.5 Co-ordinating, Facilitating Advocating	34
4.3	Transport	34
	4.3.1 Limerick City and County Council Operations	35
	4.3.2 Limerick Shannon Metropolitan Area Transport Strategy	36
	4.3.3 Active Travel	37
	4.3.4 Electric Vehicles	37
	4.3.5 Bus Connects Limerick	37
	4.3.6 Additional Benefits to a Reduction In transport Related Emissions	38

4.4	Environment	39
4.4.1	Nature Based Solutions	39
4.4.2	Green Infrastructure	39
4.4.3	Trees	39
4.4.4	Biodiversity	40
4.4.5	Additional Benefits	40
4.5	Flood Resilience	40
4.5.1	Catchment Flood Risk Assessment & Management (CFRAM)	41
4.5.2	Sustainable Drainage (SUDS)	42
4.5.3	Improved Maintenance of Storm water, Surface Water, and Road Gully Networks	42
4.5.4	Additional Benefits	42
4.6	Circular Economy and Resource Management	42
4.6.1	Managing Waste in LCCC	43
4.6.2	Adopting a Circular Economy	43
4.6.3	Protecting the Local Environment	43
4.6.4	Additional Benefits	44
4.7	Community Engagement	44
4.7.1	Building Climate Communication and Awareness	44
4.7.2	Engaging With External Partners	45
4.7.3	Embedding Climate Action Internally and Externally	45
4.7.4	Community Climate Action Programme	46
5	DECARBONISATION ZONE	47
5.1	Introduction	47
5.2	Limerick's Proposed DZ Selection Process	47
5.3	Outline of DZ and Proposed Measures	47
6	IMPLEMENTATION, FUNDING AND REPORTING	54
6.1	Planning for Implementation	54
6.2	Funding	54
6.2.1	Supporting Communities	55
6.3	Tracking Progress through Key Performance Indicators (KPIs)	56
6.3.1	Reporting Requirements and Arrangements	56
6.3.2	Internal Reporting	56
6.3.3	External Reporting	57
6.3.4	Environmental Compliance and Integration	58
7	SCHEDULE OF ACTIONS	60

1 INTRODUCTION

1.1 Need for a Climate Action Plan

Climate change is increasingly understood to be the most critical, long-term global challenge of our time, with its impacts continuing to be felt both worldwide and at home. There is overwhelming evidence (such as that outlined in the Intergovernmental Panel on Climate Change (IPCC's) Working Group I Sixth Assessment Report, that our climate has changed since the pre-industrial era (roughly 1850-1900) and that the release of greenhouse gas (GHG) emissions through human activities are the principal cause of that change.

The result of human activities is that in the period between 2011 and 2020, global surface temperatures reached 1.1°C above the 1850-1900 average. Ireland's climate echoes the global situation, seeing similar temperature increases. As a result, our climate is currently experiencing both temperature and rainfall extremes.

Recent extreme weather events have highlighted the vulnerability of individuals, businesses, communities, infrastructure and the environment to climate change, emphasising the need for urgent action across all sectors of society.

Existing social, economic and environmental challenges are often compounded by climate change, which in turn is increasing our vulnerability to the changing climate and new extremes.

Based on observed changes to climate and its impacts, Met Éireann, the Environmental Protection Agency (EPA), and other climate scientists are able to make robust projections for future climate patterns both in Ireland and globally. For example, the EPA, Marine Institute, and Met Éireann published The Climate Status Report for Ireland 2020 in July 2021. Its projections indicate that the climate trends observed over the last century will continue and intensify over the coming decades. Future climate projections for Ireland can be summarised as shown in the figure below.

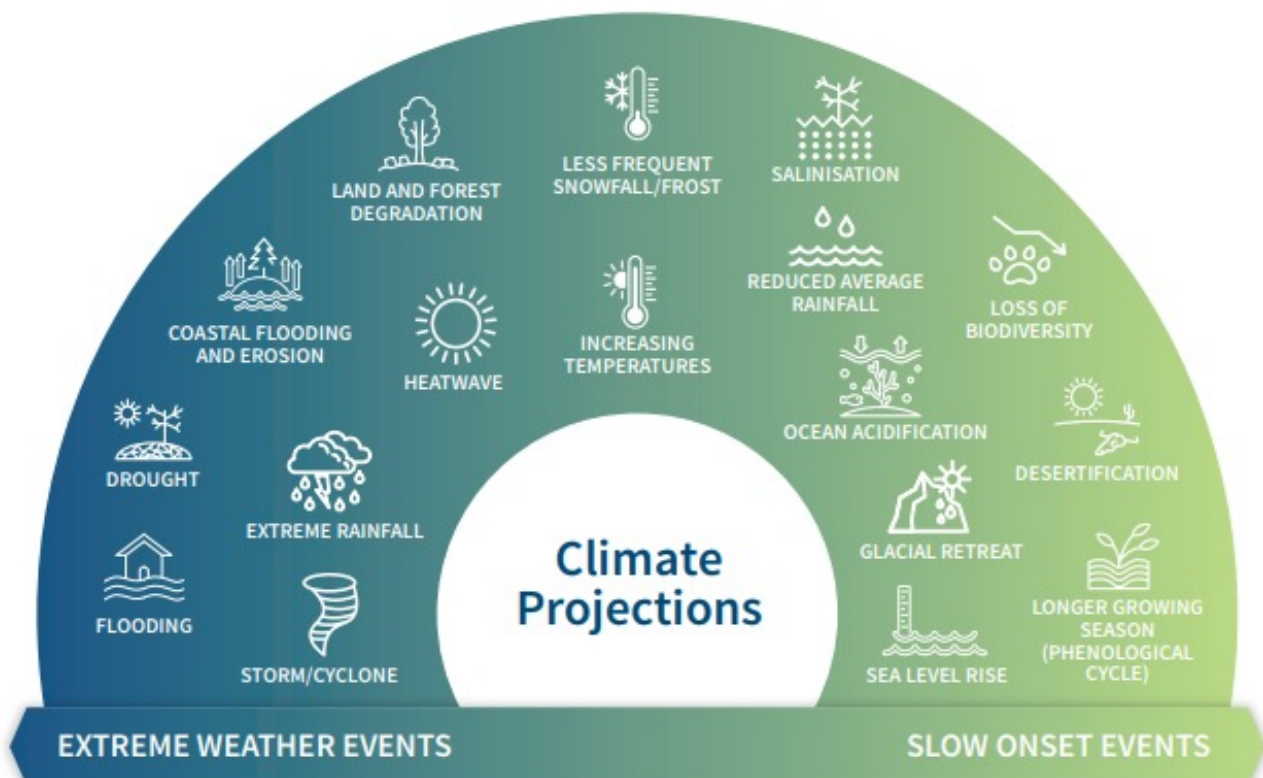


Fig 1.1: Future Climate Projections for Ireland (Source: Based on: © GIZ /Global Programme on Risk Assessment and Management for Adaptation to Climate Change (Loss and Damage)

It is within this context that Limerick City and County Council has prepared this Draft Climate Action Plan 2024-2029. It aims to facilitate Limerick's transition to a low carbon and climate resilient County. This will be achieved by delivering and promoting best practice in climate action at local level. This aim is aligned to the Government's overall National Climate Objective, which seeks to pursue and achieve, by no later than the end of 2050, the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy.

This is set out in the Climate Action and Low Carbon Development (Amendment) Act 2021, which also frames Ireland's legally binding climate ambition, to delivering a reduction in greenhouse gas emissions of 51% by 2030. This will place the country on a trajectory to achieving climate neutrality by the end of 2050. In preparing this Draft Climate Action Plan, Limerick City and County Council has considered all relevant climate legislation and policy. A County Climate Change Risk Assessment and mitigation baseline assessments for the County, and the Decarbonisation Zone were conducted.

The Climate (Amendment) Act 2021 specifically requires all local authorities in Ireland to prepare and make a Climate Action Plan. It stipulates that all local authorities need to prepare a LACAP that specifies the mitigation and adaptation measures to be adopted by the local authority for a period of 5 years. These plans will drive mitigation and adaptation measures at the local level, translating the national policy to the specific local situation in meeting the National Climate Objective.

The Climate Action Plan for 2024 to 2029 will build on the work achieved by the previous Climate Adaption Plan and County Development Plan and will demonstrate the increased ambition of Limerick City and County Council to play a significant role in delivering adaptation and mitigation measures at local and community levels (as explained in Fig. 1.2 below). The Council and other local authorities are entrusted to put into operation measures that assist the country to meet its ambitious climate targets and the National Climate Objective, through local authority regulatory and strategic functions.

The Climate Action Plan is a key instrument that strengthens the links between both national and international climate policy and the delivery of effective climate action at local and community levels, through place-based climate action, as detailed in the following sections.

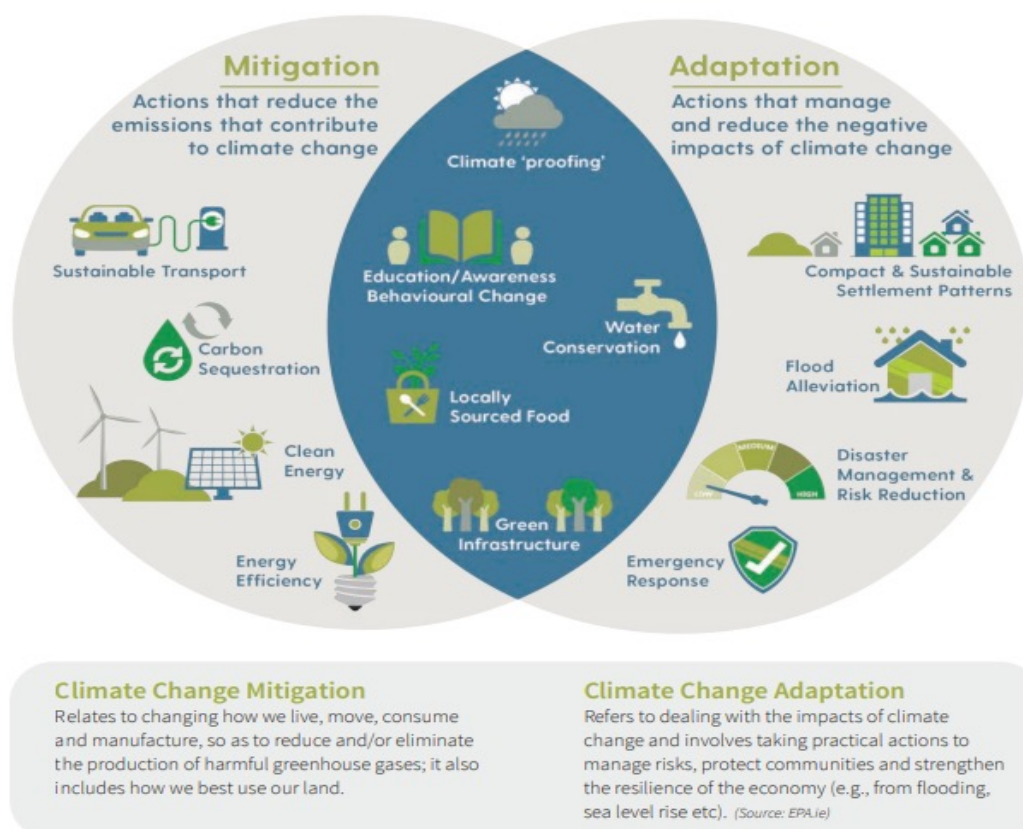


Fig. 1.2: Climate Change and Climate Mitigation (Source: Climate Action Regional Office)

1.2 Scope of the Plan

Set against the backdrop of an evolving and ambitious framework of national climate policy, Limerick City and County Council stands ready to lead on climate action and have huge ambition for what it can achieve with government support. Through the LACAP, Limerick City and County Council will seek to deliver climate action across three key areas:

1. Delivering climate action across local authority functions and services: Local authorities are responsible for approximately 11% of all public sector emissions. Local authorities are accountable for and have authority over the management and reduction of these emissions. In addition, protecting and enhancing the resilience of the human and infrastructural assets against the negative impacts of climate change while ensuring essential functions and services are delivered, is also the responsibility of the local authority.

2. Influencing and leading climate action across its communities: The local authority plays a leadership role to drive climate action at the local and community levels. Through this leadership role, the local authority takes on the responsibility to address the unprecedented challenges of climate change in the many distinct and diverse ways available to them.

3. Co-ordinating, facilitating and advocating for climate action: Local authorities also have significant scope to maximise their regulatory and strategic functions such as spatial planning, infrastructural provision and local economic and community development to prompt and promote local responses and influence and support the reduction of emissions across all sectors of society at local level, while supporting communities to adapt and build resilience to the impacts of a changing climate. In addition, local authorities can secure elevated protection and enhancement of the natural environment and biodiversity, continue their proactive engagement on flood risk management, source funding and investment, as well as coordinate and work in partnership with other stakeholders to facilitate and enable the delivery of appropriate climate initiatives and infrastructure.

To deliver across these areas, Limerick City and County Council will have to apply an organisational and community focus on building resilience to the negative impacts of climate change (adaptation) and in tackling the causes of climate change (mitigation) across all activities.

The primary focus of this plan will be on reducing greenhouse gas emissions from across the Council's own assets and infrastructure by 51% by 2030. This will require transformative action that can support and facilitate communities and business to meet their own targets. This will ensure the environmental, social and economic benefits that will come with climate action can be equitable and fully realised.



Fig 1.3: The two action area areas of the LCCC Climate Action Plan

Limerick City and County Council has significant scope across its functions to support these ambitions. As a local authority, we can utilise key strategic and regulatory powers as well as instruments to mainstream climate action into our broad range of functions such as spatial planning, infrastructural provision and local economic and community development to prompt and promote local responses.

Limerick City and County Council can secure elevated protection and enhancement of the natural environment and biodiversity, continue their proactive engagement on flood risk management, source funding and investment, as well as coordinate and work in partnership with other stakeholders to facilitate and enable the delivery of initiatives and infrastructure.

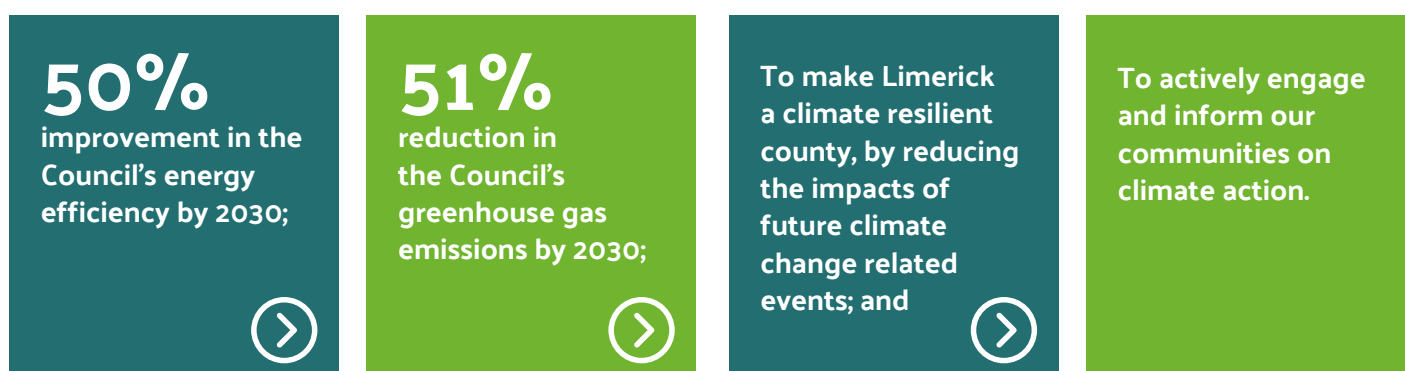
A key pillar of this will be the launch of the Community Climate Action Fund in Limerick, a national programme of funding to support and empower the creation of low carbon, sustainable communities. In a changing climate, the aim is to become more resilient to all future possibilities. This will allow local communities to thrive and work towards real solutions that are meaningful, inclusive, fair and accessible for all. Limerick City and County Council works closely on climate action with the local authorities (Clare County Council, Kerry County Council, Cork County Council and Cork City Council) and is supported in the delivery of climate action by the Atlantic Seaboard South Climate Action Regional Office (CARO). CARO coordinates engagement across the varying levels of government and helps build on experience and expertise in the area of climate action.

1.3 Local Authority Climate Action Planning

The Limerick City and County Council Climate Action Plan strengthens the links between national and international climate policy and the delivery of effective climate action at local and community levels, through place-based climate action. An overview of the Climate policy context is provided in Section 2.

This Plan reinforces the commitment of the local government sector to lead on climate action at local and national levels, as reflected in the local government strategy Delivering Effective Climate Action 2030 (DECA). Over its preparation and implementation, the Council's climate action plan offers an opportunity to bring together critical stakeholders across communities and businesses to build a vision for a climate neutral future.

The targets of this plan are as follows:



The Plan is also outward focused and includes a range of actions for which the Council can 'Influence', 'Co-ordinate and Facilitate' and 'Advocate' for other sectors, in meeting their own climate and energy targets, thereby reflecting the 'National Climate Objective' and an all of society reduction in greenhouse gas emissions of 51% by 2030. Whilst it is acknowledged that there is no 'sectoral emission ceiling' for the local authority sector, the Plan aims to support other sectors and local communities in building resilience to the negative impacts of climate change and in tackling the causes of climate change.

The implementation of the Climate Action Plan also aims to facilitate a Just Transition across the County. A Just Transition means ensuring that the transition towards meeting the National Climate Objective happens in a way that leaves no one behind.

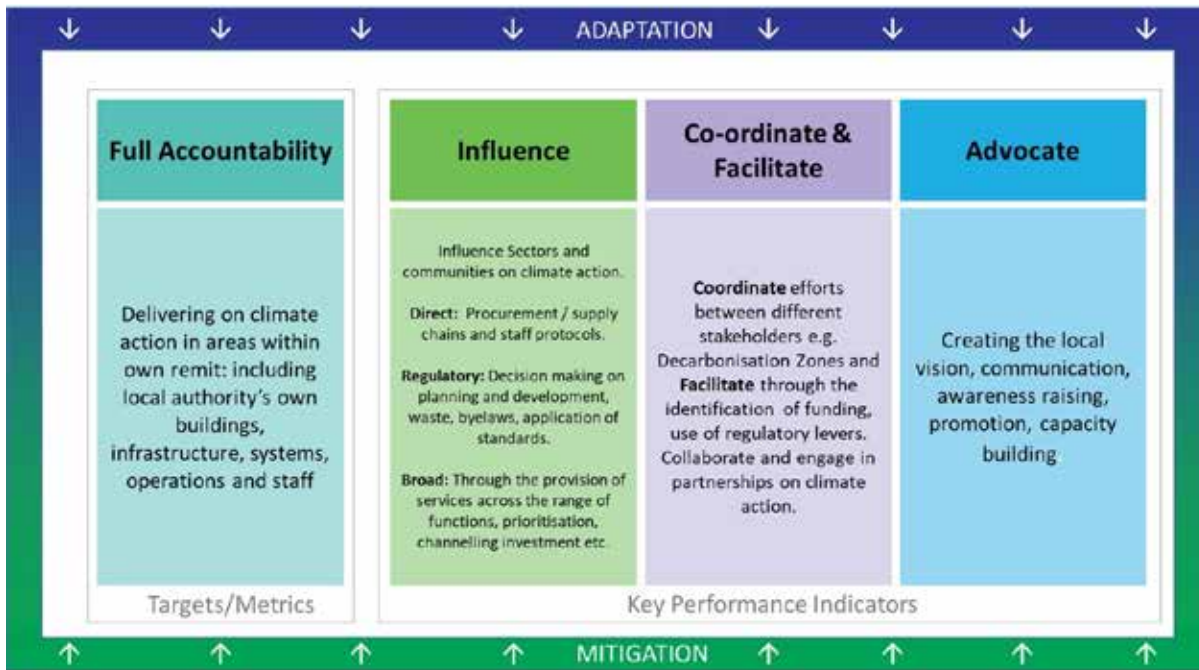


Fig. 1.4: Scope of Local Authority on Climate Action (Source: Local Authority Climate Action Plan Guidelines, 2023)

POTENTIAL ADDITIONAL BENEFITS OF CLIMATE ACTION



ECONOMIC

1. By adapting to climate change now, we can ensure that all future plans are climate-proofed and associated opportunities are maximised.
2. By transitioning to a low carbon economy, we will encourage the creation of additional job opportunities across a range of disciplines.
3. By using local solutions to mitigate and adapt to climate change, we can upskill our workers and generate employment.
4. By promoting improvements in energy efficiency, we will foster innovation in both the public and private sectors.
5. By using indigenous, sustainable sources for our energy needs, we can reduce our reliance on foreign fossil fuels.
6. By transitioning to a circular economy, we can stimulate innovation and create employment in the reuse and repair sector.
7. By becoming climate leaders, we are attractive to foreign direct investment from companies with a green corporate agenda.



HEALTH AND WELLBEING

Health co-benefits can occur from key climate change actions such as:

1. By encouraging cycling and walking, we can improve the health of our citizens.
2. By implementing nature-based solutions to combat climate risks, we can make the area a healthier and more desirable place to live and work.
3. By increasing energy efficiency and reducing the demand for fossil fuels, we will reduce greenhouse gas emissions and improve air quality in our area.
4. By implementing aesthetically pleasing mitigation and adaptation measures to combat climate risks we can improve the mental health of our citizens.


SOCIAL

1. By improving the energy efficiency of our social housing stock, we can reduce tenants' utility bills and lessen fuel poverty.
2. By protecting against climate risks, we can reduce Impacts on citizens, their properties, and our services.
3. By informing citizens on the impacts of climate change and possible solutions in their areas, we can create networks of climate-resilient neighbourhoods.
4. By implementing mitigation and adaptation actions, we can provide other opportunities for community benefits in terms of green spaces, and pedestrian and cycle routes.
5. By increasing the number of trees, additional shading and privacy can be provided.
6. By supporting community initiatives and working together we can build a greater sense of social cohesion.


ENVIRONMENTAL

1. By using nature-based solutions to combat climate risks, we can increase the green infrastructure of the area and provide additional aesthetic value to our urban spaces.
2. By improving our public transport and cycling networks, we reduce congestion and pollution and improve air quality and reduce noise impacts.
3. By increasing resilience, we can protect our native flora and fauna.
4. By implementing mitigation and adaptation actions now, we lessen the potential impacts on the environment in the future.
5. By using nature-based solutions with, or instead of, hard engineering, we can reduce the associated costs of climate action, while increasing biodiversity.
6. By providing networks of natural wildlife corridors through the urban environment we will help animal and plant species migrate through the changing landscape.
7. By transitioning to a circular economy, we will reduce plastic pollution and use fewer natural resources.

Fig 1.5: Potential co-benefits of Climate Action (Source South Dublin County Council)

1.4 Plan Making Process and Structure

The preparation of the draft Climate Action Plan has been carried out in accordance with the 'Local Authority Climate Action Plan Guidelines' and has taken into full consideration international and national climate change policy and legislation, as well as the most up-to-date knowledge on current levels of climate change and its impacts and projections for the future. The Plan is presented in 4 main parts:

- **The Evidence Base** (Section 3) Used to inform climate action Limerick, including the baseline emissions profile and the climate change risk assessment for the county.
- **Framework of Climate Actions** (Section 4). Outlines its framework for climate action across 5 action areas. It also includes the Plan Vision, Mission, Strategic Goals, Objectives, and Actions.
- **Limerick Decarbonising Zone** (Section 5) focuses on Georgian core and proposed Colbert Quarter as the Decarbonising Zone (DZ) including the Vision for the spatial area, Strategic Priority Areas and Actions.
- **Implementation** (Section 6) The Council's approach to implementing actions and measuring progress, as well as how the Council will report on actions over the lifetime of the Plan.

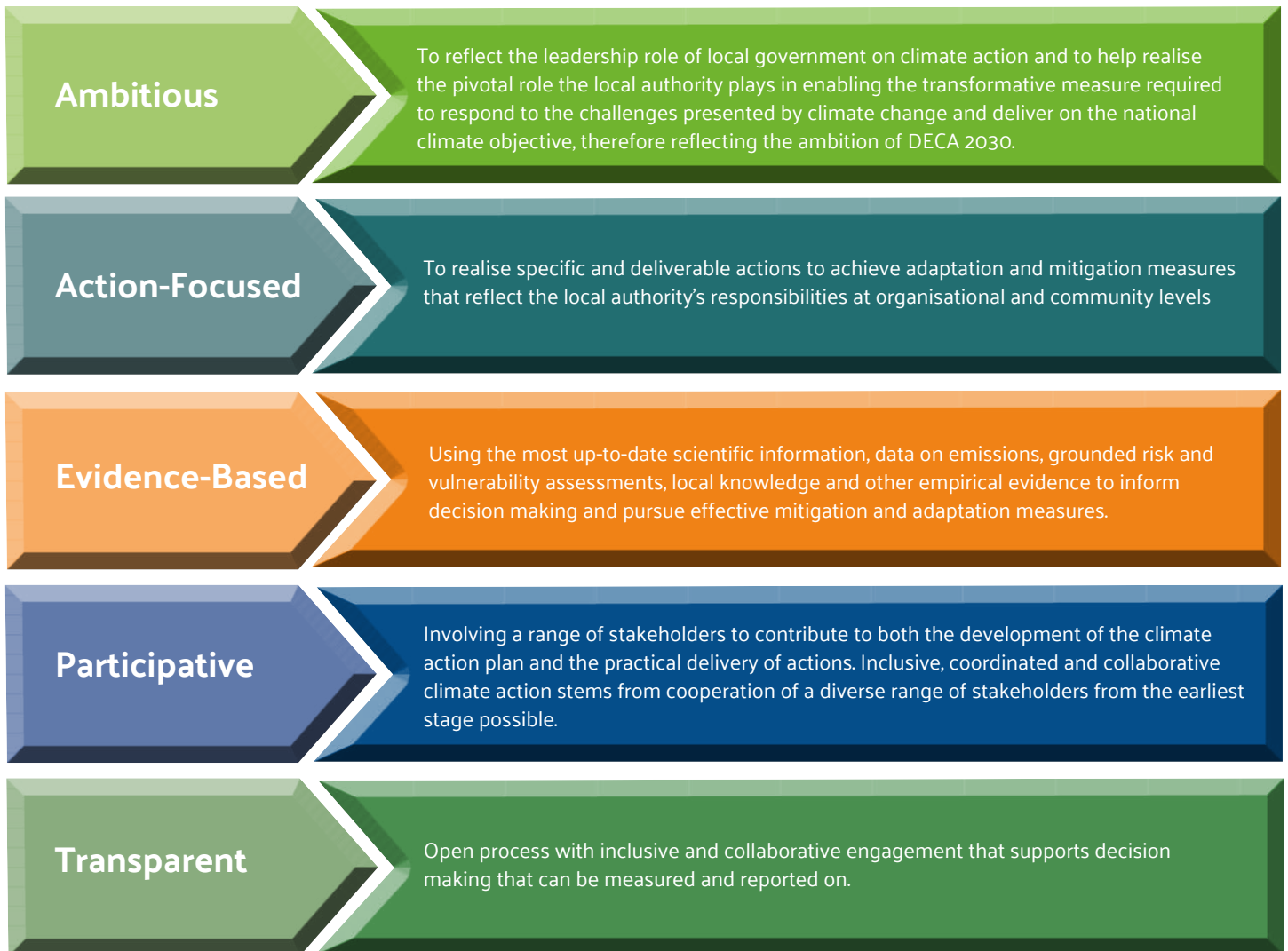


Fig 1.6 : Guiding Principles of the Local Authority Climate Action

1.5 Environmental Assessments

The Draft Climate Action Plan 2024-2029 was required to be assessed under specific environmental legislation. Recommendations and mitigation measures made through the assessment processes outlined below are incorporated into this draft plan and will be undertaken as part of implementation of the adopted plan.

1.5.1 Strategic Environmental Assessment

Environmental assessment is a procedure that ensures that the environmental implications of decisions are considered before such decisions are made. Strategic Environmental Assessment (SEA) is the term which has been given to the environmental assessment of plans and programmes, which help determine the nature and location of individual projects taking place. SEA is a systematic process of predicting and evaluating the likely significant environmental effects of implementing a proposed plan or programme, in order to ensure that these effects are adequately addressed at the earliest stages of decision-making, in tandem with economic, social and other considerations. The SEA process was integrated into the preparation of the Limerick City and County Council Draft Climate Action Plan. This is in accordance with the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. 435 of 2004 as amended by S.I. 200 of 2011). The SEA Environmental Report is contained as a separate document accompanying the Draft Climate Action Plan 2024-2029.

1.5.2 Appropriate Assessment

In accordance with requirements under EU Habitats Directive (92/43/EEC), the EU Birds Directive (79/409/ EEC) the potential effects of the Climate Action Plan on certain sites designated for the protection of nature under European legislation, must be assessed as part of the preparation of the Climate Action Plan. This process, known as Appropriate Assessment, is to determine whether or not the implementation of Draft Climate Action Plan could have negative consequences for the habitats or species for which these sites are designated. Appropriate Assessment was undertaken as part of the plan-making process and a Natura Impact Report is contained as a separate document accompanying the Draft Climate Action Plan 2024-2029.

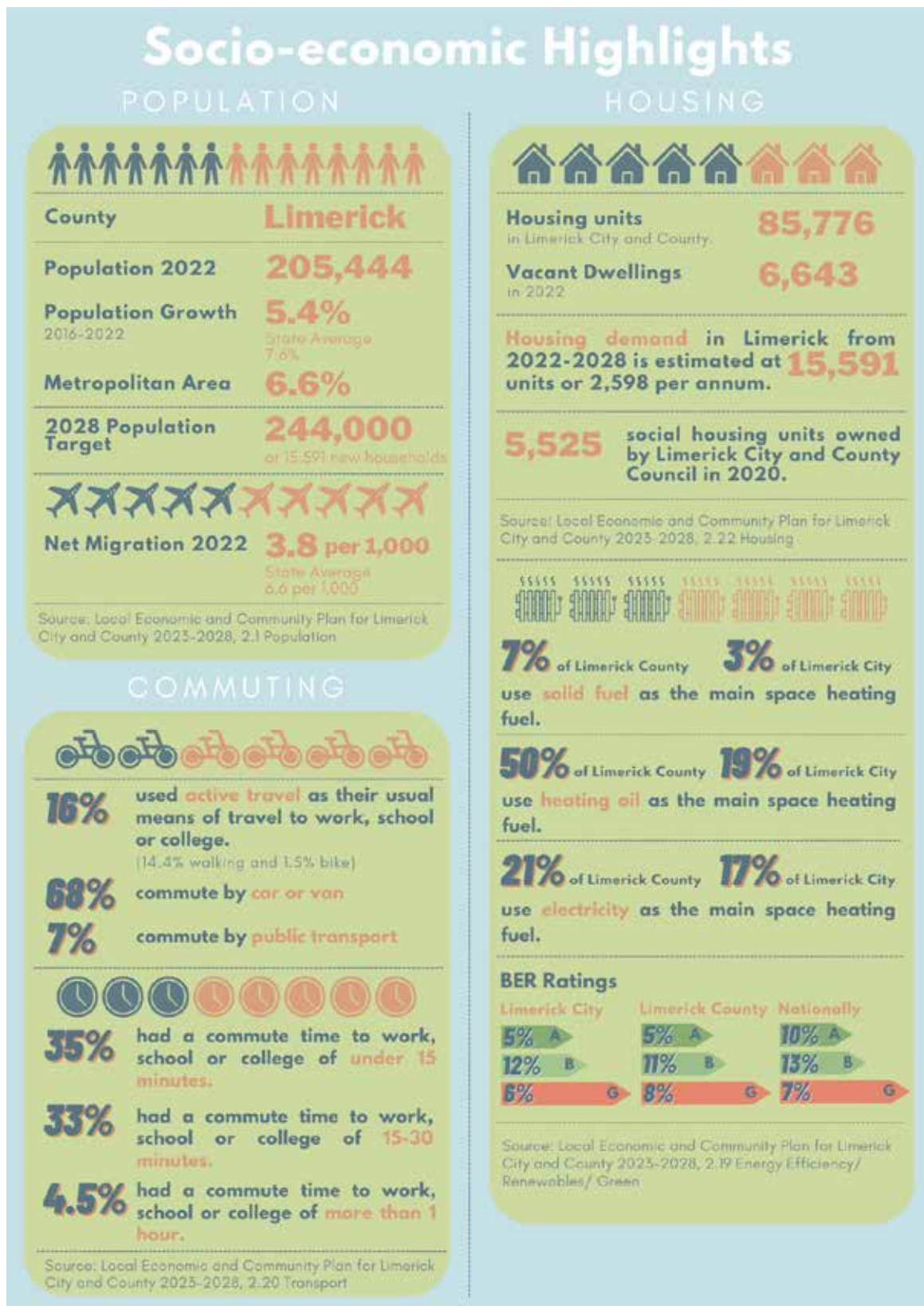
1.6 Public Engagement and Approval

The Draft Plan was put on public display from 22 December 2023 to 5th Feb 2024. All written submissions were summarised in the Chief Executives Report on the Draft Plan Public Consultation which were considered by the members at the Council meeting on 25 March 2024 when the Limerick Local Authority Climate Action Plan was approved.

2 POLICY AND CONTEXT

2.1 Profile of Limerick

The Climate Action Plan will be set out in a co-ordinate planned approach that addresses the specific challenges in Limerick. The Local Economic and Community Plan set out a detailed profile of the County. The Figure below sets out some of the key elements of that profile that will inform the preparation of the Climate Action Plan.



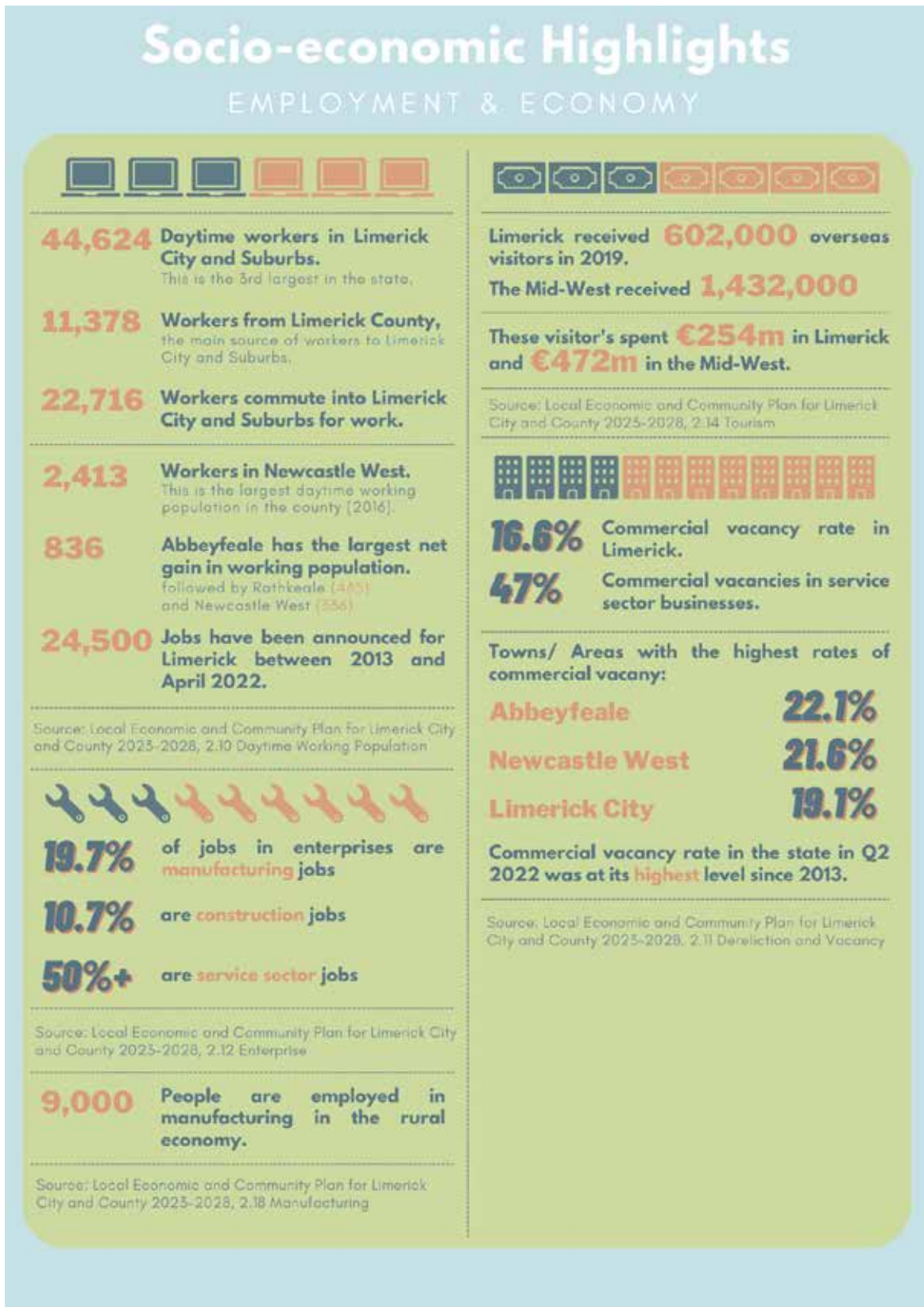


Fig 2.1: Profile of Limerick City and County Council (Source: Limerick City and County Council)

2.2 Overview of Climate Change

Climate change is increasingly understood to be the most critical, long-term global challenge of our time, its impacts continue to be felt both worldwide and at home. The Intergovernmental Panel on Climate Change (IPCC’s) Working Group I Sixth Assessment Report, confirms overwhelming evidence that the climate has changed since the pre-industrial era and that human activities, through greenhouse gas emissions, are the principal cause of that change. It states the unequivocal cause of global warming has been human activities, with global surface temperatures reaching 1.1°C above 1850-1900, in the 2011-2020 period.

Figure 2.2 compares the global temperature rise since 1900 to Irish temperatures. Ireland is in line with the global temperature increases, following 2022, being a year of record-breaking extremes, in both temperature and precipitation (rainfall). Met Éireann stated that 2022 was ‘the warmest year on record’. This would see Ireland’s temperature above the long-term average for the 12th consecutive year. Furthermore, 2022 saw record breaking temperatures observed in Ireland during the summer, recording the second highest temperature ever recorded in Ireland at 33°C.

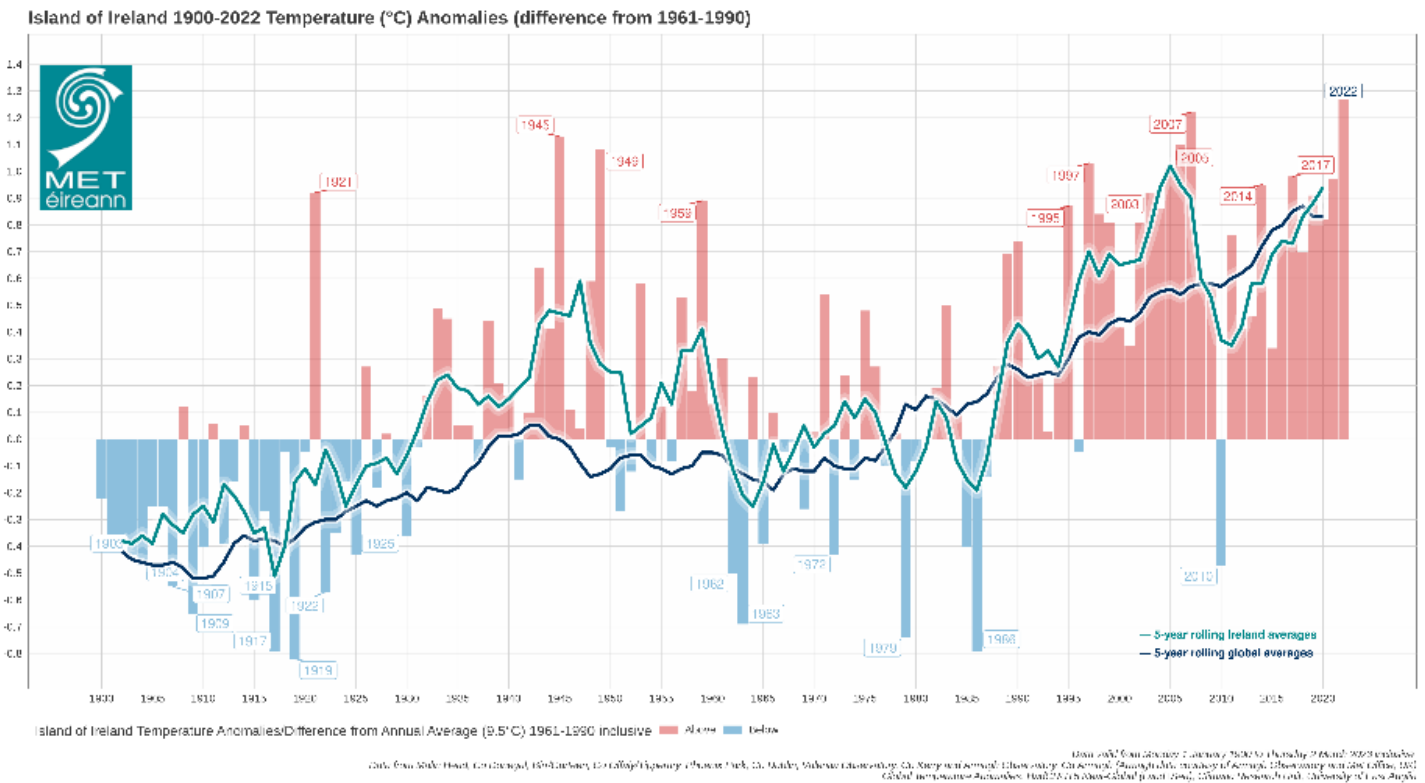


Fig 2.2: Island of Ireland 1900-2022 Temperature (°C) Anomalies (difference from 1961-1990) (Source: Met Éireann)

This is reiterated in the precipitation observations from 2022, where rainfall was recorded at below the long-term average at most stations. There was variability in rainfall throughout 2022, with extremes being felt in each of the seasons, resulting in a drier summer and spring, and a wetter autumn and winter.

Global mean sea level increased by 20 cm between 1901 and 2018. The trend in global mean sea level rise has been consistently rising since 1901. Ireland has so far seen a similar rise in sea level with an average of 2-3 mm per year. A warming climate has caused a rise in sea level, through the loss of sea ice and thermal expansion (the increase in the volume of water due to heating) resulting from the warming ocean.

Ireland has suffered from adverse climate impacts already and recent extreme weather events have highlighted the vulnerability of individuals, businesses, communities, sectors, and infrastructure to climate change, emphasising the need for urgency on climate action across all sectors of society.

For example, storms such as Arwen and Barra in 2021 most notably, left 59,000 homes and businesses without power (Climate Action Plan, 2023). The adverse impacts of climate change can often compound wider reaching social, environmental, and economic challenges. This can increase vulnerability and sensitivity to a changing climate and climate extremes.

Based on observed changes in climate and its impacts, Met Éireann, the Environmental Protection Agency (EPA) and other climate scientists, will be able to make robust projections on future climate patterns in Ireland and globally. The EPA, Marine Institute and Met Éireann published The Status of Ireland's Climate Report in July 2021. Future climate projections for Ireland can be summarised as follows:

- Climate projections indicate that the climate trends observed over the last century will continue and intensify over the coming decades;
- Temperatures are increasing and are expected to continue to increase and across all seasons;
- Significant reductions in levels of average precipitation (rainfall) are expected in Spring and Summer, whilst projections indicate the increased occurrence of extreme precipitation events, particularly during Winter;
- Projections show little change in average wind speed and direction. The frequency of extreme wind conditions are expected to increase, particularly during Winter;
- Increases in the frequency of fluvial (river) and pluvial (surface water) flooding;
- Increases in the frequency and intensity of summer heat waves, extreme temperatures and drought;
- Reductions in the frequency of frost and snowfall; and
- An increase in the duration of the growing season (phenological cycle).

The state of Ireland's climate today and how it may look in the future can be brought together in one simple conclusion. Ireland's climate has changed relative to the 1900's, it has undoubtedly warmed along with global temperatures, bringing about an array of impacts that are associated with a warmer climate and more extreme weather events.

2.3 Climate Policy Context

Climate action is driven by the scientific evidence of the human influence on climate change, and it is given momentum by the legally binding international treaty on climate change, which sets the framework for ambitious and strengthened policy responses - the Paris Agreement of 2015. Consequently, this Climate Action Plan is set within a broader context of international, EU, national and sectoral climate policy. This is represented in Figure 2.3.

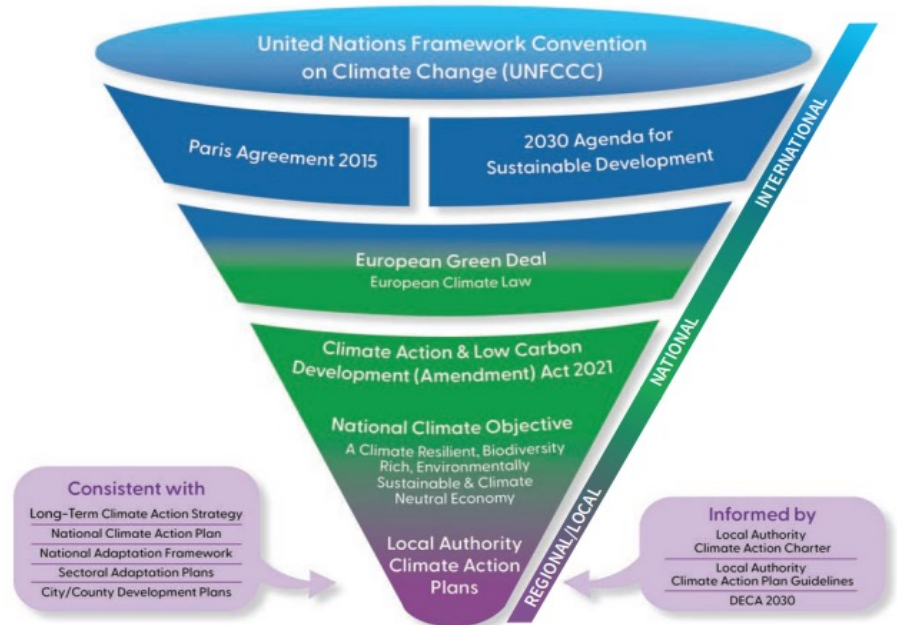


Fig 2.3: Legislation and Policy Context for the Climate Action Plan (Source: Climate Action Regional Offices)

2.4 International Climate Change Policy

It has been recognised that successfully tackling climate change requires cooperation and ambition on an international level. Since the establishment of the **United Nations Framework Convention on Climate Change (UNFCCC)** in 1994, countries have sought to build international cooperation to limit the increase in the average global temperature and deal with the impacts of climate change, that result from these temperature increases.

These efforts led to the signing of the **Paris Agreement 2015** at the Conference of the Parties 21 (COP21). The Paris Agreement 2015 is a legally binding international treaty on climate change which was signed by all 196 member countries, including Ireland, and entered into force on 4th November 2016. Through two clearly defined goals the Paris Agreement strives for progressive and ambitious climate action over time to avoid dangerous climate change by:

- I. Holding global average temperature increases to well below 2°C and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels; and
- II. Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience.

Another International agreement closely linked with the Paris Agreement is the **2030 Agenda for Sustainable Development**, which was adopted by UN Member States in September 2015. At the Agenda's core are 17 **Sustainable Development Goals (SDGs)**. These goals aim to "end poverty, protect the planet and improve the lives and prospects of everyone, everywhere." The 17 SDGs contain 169 targets to be achieved by 2030. In 2019, World leaders called for a 'decade of action' to achieve the Goals within this timeframe. The SDGs are also addressed in Section 6 of this Plan.

Towards achieving greenhouse gas emission reductions as part of Paris Agreement commitments the European Commission, in December 2019, announced the **European Green Deal** aimed at making Europe the first climate neutral continent. The Deal seeks to achieve no net emissions of greenhouse gases by 2050, to decouple economic growth from resource use, and to leave no one behind. The EU introduced a set of proposals to align the EU's climate, taxation, energy, and transport policies to support achieving this aim. The **European Climate Law** made these targets legally binding, which also includes achieving a reduction in net greenhouse gas emissions of at least 55% by 2030.

2.5 Climate Change Policy in Ireland

Climate change policy in Ireland now reflects the ambition of the EU and that required to confront the challenges of climate change.

The Climate Action & Low Carbon Development (Amendment) Act 2021[9], enacted on 23 July 2021, requires the State to achieve by no later than 2050, the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy. This is also known as the National Climate Objective.

To achieve this Objective, the Minister for the Environment, Climate and Communications will regularly submit carbon budgets, sectoral emission ceilings, a National Climate Action Plan, a Long-Term Climate Action Strategy, and a National Adaptation Framework, for Government approval.

The first two carbon budgets, proposed by the Climate Change Advisory Council (CCAC), are set in order to achieve a 51% reduction in greenhouse gas emissions by the end of 2030, using 2018 as the baseline year.

Through these national measures, a suite of strategies to promote adaptation and mitigation measures, and robust oversight and reporting arrangements, climate policy is working to scale up efforts across all of society. This will deliver a step change on ambitious and transformative climate action to 2030 and beyond to 2050

The Climate Action Plan 2023, launched on 21st December 2022, is the second annual update to the States' Climate Action Plan 2019 and the first to be prepared under the Climate Action and Low Carbon Development (Amendment) Act 2021, and following the introduction, in 2022, of economy-wide carbon budgets and sectoral emission ceilings. Climate Action Plan 2023 sets out a roadmap to 2025 towards taking decisive action to halve emissions by 2030 and reach net zero, no later than by the end of 2050, as committed to in the Programme for Government.

Ireland published its first **National Adaptation Framework (NAF)** in 2018, which set out the context to ensure key sectors and local authorities, can assess the key risks and vulnerabilities of climate change, implement climate resilient actions, and ensure climate adaptation considerations are mainstreamed into national, regional and local policy making.

Ireland's current **Long-term Strategy on Greenhouse Gas Emissions Reductions** sets out indicative pathways, beyond 2030, towards achieving carbon neutrality for Ireland by 2050. The Strategy builds upon the decarbonisation pathways set by the carbon budgets, sectoral emissions ceilings, and the national Climate Action Plan, to ensure coherent and effective climate policy. It is underpinned by analysis of transition options across each key sector of the economy and provides a crucial link between Ireland's 2030 climate targets and the long-term goal set by Ireland's National Climate Objective and the European Climate Law.

Sectoral Climate Adaptation Plans have been published across Government departments, in response to the National Adaptation Framework. Each Plan identifies the key risks faced across the sector and the approach being taken to address these risks and build climate resilience for the future. They were developed applying a six-step adaptation planning process described in Sectoral Planning Guidelines for Climate Change Adaptation, published by the Department of the Environment, Climate and Communications. The Plans address the following sectors: Agriculture, Forestry and Seafood, Biodiversity, Built and Archaeological Heritage, Transport infrastructure, Electricity and Gas Networks, Communications Networks, Flood Risk Management, Water Quality and Water Services Infrastructure and Health.

The Local Authority Climate Action Charter, signed by Limerick City and County Council in October 2019, represents a commitment to scale up efforts and play a key role locally and nationally in delivering effective climate action. It tasks all local authorities with providing robust leadership in advancing climate action at regional and local levels, with adhering to the UN SDGs, in particular Goal 13 Climate Action, as well as reducing emissions from their own operations and to collaborate and partner with local enterprise, community groups, citizens as well as public, private, and educational sectors on climate action initiatives.

Delivering Effective Climate Action 2030 (DECA 2030) is the local government strategy on climate action published in April 2021. The strategy represents an overarching sectoral commitment to ensuring a coherent approach to climate action across the administrative and political structures of all 31 local authorities. At a sectoral level, the strategy communicates a general intent through an envisaged leadership position, to engage the local authority network in effective climate action. Within the sector, the overall strategy represents a top-level consensus on the approach to climate action and a strong commitment to the prescribed leadership role. The strategy is a stated roadmap for local authorities in delivering the required decarbonisation and adaptation responses to climate change

2.6 National Dialogue on Climate Action

In 2022, the Council continued to support citizen and stakeholder engagement initiatives, including the Government's National Dialogue on Climate Action (NDCA), local 'Climate Conversations' led by the Public Participation Network (PPN). The Climate Acts 2015-2021 recognise the Public Participation Networks as a key network to consult regarding climate action and the Council will engage with the PPN in the public consultation of the Climate Action Plan.

Cumulatively, evidence from the 2022 NDCA programme suggests that there is a high level of awareness of climate change among the Irish people, and they want to get involved in climate action. The findings of the 2022 engagement programme have also shown that there is a willingness to engage in climate action, but people may not know which

actions are most effective or where to start acting. Further enabling citizen and stakeholder engagement can make it possible to realise the opportunities that a transition to a carbon-neutral society and economy presents, such as new sustainable careers, warmer more energy-efficient homes, better travel options, more sustainable consumer choice, integrated spatial planning, cleaner air and water and a better environment for future generations.

Figure 2.4 summarises some of the needs of participants in online ‘Climate Conversations’, as part of the National Climate Dialogue. It clearly shows that we as a local authority have an important role in enabling citizens to engage in climate action, through the services we provide.

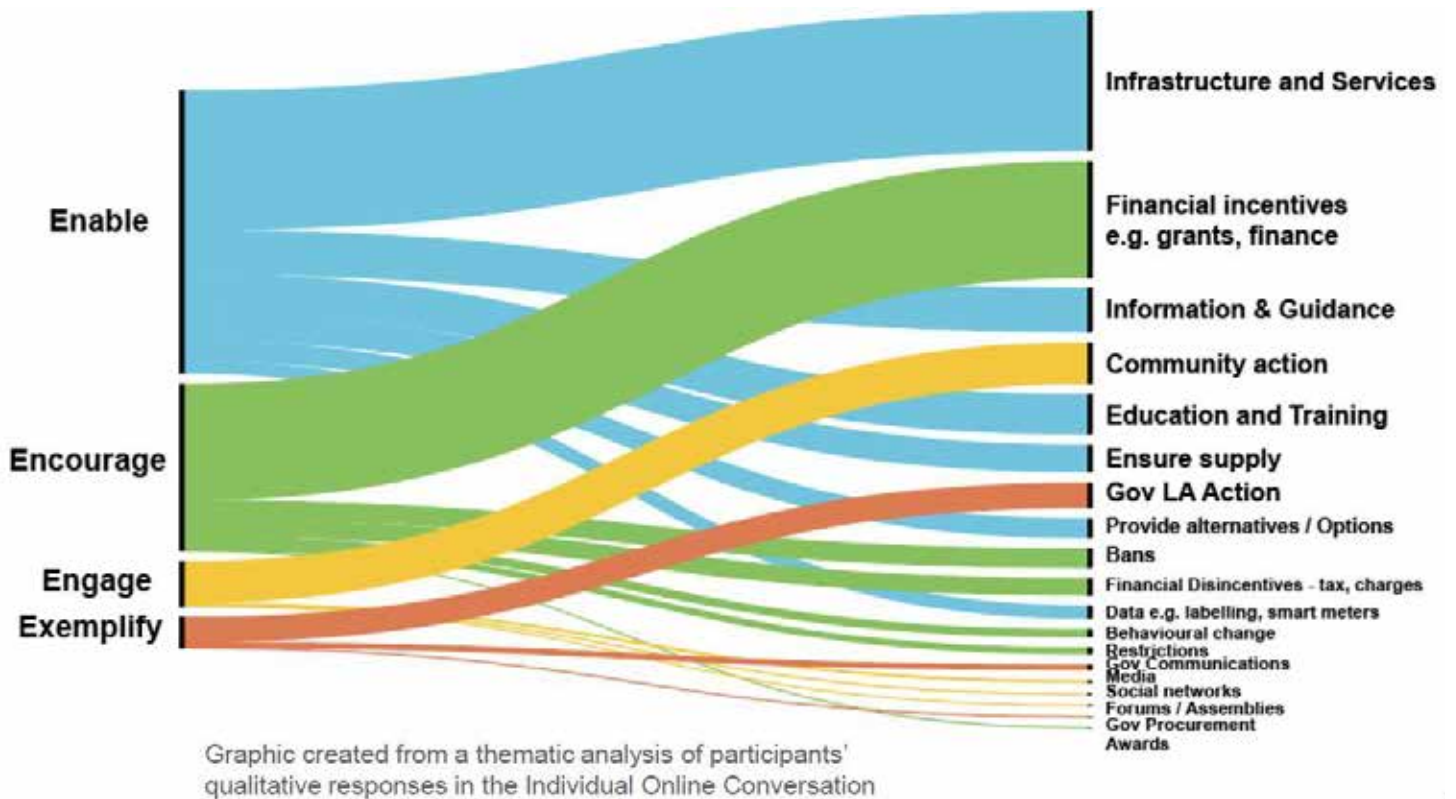


Fig 2.4: Summary of findings of the ‘Climate Conversations’ online responses (Source: Department of the Environment, Climate & Communications/MCo)

3 THE EVIDENCE BASE FOR CLIMATE ACTION

The National Climate Action Plan (CAP 23) reaffirms emissions pathways for Ireland, which were previously set out in the Climate Action and Low Carbon Development (Amendment) Act 2021 - to halve Ireland's greenhouse gas (GHG) emissions by 2030 and achieve net zero by 2050. Relevant targets include:

- Local authorities must improve their energy efficiency by 50% by 2030, as first set out in the Local Authority Climate Action Charter, in comparison with a baseline of 2009 (or earlier).
- Local authorities must also reduce their heating and transport emissions by 51% by 2030, in comparison to a 2016 - 2018 baseline.
- Nationally, we must reduce GHG emissions overall by 51% by 2030, in comparison to a 2016 - 2018 baseline, and achieve climate neutrality by 2050 - local authorities are obligated by the Climate Action and Low Carbon Development (Amendment) Act 2021 to produce plans consistent with this target

Limerick City and County Council (LCCC) is responsible for the energy use and emissions from its buildings and facilities, its public lighting, its fleet of vehicles, and more. This section highlights LCCC's energy use and the progress LCCC has made in improving energy efficiency, using the most recently available data. The information from the Sustainable Energy Authority of Ireland's (SEAI) Monitoring and Reporting (M&R) database shows that LCCC had a total final energy consumption of 26,534,526 kWh

3.1 Limerick City and County Council's Emissions

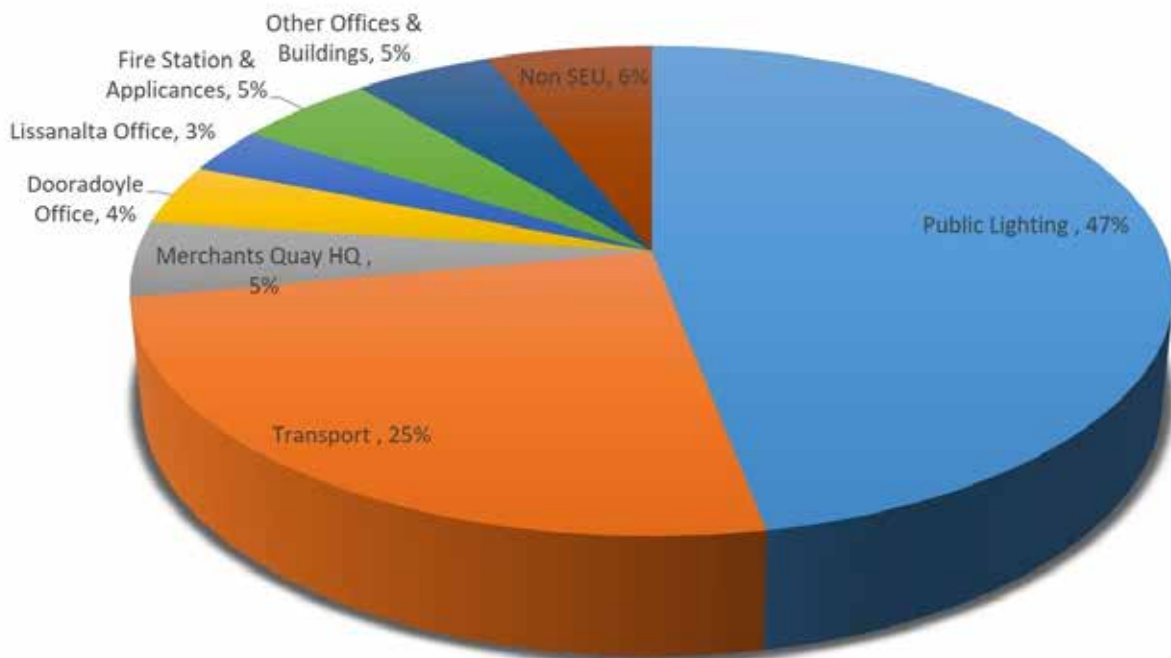


Fig 3.1: LCCC ENERGY PROFILE 2022 (Source LCCC)

3.1.1 Gap to Target

The gap-to-target model (GTT model) is a spreadsheet model used by public bodies to evaluate their energy-related GHG emissions over time, in accordance with SEAI's public sector energy monitoring and reporting framework for the period to 2030. The gap to target tool has estimated that a reduction of 1,634 TCO₂ is required by 2030. Substantial progress has been made over the last number of years on reducing electrical consumption across the Councils activities with a 45% reduction being obtained since 2018. However transportation emissions has seen a significant increase.

3.1.2 Priority Areas for Reduction of Limerick City and County Council's own Emissions

The key areas for LCCC to take action to reduce its own emissions are:

- Retrofit of the Council's own buildings and facilities, to include renewable energy, and renewable heating systems, etc. to decarbonise the buildings and facilities and reduce energy consumption.
- Decarbonisation of the Council's fleet.
- Retrofitting of public lighting to LED. This will substantially reduce overall electrical demand.

Decarbonisation of the electricity grid is expected to significantly reduce LCCC's electricity related emissions. However, as we transition to electrification of the fleet and of our thermal systems there will be increased consumption of electricity.

The priority focus for LCCC therefore is on their own direct emissions, which includes emissions from transport and heat (thermal).

3.1.2.1 Retrofit and Renewable Heating Systems in LCCC's own buildings and facilities

Building upgrades present better cost effectiveness of emissions reduction (€/tonne CO₂) than fleet decarbonisation and therefore are recommended for prioritisation. Building energy upgrades alone may potentially allow LCCC to exceed its targets.

Buildings have begun to be evaluated and prioritised for action on a range of criteria, including total emissions reduction potential, and cost effectiveness of emissions reduction (€/tonne CO₂). The types of actions being considered for Council buildings include:

- Suitability evaluation of buildings for upgrades - Energy Audits of the Significant Energy Users (SEUs)
- Solar Panels
- Lighting upgrades
- Heat Pump installation
- Building fabric upgrades
- Building energy management system upgrades

This work will be carried out using energy performance-based contracts, where possible, which will ensure long-term, guaranteed energy savings and will make the projects more financially viable for LCCC.

The highest priority LCCC buildings and facilities for this work, based on emissions reduction potential, are:

- City Hall
- County Hall
- Lisnalta House
- Fire Stations

3.1.2.2 Decarbonisation of Limerick City and County Council's Fleet

LCCC need to develop a strategy for the decarbonisation of its fleet of vehicles. This will involve a review of the fleet and developed a Decarbonisation Strategy over both a 5-year and 10-year period. This will involve the transition of the fleet to EV together with the use of alternative fuel sources such as HVO.

The building and fleet decarbonisation projects identified above, along with a pipeline of smaller building projects will allow LCCC to meet the 2030 direct emissions target.

3.2 Emissions Profile of County Limerick

Ireland has committed to reduce its emissions by a minimum of 51% by the year 2030. The 2030 target corresponds to a 51% reduction from 2018 figures, as defined by the Programme for Government (2020) [18], which states that Ireland is 'committed to an average 7% per annum reduction in overall greenhouse gas (GHG) emissions from 2018 to 2030 (a 51% reduction over the decade)'.

The overall emissions for County Limerick have been calculated for the baseline year of 2018. This Baseline Emissions Inventory (BEI) uses data from the 2016 census, and additional data collected from the Mapeire project, to make an estimation of the baseline emissions for County Limerick 2018, as shown in Figure 3.2 below. Total emissions are estimated to be tonnes of Carbon Dioxide equivalent (tCO₂e). (CO₂e refers to the quantification of multiple GHGs in an equivalent amount of CO₂. If the quantity of GHGs other than CO₂ is significant for a specific sector, then they are converted to CO₂e. If they are insignificant, then only CO₂ is considered. In mathematical terms, CO₂ = CO₂e).

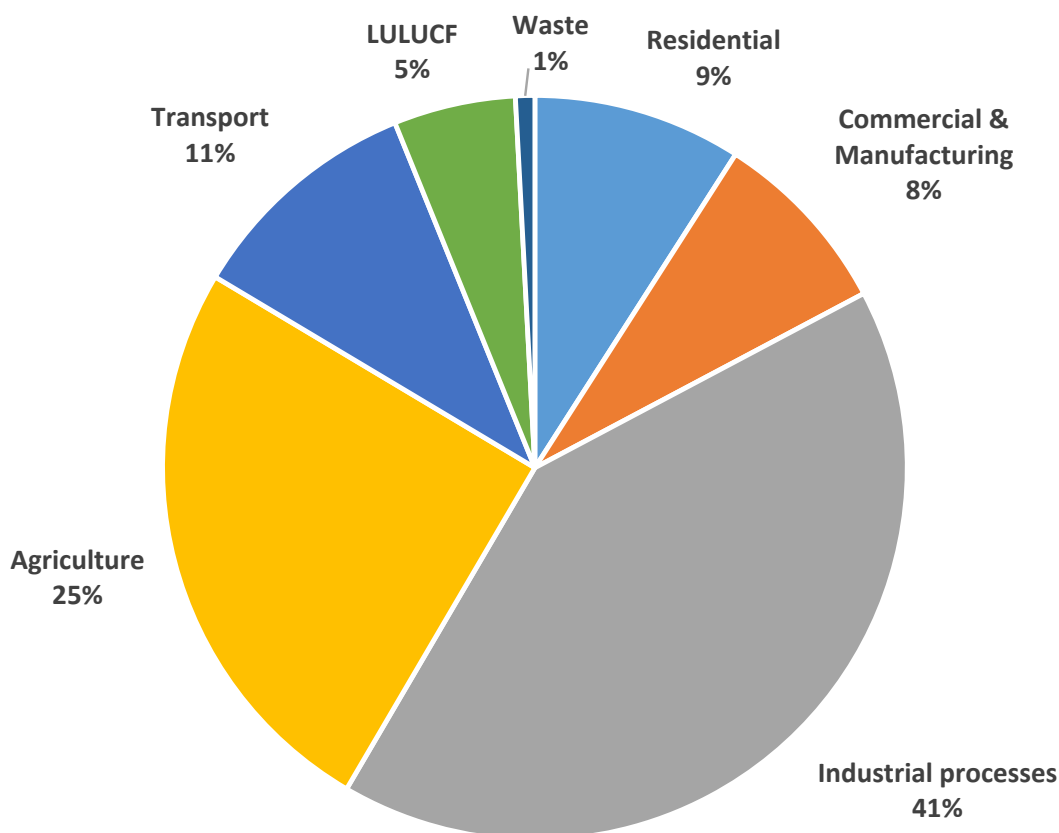


Fig 3.2: Share of emission in Limerick by sector (Source LCCC)

Sector	Total carbon emissions (tCO ² e)
Residential	434,519
Commercial & Manufacturing	391,858
Industrial processes	1,974,124
Agriculture	1,204,097
Transport	493,548
LULUCF	253,854
Waste	40,155
TOTAL	4,357,636

Fig 3.3: Total carbon emissions by Sector (Source LCCC)

3.2.1 Emissions Reduction Pathway for County Limerick

Based on the profile below the following strategic priorities are identified:

Decarbonisation of heat

- District heating has the potential to supply heat across Limerick City.
- Heat pumps have the potential to supply heat to a large number of properties.

Buildings

- Support is needed for building energy retrofits.
- Areas most at risk of energy poverty across Limerick should be prioritised for building energy retrofits.
- Additional measures are required to support the retrofitting of the substantial historic building stock in Limerick.
- The opportunity for building-integrated solar in Limerick is significant. Developing strategies to support this will accelerate the uptake of the technology.
- Develop increased linkages between energy and local level spatial planning – local level energy planning can identify solutions not visible at a national level.

Renewable electricity

- The potential to develop significant renewable energy through the development of offshore wind has been identified by Government. The potential economic benefits of implementing such a strategy were highlighted in the Shannon Estuary Taskforce Plan. This will require significant upgrades to the electricity transmission and distribution systems across the region.
- The development of enabling electricity infrastructure needs to be supported to maximise Limerick's potential to generate renewable energy.
- Significant electricity consumers, such as data centres and other large industrial sites, should maximise on-site renewable generation and ensure any remaining demand is supplied through renewable Power Purchase Agreements (preferably those which match hourly site demand), which finance renewable electricity projects within Ireland or its territorial waters.
- Community Grids and Renewable Energy Communities will offer communities to develop local / community scale initiatives that can reduce the demand on the network's infrastructure.

Transport

- Active travel and public transport solutions should be prioritised, including consideration of reallocation of road space to these modes of travel, and accessibility.
- The '15 Minute Neighbourhoods' concept is a key priority to address carbon emissions, congestion and air quality issues in Limerick.
- Support for electric vehicle infrastructure.

Agriculture

- There is potential to create sustainable bio methane to decarbonise the heating infrastructure.
- Support diversification of the sector to low emission land uses.

3.3 Climate Change Risk Assessment for Limerick

Climate change will impact Limerick in many ways, from damaging road infrastructure and uncontrolled fires to detrimental impacts on biodiversity, restrictions on water supply, and increased risk of flooding. These bring substantial implications for LCCC. This section provides an assessment of climate change risks and impacts for Limerick, and the consequences of these for the delivery of services by LCCC.

3.3.1 Purpose and Methodology of Climate Change Risk Assessment

Responding to potential impacts involves taking adaptation actions to reduce the adverse risks posed by current and projected climate change. Climate change risk assessments identify the likelihood of future climate hazards and their potential impacts. Understanding these hazards and impacts is fundamental for informing the prioritisation of, and investment in, climate action.

A qualitative Climate Change Risk Assessment (CCRA) was undertaken by KPMG on behalf of LCCC, in accordance with Technical Annex B Climate Change Risk Assessment of the Local Authorities Climate Action Plan Guidelines. The Technical Annex B provides a stepped approach to carrying out a climate change risk assessment:

1. Assess the climate impact baseline, identifying, assessing and characterising the climate and weather-related impacts already being experienced by the authority, and
2. Identify and assess potential future climate impacts and risks.

A qualitative assessment is developed based on readily available information and provides for a screening of climate change related hazards and risks. This type of assessment helps to:

- Identify the full range of climate-related risks.
- Communicate identified risks to relevant stakeholders.
- Prioritise risks for further detailed analysis.
- Provide a broad understanding of where adaptation actions could be required.

In assessing climate change risk for LCCC, the risk assessment framework of the Intergovernmental Panel on Climate Change (IPCC) has been adopted. This framework identifies three key components of climate risk: hazard, exposure, and vulnerability.

- **Hazard:** potential source of climate-related harm, i.e. damage or loss of property.
- **Exposure:** presence of people, livelihoods, environmental services and resources, infrastructure, or economic and social or cultural assets in places that could be adversely affected.
- **Vulnerability:** propensity / disposition to be adversely affected.
- **Risk:** the potential for adverse consequences.

In assessing climate change risk, climate information was derived from Nolan and Flanagan (2020) and Climate Ireland for two climate scenarios, RCP4.5 and RCP8.5.

- RCP4.5 represents an ‘intermediate emissions’ scenario with an average global warming of 1.4°C for the 2046-2065 period.
- RCP8.5 represents a ‘very high emissions’ scenario with an average global warming of 2°C for the 2046-2065 period.

Different social and economic developments can lead to substantially different future emissions of carbon dioxide and other greenhouse gases resulting in uncertainty in what the future global climate will be. As a result of this uncertainty, climate projections include a range of scenarios, with SSP5-8.5 (AR6) or RCP8.5 (AR5) being the highest emission scenario and therefore the greatest change in future climate. When assessing climate risks with a qualitative approach, it is best practice to take a conservative or ‘worst case scenario’ to ensure that climate risks are not underestimated and dismissed as low or no risk.

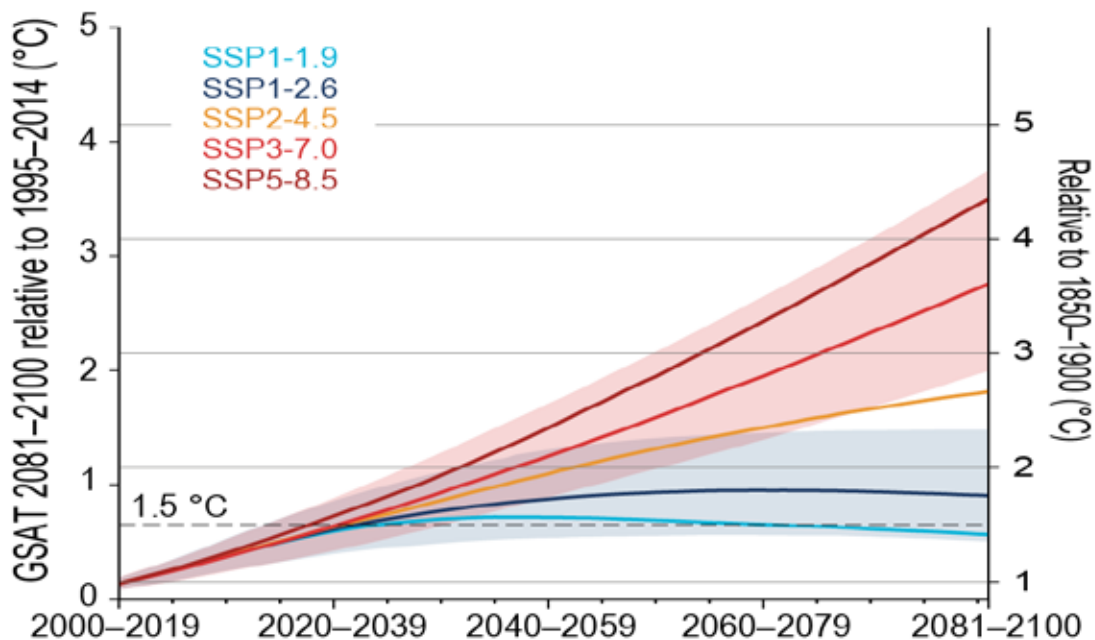


Fig 3.4: Assessed projected change in mean global surface temperature for five future climate scenarios. Future global temperatures can vary from below 1.5°C to over 4°C by 2100 depending on the amount of future emissions (Source: IPCC AR6 Cross-Chapter Box TS.1, Figure 1).

3.3.2 Limerick's Changing Climate

To assess changes in climatic conditions across Limerick City and County, we have employed data from Met Éireann's network of meteorological and climatological stations. To establish a long-term climatology, a 30-year period of data is required. Due to no dedicated long-term weather station being located in County Limerick, the climatological station at Shannon Airport was used for long-term baseline assessments. In line with global trends, the climate of Ireland and Limerick is changing, temperatures are increasing and patterns of precipitation are changing. A summary of key climate and weather-related changes already observed for County Limerick are detailed below.

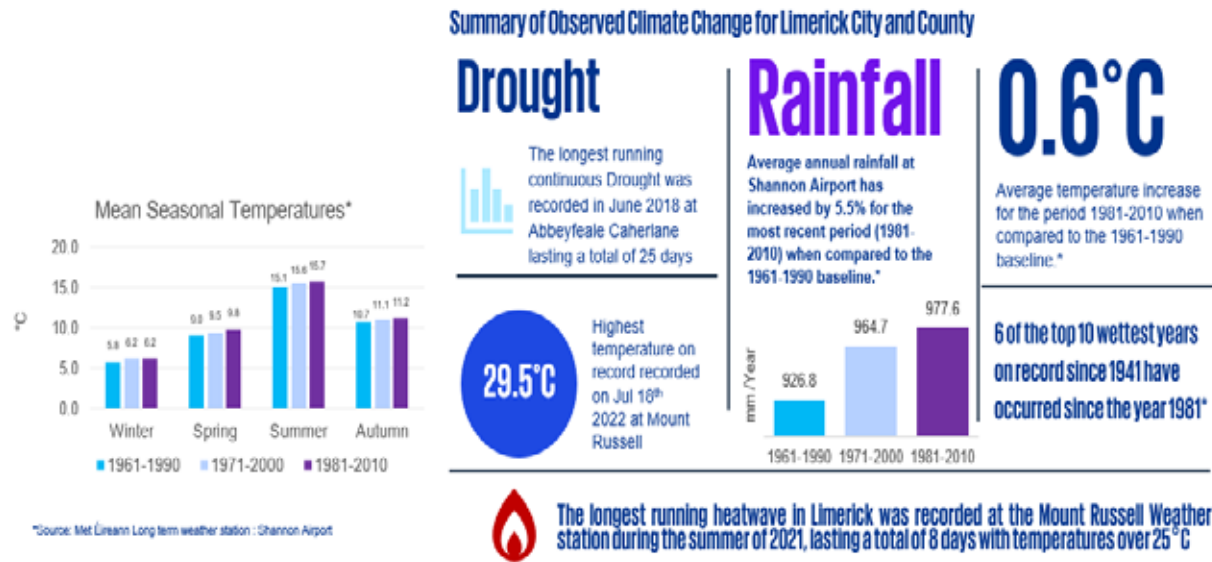


Fig 3.5: Summary of Observed Climate Change in Limerick

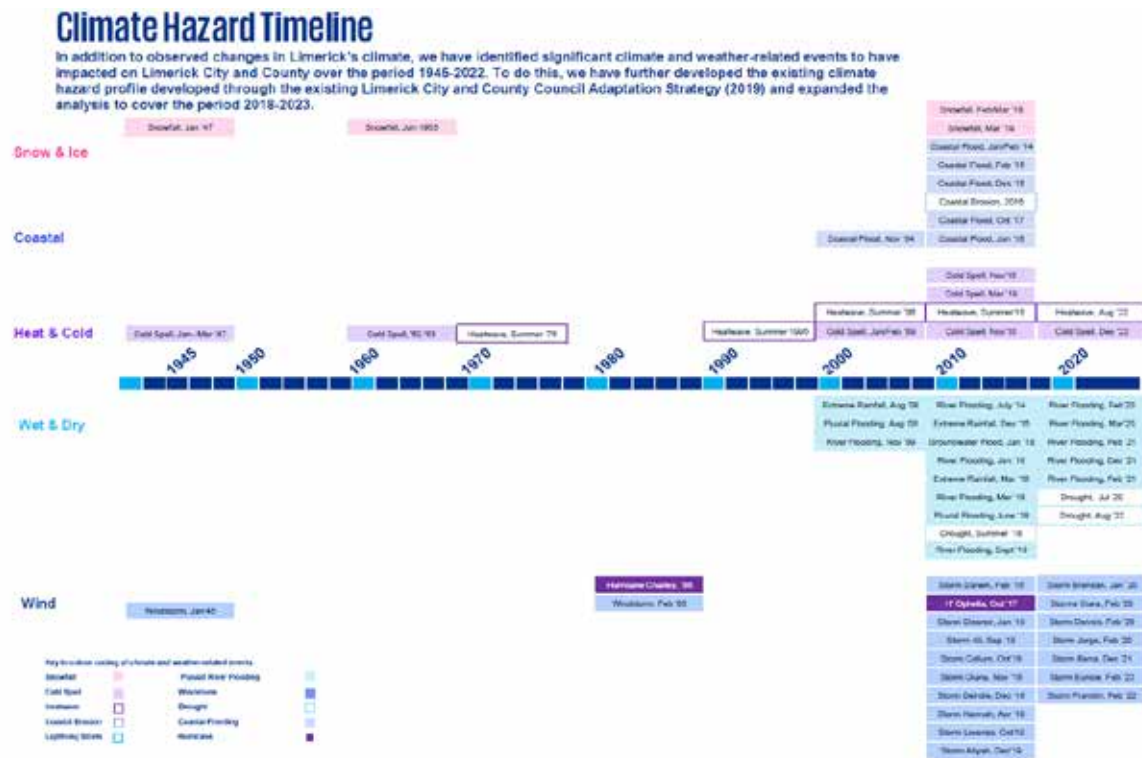


Fig3.6: Chronology of Severe Climate event in Limerick

In addition to observed changes in Limerick's climate, we have identified significant climate and weather-related events to have impacted on Limerick City and County over the period 1945-2022. To do this, we have further developed the existing climate hazard profile developed through the existing Limerick City and County Council Adaptation Strategy (2019) and expanded the analysis to cover the period 2018-2023.

Based on the climate hazard baseline, severe windstorm events have impacted upon Limerick City and County most frequently over the period 1945-2022, with coastal flooding, river flooding, pluvial flooding and heatwaves affecting the County on a number of occasions. Coastal erosion, cold spells, droughts, heavy snowfall, and groundwater flooding have also impacted Limerick City and County, but less frequently. The baseline information was used to examine the service level impacts on the delivery of services by the Council (available in the full CCRA report) and a current climate risk matrix was then developed based on the frequency of hazard and the associated level of impact already seen in Limerick (see Fig 3.7 below).

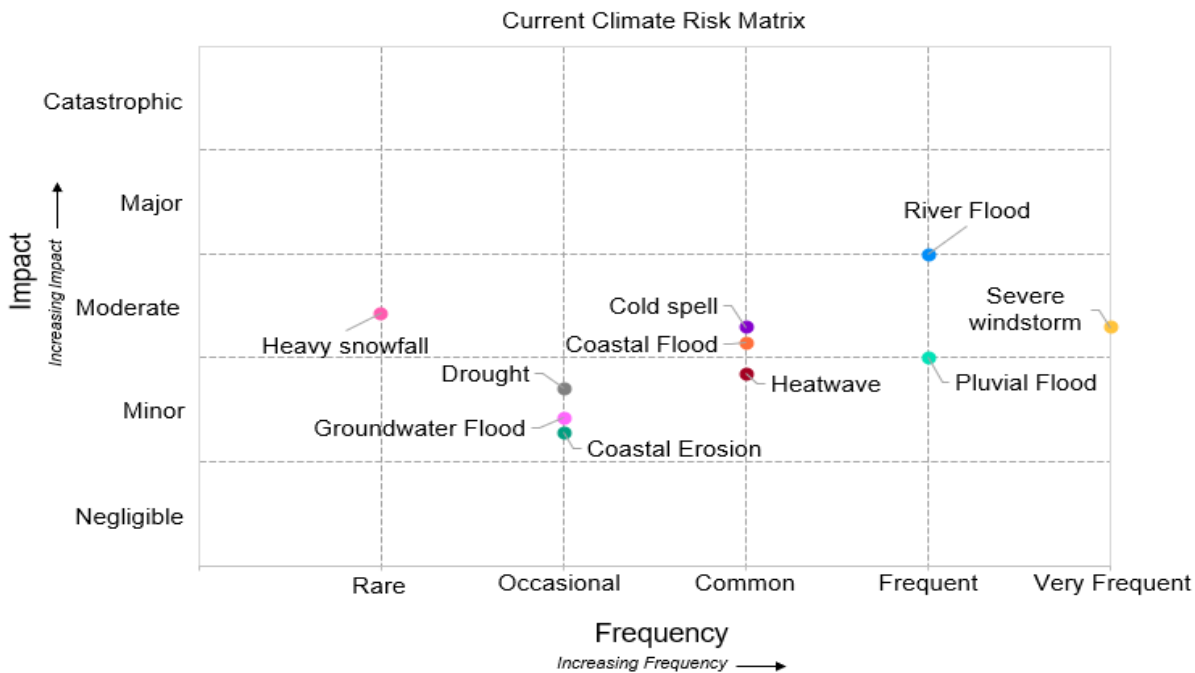


Fig 3.7: Current Climate Risk Matrix

3.3.3 Projected Climate Change for Limerick

Having identified and assessed the range of climate hazards and impacts already experienced by Limerick City and County, the projected changes in the frequency and intensity of climate hazards (acute and chronic) were assessed to understand how existing climate impacts and risks faced by Limerick City and County may change in the future. The information set out in the table below summarises the climate projections for each hazard (based on ‘Nolan and Flanagan’)

Hazard	Projected Change	Future Frequency
Heatwaves	Projections indicate an overall increase in average temperature (bottom left) of between 1.4 and 1.5°C for Limerick County relative to the 1981-2000 period.	Frequent ↑
Droughts	Under a high emission scenario, projections indicate that heatwaves will become more frequent (bottom middle) by mid-century. Summer rainfall is expected to reduce in the future when compared with the baseline period of 1981 to 2000, contributing to potential drought conditions.	Common ↑
Cold Spell	As a consequence of the increasing temperatures, a decrease in the number of frost days and ice days in the 2041-2060 future period when compared with the baseline period of 1981 to 2000.	Occasional ↓
Heavy Snowfall	The annual snowfall in the region is projected to decrease substantially by the middle of the century (bottom right).	Rare ↓
Severe Windstorms	Projections of storms are subject to a high level of uncertainty. By mid century, projections indicate that average wind speed will remain similar to those currently experienced. There is limited evidence of a potential increase in the frequency of more intense storms which are currently rare events. However, more research is needed to confirm this increase.	Very Frequent ↓
Coastal Flood	Sea level projections under a high emissions scenario indicate an increase of up to 0.26 m by 2050 which will increase the frequency of coastal inundation (bottom left).	Frequent ↑
Coastal Erosion	A rising sea level is strongly linked with coastal erosion and an increase in erosion rates and extent.	Common ↑
Pluvial Flood	Projections indicate an increase in the frequency of heavy rainfall days (days with precipitation >30mm) for County Limerick with some areas projected to see an increase of up to 62% (bottom right). This will likely result in an increased frequency of associated fluvial and pluvial flooding.	Very Frequent ↑
River Flood		Very Frequent ↑
Groundwater Flood	Projections of changes in groundwater flooding are currently not available, therefore there is uncertainty in the change in groundwater flooding frequency that can be expected.	Occasional ↓

Fig 3.8: Projected Climate Change hazards and frequency for Limerick.

3.3.4 Future Climate Risks and Impacts

In the future, Limerick City and County will change in terms of its population and developments. This will potentially affect the exposure and vulnerability of people and assets within the region. National, regional and local strategies that outlined expected and possible sociodemographic and infrastructure developments within Limerick City and County were reviewed to understand how exposure and vulnerability may change by 2050.

In respect of population change:

- Population to increase to **246,000-256,500** by 2031 (NPF)
- Limerick City and Suburbs' **population targeted to increase by up to 55,000** by 2040 (NPF)
- **c.2,693** new housing units required by 2028 (Limerick Development Plan)
- An estimated **12,000 jobs** by 2030 (Limerick 2030 Plan).

In respect of future developments which are expected to be delivered the following are noted:

- **Coastal and Flood Defence Schemes:** King's Island Flood Relief Scheme aims to provide integrated flood protection measures for King's Island, which is surrounded by the River Shannon and the Abbey River. Both rivers are tidal and the island is susceptible to both coastal and fluvial flood risk.
- **Key national road infrastructure projects include focus for council:**
 - o N21/N69 Limerick to Adare to Foynes
 - o N20 Cork to Limerick
 - o N21 Newcastle West Relief Road
 - o N24 Cahir to Limerick Junction

In addition to the changes in the frequency of hazard events, future risk is also driven by the changes in exposure and vulnerability of assets. In order to estimate the potential change in risk, a number of assumptions have been made in relation to the seven impact areas:

Assets

- Due to the expected increase in County Limerick's population, there will be an **increase in the associated households and infrastructure** resulting in an increase in the number of assets exposed to hazard events.
- Due to the expected increase in the frequency of heatwaves, **road assets will be more regularly exposed to extreme temperatures and drought** conditions with the potential for increased damage to roads.
- Due to the expected increase in the frequency of coastal erosion and coastal flooding, assets on the coastline will be more regularly exposed to erosion and flooding which will result in the washing away of the coastline and increased damage to assets along the coastline.
- Pluvial and river flooding events that were once considered extreme, will become more frequent. **This will increase damage in the areas already exposed to these hazards** and also expose new areas and therefore assets that were previously unaffected.

Health and Wellbeing

- Due to the expected increase in the elderly population in County Limerick, there will be a **greater number of vulnerable people who are more sensitive to hazards**, particularly heatwaves.
- Pluvial and river events that were once considered extreme, will become more frequent. Consequently, people will be more frequently exposed to flooding hazards, and higher flood levels which will mean **people previously unaffected by flooding may become exposed**. This could impact on both physical and mental health and wellbeing.

Environment

- The potential increasing occurrence of heatwaves and drought conditions within County Limerick will mean **increased temperatures in water bodies and lower water levels** which can decrease water quality resulting in short- and long-term impacts on the environment.
- Due to the potential increase in the frequency of exposure to hazards in County Limerick, there could be an **increase in the impact on environmental assets** as the time/ability for the habitat/environment to recover is reduced.
- Coastal Erosion and Coastal Flooding events will become more frequent. Consequently, environmental assets will be more frequently exposed to flooding and erosion hazards, and higher flood levels and more frequent erosion events will mean **environmental assets previously unaffected by flooding and erosion may become exposed**, resulting in short- and long-term damage to habitats/environment by these hazards.

Social

- Due to the expected increase in the total and elderly population in County Limerick, there will be an increase in the number of people affected by social isolation during some hazard events.
- In response to heatwaves, there will be an increased use of blue/green spaces by the public putting increased pressure on local amenities e.g. littering, traffic problems, anti-social behaviour.

Cultural Heritage

- Due to the potential increase in frequency of heatwave and drought events, degradation rates will potentially increase resulting in an increase in the impact of cultural heritage assets.
- Coastal Erosion and Coastal Flooding events will become more frequent. Consequently, cultural heritage assets will be more frequently exposed to flooding and erosion hazards, and more frequent flood events will mean that cultural heritage assets previously unaffected by flooding may become exposed resulting in short- and long-term damage to cultural heritage assets by these hazards.

Financial

- Due to the potential increase in frequency of hazard events and exposure across County Limerick, there will be an associated increase in the actions the local authority takes before, during, and after an event.
- Therefore, there will be an increase in the costs associated with dealing with the events, e.g. air conditioning, emergency service response, temporary and permanent flood defences, staff, training, and equipment purchase/maintenance.

Reputational

- Due to the potential increase in the frequency of hazard events and exposure across County Limerick, during an event there will be an increase in demand/pressure on services/resources potentially reducing the level of service delivery and harming the reputation of the local authority.
- For hazards which are existing long-term issues in County Limerick, e.g. coastal erosion, if the response to the increased frequency and severity events is deemed insufficient by the public, this may negatively impact on the reputation of the local authority.

Fig 3.9: Assumptions in respect of impacts of Climate Change in Limerick

The future changes in the hazard, exposure, and vulnerability combine to form an assessment of future risks across Limerick City and County. The risk matrix on the right shows the future change in risk with the hollow marker showing the current risk and the solid marker the future risk. The dotted line shows the change between the current and future risk.

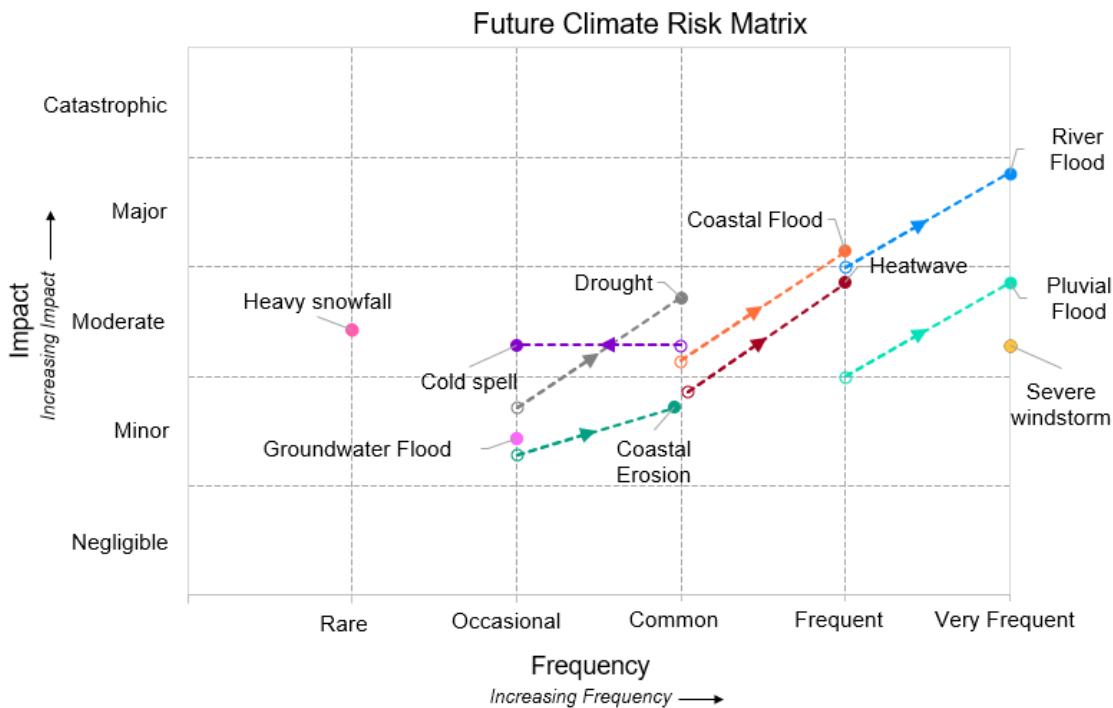


Fig 3.10:
Future Climate
Risk Matrix

The **risk** of existing hazards such as **river, pluvial, and coastal flooding and coastal erosion** is projected to increase in the future because of projected **increases** in the frequency of heavy precipitation events, rising sea levels and associated increases in inundation extent and depth. In addition, projected developments for Limerick City and County has the potential to result in an increase in the number of exposed assets and populations.

Heatwaves and droughts, although already experienced in Limerick City and County, are expected to occur more frequently due to climate change and with a greater impact on Limerick City and County in the future. These hazards can therefore be considered as resulting in **emerging risks** for the region.

Although the frequency and impact of **severe windstorms** is thought to be **unchanged in the future**, these events will remain a risk for Limerick City and County.

The level of impact associated with **cold spells** for Limerick City and County remains constant, however, due to the potential decrease in hazard frequency, the overall risk of these hazards is likely to reduce in the future, resulting in a lesser risk. The impact and frequency of **heavy snowfall** is expected to be unchanged in the future.

4 CLIMATE ACTION RESPONSE

4.1 A Vision and a Mission for Limerick City and County Council's Climate Action Plan

The Limerick Development Plan is underpinned by a strategic vision that guides the sustainable future growth of Limerick. At the core of the vision are cohesive and sustainable communities, where our cultural, natural and built environment is protected. The vision embraces inclusiveness and a high quality of life for all, through healthy place-making and social justice, including the ongoing development of the Regeneration Areas and disadvantaged communities. An integrated approach will align housing and public transport provision. Human and environment wellbeing including climate adaptation are at the core of the vision.

The Strategic Vision reads as follows:

Limerick – A Green City Region on the Waterfront By 2030, Limerick will become a green City region on the Shannon Estuary connected through people and places. This will be achieved through engagement, innovation, resilient urban development and self-sustaining rural communities.

At the heart of this vision is Climate Action and this is reflected in the Key Ambitions that embeds the vision into all aspects of the Council's activities. These ambitions underpin this plan and provide a focus for the actions that will be set out in it.

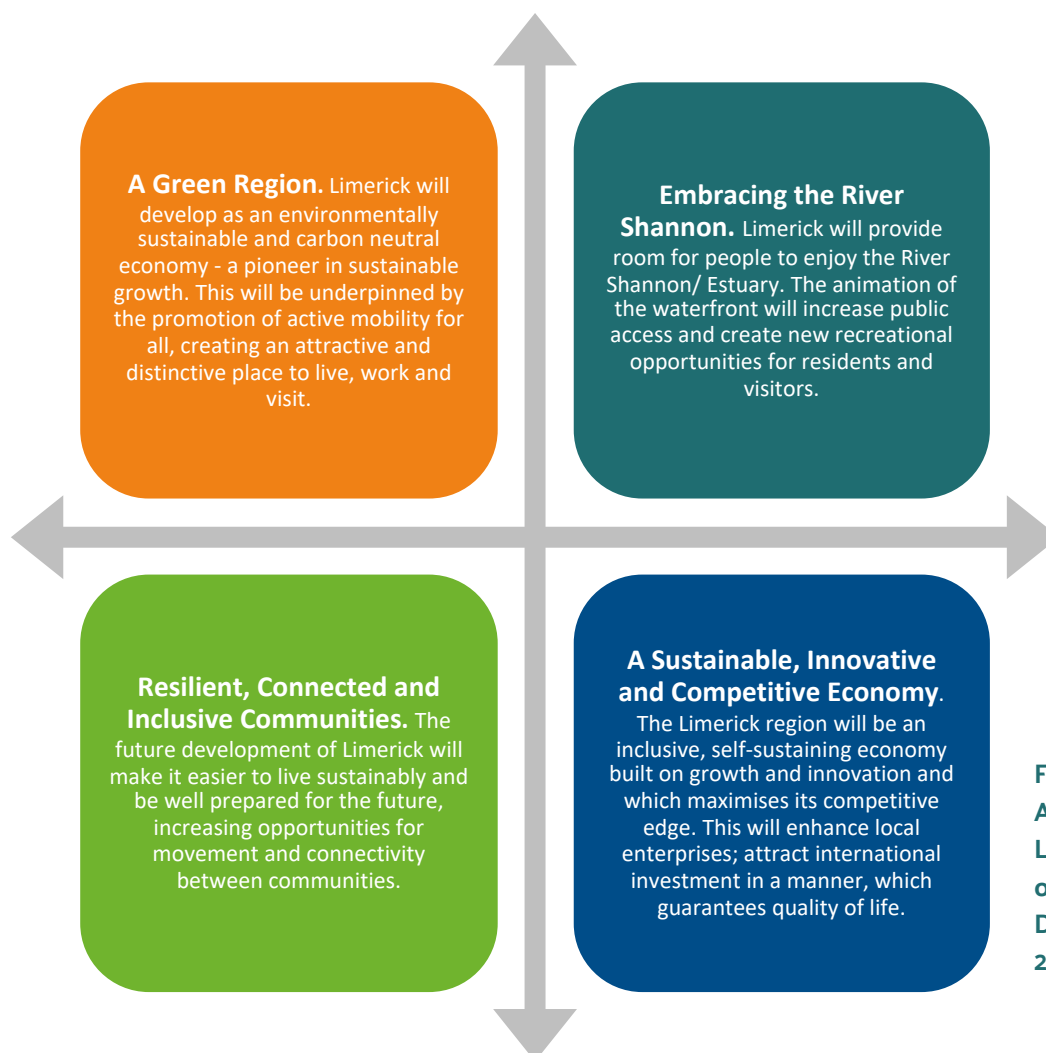


Fig 4.1: Key Ambitions for Limerick as set out in the County Development Plan 2022-2028

Building on this, the **vision** for the Climate Action Plan is as follows:

Limerick City and County Council will lead the transition to a low carbon and climate resilient society. This will be achieved through engagement, innovation and a just transition.

This vision statement is aligned with the vision statement proposed for the Decarbonisation Zone, which was set out in its submission to Government in 2021:

Limerick City and County Council's Decarbonisation Zone will form a clear path for the development of a sustainable City and County, which is aligned to the UN Sustainable Development Goals. The decarbonisation zone will be a demonstrator for the just transition to a low carbon, climate resilient society and economy, by achieving at least a 51% reduction in carbon emissions by 2030 and carbon neutrality by 2050, enabling national climate change policy.

While the vision statement defines where LCCC would like to lead the County, a mission statement speaks to its grounded purpose in delivering and mainstreaming effective climate action. This action-oriented mission statement helps guide representatives and stakeholders in coordinating their work towards the defined Vision.

The Mission for Limerick City and County Council is:

We will strive to achieve this by focusing on the key sustainability pillars of energy, transport, waste, behavioural change, land use, ecosystems and the built and natural environments. We will achieve this by supporting innovation and co-creation with all stakeholder in a collaborative environment across the county

4.2 Buildings and Energy

Ireland has set ambitious targets for a 50% improvement in energy efficiency (relative to 2009 levels) and a 51% reduction in greenhouse gas (GHG) emissions (relative to 2018 levels) by 2030, with net-zero emissions no later than 2050.

LCCC aims to show leadership in working to meet, and surpass, these 2030 targets. The Public Sector has been required to deliver a 33% improvement in its energy efficiency by 2020 and 50% by 2030. To date we have achieved improvement in the energy efficiency of our buildings. Looking ahead to 2030, and achieving the new public sector target of 50% energy efficiency a new targeted strategy is required targeting not just our Significant Energy users, but all buildings owned by the Council. A key area of focus is thermal energy and the need to transition away from fossil fuels as a means of heating and cooling our buildings. This will require significant investment.

To meet the national targets requires ambitious reductions in GHG emissions and energy efficiency improvements across not just public buildings but commercial and residential buildings also. In Limerick, particular attention needs to be paid to protecting and enhancing our substantial built heritage. How we light our public areas also needs to be addressed, along with improving the resilience of the built environment to the effects of climate change.

4.2.1 Limerick City and County Council Energy Management Team

LCCC has established an inter-departmental Energy Management Team, with representatives from each of LCCC's Significant Energy Users (SEUs) and departments, to advance our focused approach to energy management in the organisation. This multidisciplinary team works with SEAI to monitor and track energy performance in LCCC. With this information, the team can identify and deliver energy efficiency improvements and CO₂ emissions reductions across all Council operations. The SEAI have developed a 'Gap to Target' tool and to facilitate scenario testing in developing a programme to meeting the Council's 2030 energy and carbon targets. LCCC has achieved ISO 50001 Energy Management standard.

4.2.2 Public Lighting

Public lighting is LCCC's highest energy consumer, accounting for a substantial portion of the Council's overall primary energy consumption. Public lighting upgrades are therefore essential to LCCC achieving its energy efficiency target. A key challenge is that as the County grows to support a rise in population, the quantity of lights increases. The Road Management Office is coordinating a programme of to retrofit public lights across five Local Authorities with energy efficient LED luminaires. These new lights will be cheaper to run, better for the environment and give off a clearer light. Work is due to commence in Limerick in 2024. In the interim LCCC are actively replacing all failed lights with LED luminaires.

4.2.3 Social Housing Retrofits

All new social houses are developed to Near Zero Energy Building Standard, and the upgrading of existing social housing stock in Limerick to B2 BER Standard is well underway. The Government launched a revised Energy Efficiency Retrofitting Programme for social housing upgrades in 2021. The programme has an overall target of 36,500 social houses nationally to be upgraded to a BER rating of B2. The revised programme provides significant upscaling in the levels of funding available in line with the Programme for Government commitments. It focuses on ensuring that the fabric of the home is upgraded, and an energy efficient heating system is provided. This enables local authorities to move to a 'deeper retrofit' programme, which result in significant energy and cost savings and improved comfort levels for residents.

No specific 2030 target has been confirmed for each individual Local Authority. There are currently approximately 5,250 social housing units owned by LCCC. The majority of these properties will require Energy Retrofit Upgrades by 2030. LCCC has availed of maximum levels of funding under the programme, within the constraints of annual Government funding allocations made available to LCCC for social housing retrofits. LCCC are examining alternative means of funding these works to accelerate the programme of social housing retrofitting. LCCC ambition is to upgrade its social housing stock to A3 over the lifetime of this plan.

4.2.4 Alternative Energy and Heat Sources -

There is significant potential for the production of electricity from renewable sources for consumption by LCCC, such as solar photovoltaics (PV) and district heating schemes, which can reduce our reliance on grid electricity.

4.2.4.1 Solar Photovoltaics (PV)

LCCC has a substantial property portfolio of offices, depots, libraries etc. There is therefore great potential to generate electricity for the buildings reducing its energy consumption, GHG emissions and operating costs. Furthermore, the installation of PV together with battery storage will support the roll out of EV charging infrastructure for Council fleet.

LCCC have carried out preliminary assessment of a number of Council owned sites that may be suitable for the installation of small / medium scale projects. These include former landfill sites, land adjacent to roads projects etc.

4.2.5 Co-ordinating, Facilitating Advocating

LCCC has a critical role in supporting all sectors to achieve their Climate Action Ambitions.

4.2.5.1 Renewable Energy Sources

To support an increase in renewable energy sources across the county LCCC will prepare a Renewable Energy Strategy for the County that will include, wind, solar, integrated renewables as well as District Heating, Green Hydrogen, Anaerobic Digestion, including Bio Compressed Natural Gas.

LCCC have participated in the +CxC H2020 project examining the creation of Positive Energy Blocks in the city centre. A Positive Energy Block is a collection of buildings that produce more energy than they consume. One of the outputs from this project has been the development of a tidal turbine by a local company GKINETIC.

4.2.5.2 District Heating

The National CAP23 includes targets for the supply of up to 2.5 terawatt-hours (TWh) of district heating nationally to decarbonise residential heating. A district-heating scheme consists of an insulated pipe network, allowing heat generated from a single or several larger centralised sources to be delivered to multiple buildings.

Limerick City Metropolitan Area is of a scale to support a District Heating system / systems. It will be necessary as a first step to prepare a feasibility study that would identify the potential sources of heat and clients that could be served by a District Heating system. The LDA in the development of the Colbert Quarter are advocating the use of District Heating as a means of providing near zero carbon heating for the district.

4.2.5.3 Alternative heat Sources

Alternative near zero heat / thermal sources are being developed. These include geothermal heat sources and anaerobic digestion. LCCC is supportive of these technologies subject to the protection of the environment.

4.2.5.4 Building Retrofitting

Financing the retrofitting of historic buildings is acknowledged to be more expensive than standard retrofitting due to the nature of the building's fabric and the need in many cases to conserve the heritage value of the building. LCCC have been successful in securing funding from DGREFORM to investigate the business case for and potential structure of a sustainable retrofitting fund to support this ambition under the Technical Support Instrument Initiative. Furthermore, in operating the Living City Tax Incentive Scheme LCCC has developed a "One Stop Shop" to support owners and agents with advice from across the Council including conservation, fire, energy and planning.

4.3 Transport

Transportation has a critical role to play in our approach to climate change, as it contributes to a significant amount of greenhouse gas (GHG) emissions. In Limerick, the transportation sector is the 3rd largest contributor to GHG emissions, with an estimated 11% of our total emissions. Within the DZ it is marginally higher at 14%.

How we choose to travel for work, education, shopping or leisure has a big impact on Ireland's and Limerick's GHG emissions; so, there are significant opportunities for positive change. However, this requires significant investment in our rural areas to support a modal shift as required.

At a national level, the Climate Action Plan 2023 (CAP23) sets out an ambitious target for the transport sector to reduce its emissions by 50% by 2030. CAP23 outlines the steps, which will enable a radical, equitable transformation in how we travel over the next seven years to move towards the 50% reduction in carbon emission by 2030, and a fully decarbonised transport sector by 2050.

This is a challenging target - We are highly dependent on private cars, both in an urban and rural setting and for both social and economic purposes. The 2022 Census outlined that the number of people who drove to work increased by 4% to 1.2 million between 2016 and 2022 and the dominant form of transport for school children remained the car, with 55% of primary school and 42% of secondary school children being driven or driving to school.

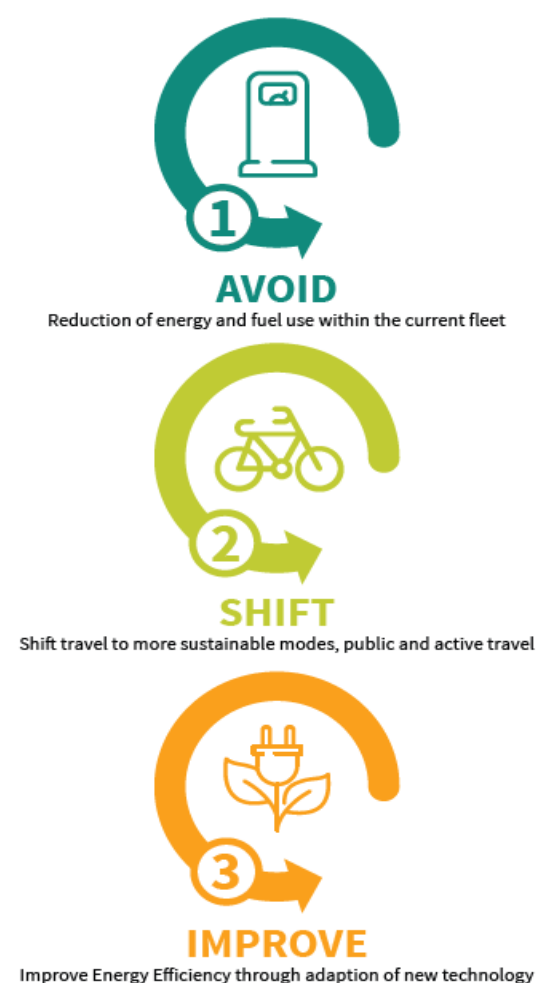
The convenience of cars must be set against the ever-present issues of traffic congestion, road safety, severance of towns, villages and communities, and that cars are a large contributor to both air and noise pollution in our towns, villages and cities. This plan seeks to reduce the modal split of cars by 50% over the lifetime of the plan.

LCCC has a target to reduce the Council's GHG emissions by 50% by 2030 and we have set out key objectives to address this target step by step. LCCC's objectives are intended to focus our work on the key areas of public transport, active travel and modal shift, LCCC fleet, and electric vehicle charging, with specific actions targeting each of these areas. The adaptation of our transport network to the impacts of climate change is considered with actions outlined under the objective of 'Road Construction, Maintenance and Infrastructure'.

4.3.1 Limerick City and County Council Operations

LCCC's fleet is made up of vehicles, which are predominately-internal combustion engine (ICE) vehicles, and which accounted for 25% of the Council's total emissions in 2021. Since 2018 emissions from the fleet has increased.

Addressing these challenges is something that is going to take time. A fleet strategy is required to set out the roadmap to decarbonise the fleet and ensure the 2030 emission targets are met, through the approach of Avoid-Shift-Improve, as illustrated in Figure 4.2.



Key components of that Strategy include:

- Switch from DERV to HVO (Hydrotreated Vegetable Oil). This would involve introducing bulk tanks in depots. The potential saving in one location at the Park Rd depot would be 211.25 Tonnes of CO₂. Furthermore if 50% of Fuel Cards were switched to HVO a further reduction of 600 tonnes could be achieved.
- Assess individual vehicles of the Class (GVW) available in EV format. Ascertain the minimum annual KM to be of benefit as a change from ICE (Internal Combustion Engine) to EV. This must be coupled with an assessment of location suitability for EV charging and parking.
- For the vehicles that will not migrate to EV, assess EURO Stage emissions and look at replacements with newer improved emission levels.
- Assess & record ICE vehicle idling and implement training programme to increase awareness and reduce occurrence.
- Establish EV pool vehicles at key locations. Such a roll out would require charging infrastructure and booking platform.
- Establish locations suitable for PV assisted charging. This should be part of a general review of the entire building inventory.

HVO needs to be viewed as a transitional action that will allow for the migration of ICE vehicles to EV format. It is also essential that the HVO source is certified sustainable.

Fig 4.2: Avoid Shift Improve Pathway

4.3.2 Limerick Shannon Metropolitan Area Transport Strategy

LSMATS is the regional Transportation Strategy that provides a long-term strategic framework for the planning and development of transport infrastructure and services for the Limerick Shannon Metropolitan Area (LSMA). A core element of the Strategy is to reduce emissions from Transport by 50% by 2030. This is to be achieved by 2 main actions:

- Increased use of public transport, walking and cycling; and
- Conversion of the transport fleet to zero emissions vehicles.

The Report sets out the scale and the strategic-level detail of the investment required to facilitate a reduction in the use of the private car in the LSMA over the period to 2040. While the conversion of the national transport fleet to low and zero-emissions vehicles is primarily a matter for national level policy and investment programmes, rather than a single metropolitan transport strategy, the LSMATS will promote and facilitate this change. All urban public transport vehicles will be zero-emissions by 2035, with this transformation already underway. The NTA are committed to this on a national basis.

In relation to the private car fleet, the LSMATS commits the local authorities to facilitate the roll-out of electric cars through the provision of on-street public charging points where demand requires them. Such a strategy need to operate alongside a strategy to facilitate increased use of other modes in order to meet environmental, economic and social objectives related to emissions, congestion and car-dependency.

In relation to goods vehicles, the freight sector will be required to contribute to the overall carbon reduction goal. The LSMATS facilitates this by the promotion of rail freight, the introduction of revised delivery arrangements and by seeking to reduce the effects of congestion generally.

The proposals in the LSMATS also facilitate and support the recently established Decarbonisation Zone in Limerick City by providing alternatives to the private car.

4.3.3 Active Travel

Active Travel is a very simple concept; it is about getting more of us out of our cars and using more sustainable transport modes like cycling and walking as part of a purposeful journey. To achieve this, LCCC, in partnership with the National Transport Authority plans to expand and improve our cycling and pedestrian infrastructure. As a local authority, LCCC will examine ways of supporting its own staff to use more sustainable modes of transport in commuting to and from work as well as in the performance of their duties.

The Limerick Metropolitan Cycle Network Study sets out the envisaged cycle network for the Metropolitan Area to 2025.



Fig 4.3: Limerick Metropolitan Cycle Network Study

Limerick's Active Travel team has already delivered a number of key projects. These include:

- Castletroy Urban Greenway – a 1.3km off-road cycling and walking network connecting people's homes with schools, shops and a local playground;
- R926 Dooradoyle Road Cycle Lane Scheme Phase 1 – upgraded cycle lanes including kerb segregation;
- Groody Road – reallocation of road space for sustainable travel with segregated cycle lanes added;
- Shannon Bridge – 2-way segregated cycle lanes on Shannon Bridge providing safe cycling access from the north side of the city to the city centre;
- Milford Road, Castletroy – kerb segregation added along existing on-road cycle lane;
- Clonmacken Road - kerb segregation added along existing on-road cyclelanes between Clonmacken Roundabout and the access to the Jetland Shopping Centre;
- R510, Mungret – reallocation of road space for sustainable travel with segregated cycle lanes added between Quinn's Cross Roundabout and roundabout access to Ard Aulin;
- Various locations – Footpath improvements and additional pedestrian crossings at various locations across Newcastle West, Cappamore-Kilmallock and Adare-Rathkeale.
-

In addition, improvements are being made to the pedestrian and cycling infrastructure in the City Centre as part of the O'Connell Street Revitalisation Project.

Concurrently proposals are being delivered that will link key attractors with the city centre including:

- University Hospital Limerick.
- University of Limerick.
- TUS (formerly LIT).
- Mary Immaculate College.
- The Crescent Shopping Centre.
- Limerick School of Art and Design.
- National Technology Park.
- Residential areas across the city.

4.3.4 Electric Vehicles

Where a transition to public transport or sustainable active travel modes is not feasible, Electric Vehicles (EVs) can play a part in reducing the carbon emissions associated with internal combustion engine (ICE) vehicles. As EVs become more mainstream there is an increasing demand for home charging solutions as well a seamless public charging network.

To reflect this understanding, Zero Emissions Vehicles Ireland (ZEVl) was established in 2022 to support the delivery of a national EV charging network as part of the Governments Electric Vehicle Charging Infrastructure Strategy 2022-2025, and to further assist citizens, the public sector, and businesses to continue to make the switch to zero emission vehicles. LCCC is actively working with ZEVl to develop an EV Charging Strategy for the County. Implementation of elements has begun and will continue under the Climate Action Plan.

4.3.5 BusConnects Limerick

BusConnects is a programme of public transport investment in Ireland's major urban centres. It is developed and managed by the National Transport Authority (NTA), and funded by Project Ireland 2040. BusConnects includes many elements:

- Redesigning the bus network.
- Building new bus corridors and cycle lanes.
- Implementing a state of the art ticketing system.
- Implementing a cashless payment system.
- Simpler fare structure.

- New bus livery.
- New bus stops and shelters.
- New Park & Ride sites in key locations.
- Transitioning to a new zero emissions bus fleet.

Some of these elements are already underway in Limerick. Many older buses with Bus Éireann livery have been replaced by newer yellow and-green TFI buses. Twenty new battery-electric buses will be added to the local fleet in 2023. By completing BusConnects Limerick will help realise the target of 50% reduction in emissions by 2030.

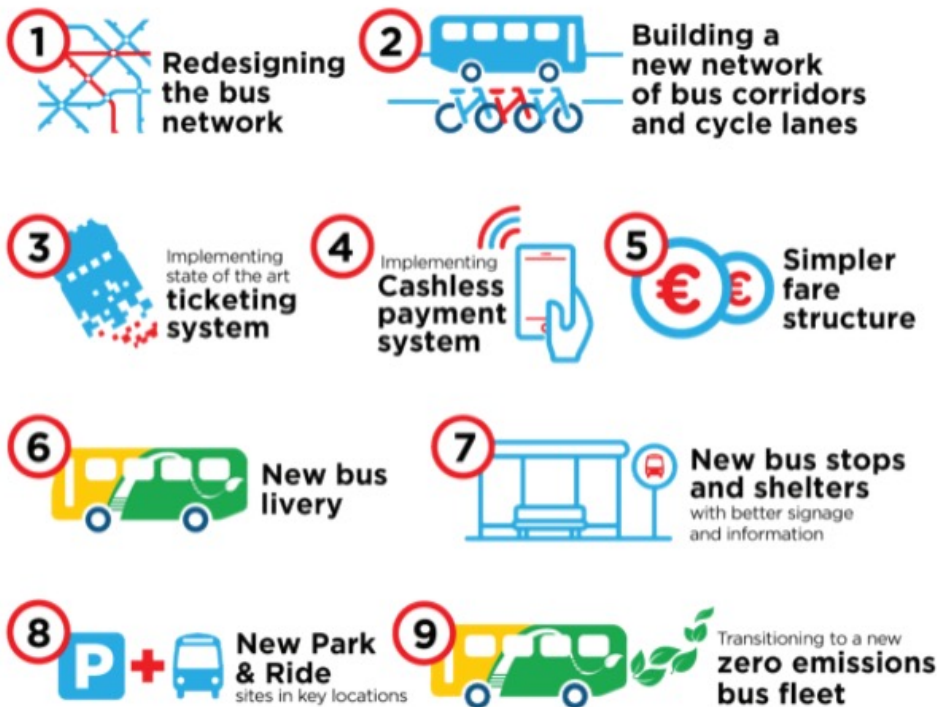


Fig 4.4: Bus Connects programme - Limerick Bus Network Redesign Volume I: Draft New Network Jarrett Walker & Associates and SYSTRA on behalf of the National Transport Authority.

4.3.6 Additional Benefits to a Reduction In transport Related Emissions

The actions to reduce GHG emissions from transportation can result in other benefits for Limerick, including but not limited to:

- **Benefits of a modal shift:** A reduction in air pollution resulting in cleaner air and a reduction in vehicle related noise pollution in our urban areas. People walking and cycling instead of driving potentially improves air quality.
- **Cycling Environmental Benefits:** Cycling can help reduce traffic congestion
- **Active Travel Benefits:** Health Benefits on a recent long term health study done in the Dublin Metropolitan Area identified that walking prevents 2,731 serious long-term health conditions each year, and the physical benefits of walking prevented 547 deaths annually.
- **Cycling Health Benefits:** Cycling is proven to improve serious long-term health conditions. Research carried out in the Dublin metropolitan area indicates that the physical activity benefits of cycling prevents 42 early deaths annually. In addition cycling and walking present economic opportunities for businesses etc.

4.4 Environment

LCCC acknowledge the importance of protecting, maintaining, and enhancing our Natural Environment. The County Development Plan sets out a framework to guide decision making on what we choose to hand onto the next generation, through protection, management, sensitive enhancement or appropriate repurposing. It is recognised that the conservation and enhancement of and access to Limerick's heritage has the potential to contribute to individual wellbeing, shared community identities, social cohesion and the liveability of our towns and villages as well as our visitor economy.

4.4.1 Nature Based Solutions

Central to the protection of our natural and built environment is the adoption of Nature Based Solutions. Nature-based solutions are defined by the European Union as:

'Solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits, and help build resilience. Such solutions bring more and more diverse, nature, and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions.'

Nature-based solutions work with nature, rather than against it, to provide sustainable, cost-effective solutions to societal challenges, including climate change. These solutions play an important role in both mitigation against climate change and in helping us to adapt to the effects of climate change, in many ways:

- Carbon sequestration (acting as carbon sinks)
- Providing and enhancing habitats, biodiversity and ecosystems
- Preventing or reducing flooding by absorbing water and helping to control surface water runoff
- Filtering pollutants, improving air and water quality
- Temperature regulation

Using nature-based solutions in our communities that will maintain and enhance the natural environment will provide a range of benefits that help to manage and reduce the risks of climate change and help build resilience. This is achieved by reducing soil erosion, absorbing, and slowing water run-off, providing cooling, and shading in urban areas, increasing wildlife and biodiversity, and contributing to health and wellbeing.

4.4.2 Green Infrastructure

Green Infrastructure (GI), as a nature-based solution, operates as a network of multi-functional green space and other green features, that are designed and managed to imitate a natural undeveloped environment. Green infrastructure is about more than just planting. It involves understanding the role of nature in supporting life and making places liveable. The Limerick City and Environs Blue and Green Infrastructure sets out a strategy to develop a network of natural and semi natural spaces that support a climate resilient society.

4.4.3 Trees

Trees are important and make a major contribution to the character, appearance and well-being of Limerick. Trees, hedgerows, and plants act as carbon sinks by temporarily storing carbon as they grow. They reduce water run-off in extreme rainfall events, taking pressure off the urban drainage network. They improve the urban microclimate and target the impact of increased temperatures and reduce the 'Urban Heat Island Effect' by providing shelter and shade.

Initiatives such as neighbourhood wood schemes and Coill Beag are examples of community-based initiatives that can have positive impacts.

4.4.4 Biodiversity

Healthy ecosystems are more resilient to climate change. Protecting and actively restoring natural habitats can help reduce the impact of Climate change. In addition they provide an opportunity to sequester carbon, absorb flood water and improve water and air quality.

4.4.5 Additional Benefits

As outlined above there are significant benefits to having a healthy and well connected eco system. These include:

Health and Wellbeing / Social Benefits:

- Nature-based solutions, and trees, provide aesthetic value in our landscaping enhancing our quality of life where we live and work. They can provide beautiful green spaces for recreational use.
- Physical benefits: trees have a positive effect on health through the provision of shade, outdoor recreation amenity and clean air.
- Mental benefits: research has shown that trees reduce stress and contribute to a greater quality of life.
- Trees create a distinctive landscape, making important landmarks and providing a unique sense of place.

Environmental benefits:

- Green infrastructure, such as trees and their ecosystems provide valuable habitats for wildlife, such as nesting birds, pollinators and other insects.
- Green infrastructure, such as mini woodlands, can provide food sources for wildlife.
- Providing networks of natural wildlife corridors through the urban environment help animal and plant species migrate through the changing landscape.
- Trees improve air quality as they absorb carbon dioxide and other gases from the air producing oxygen in the photosynthesis process. Each year a mature tree produces enough oxygen for 10 people. Trees also trap dust particles which improves air quality.
- Trees and hedgerows can reduce noise by acting as a sound barrier. This is particularly important in absorbing traffic noise in built up areas.

Economic benefits:

- Property values: research has shown that the presence of trees can increase the value of residential and commercial properties by between 5 - 18%.
- Towns and villages and retail areas: the presence of trees in retail areas positively affects people's behaviour by attracting consumers to an area.
- Effects on heating / cooling buildings: trees provide shade, shelter in wind and a regulation of local air temperature. This reduces energy and heat costs.

4.5 Flood Resilience

One of the effects of climate change that can be anticipated, and a key climate change adaptation issue, is the management of rainfall runoff as global temperature rises and rainfall patterns change. It is likely that severe weather events and sea level rise will have a considerable impact on flooding and flood risk for communities and infrastructure in Ireland.

The climate change Risk Assessment carried out as part of this plan has highlighted the risks associated with coastal flooding and erosion through the increase in the frequency and duration of rainfall events and storm surges as well as the increased risk of pluvial and fluvial flooding across the county.

4.5.1 Catchment Flood Risk Assessment & Management (CFRAM)

The national Preliminary Flood Risk Assessment (PFRA) screening exercise of 300 communities at risk of flooding in Ireland was carried out by the Office of Public Works (OPW) and was issued in 2011.

Its purpose was to identify the communities that were, at the time, and into the future, most likely to be affected by flooding.

Following a review of the 300 communities identified in 2011, 9 areas within LCCC's remit were designated as requiring physical measures to significantly manage and reduce flood risk. Draft CFRAM Flood Risk Management Plans (FRMPs) were prepared by the OPW and issued for public consultation in 2016 for the following areas in Limerick:

- Athea
- Adare
- Askeaton
- Croom
- Foynes
- Newcastlewest
- Rathkeale
- Castleconnell
- Limerick City and environs

Approval of the CFRAM Flood Risk Management Plans was granted by the Minister for Finance, Public Expenditure and Reform, Paschal Donoghue TD.

In May 2018, the Government launched a 10-year programme of €1 billion investment in flood relief measures under the Project Ireland 2040 National Development Plan. It proposed to invest in a total of 118 flood relief schemes nationwide over the coming decade.

The first tranche of €257 million in funding will see 50 nationwide schemes advance to the detailed design and construction phase.

Of these 50 schemes the following Limerick schemes will advance through direct investment of €57.4 million:

- Limerick City and environs
- Castleconnell
- Athea
- Rathkeale

The following areas have been included in the broader Limerick City Flood Relief Scheme:

- City Centre Quays
- Thomondgate
- Corbally
- Annacotty
- Montpellier
- The Docklands
- Condell Road
- Ballinacurra
- Rosbrien
- Ballysimon
- Old Cratloe Road

4.5.2 Sustainable Drainage (SUDS)

'Sustainable Drainage Systems or SuDS is a way of managing rainfall that minimises the negative impacts on the quantity and quality of runoff whilst maximising the benefits of amenity and biodiversity for people and the environment.' Construction Industry Research and Information Association (CIRIA).

Our drainage systems have been subject to increasing pressure over recent years due to climate change, population increases, and additional hard landscaping being connected to the network. With the projected increase in population across the county will make it critically important that evolve and adapt our existing drainage networks to meet these needs as well as the risks posed by Climate change.

SUDS where well designed and integrated into a wider blue green infrastructure strategy are a great way to help manage rainfall, and the associated surface water runoff, more sustainably than conventional techniques. They help our urban areas adapt to increased rainfall and the effects of climate change, reducing flow rates and volumes, and providing water quality treatment. They can make our urbanised areas more pleasant and a healthier environment in which to live.

4.5.3 Improved Maintenance of Storm water, Surface Water, and Road Gully Networks

LCCC is responsible for maintaining the drainage systems that manage storm water and surface water run off as required. However, given the likelihood of more extreme rainfall/flooding events and the increased pressure this will put on the existing network, it is critical to ensure that the drainage systems will continue to operate as required. Existing drainage maintenance plans will be reviewed and improved to ensure a comprehensive plan is in place for the network, including gullies and SuDS assets. The plan will look to include the use of any emerging technological solutions.

4.5.4 Additional Benefits

The actions to adapt to Climate Change by increasing our Flood Resilience can result in other benefits such as:

- Water quality benefits: Well-designed SuDS can improve water quality by preventing and treating pollution
- Environmental and Social benefits: Well-designed SuDS can provide biodiversity and amenity benefits
- Environmental and Social benefits: Planting Schemes extended throughout developments provide shading, privacy and permeable surfaces to reduce the rate and volume of surface water runoff. They also filter urban pollutants and sediment and provide opportunities to increase biodiversity.
- Social and active travel benefits: Flood Alleviation Schemes can provide opportunities for additional community benefits in terms of pedestrian and cycle routes.

4.6 Circular Economy and Resource Management

If we are to successfully move away from our current, unsustainable linear system (take, make, use, waste) to a more circular one (design and make, use, re-use and repair, recycle), we need to change not only how much waste we generate, but also how we treat waste.

At a national level, the Waste Action Plan for a Circular Economy 2020-2025 set the scene for our transition from waste disposal to preserving resources in a circular economy. Policy is further strengthened by Ireland's first national circular economy strategy, the 'Whole of Government Circular Economy Strategy 2020-2023', and the 'National Waste Management Plan for a Circular Economy 2024-2030'. Regard will also be had to "Ireland's Draft National Biomethane Strategy Jan 2024.

These strategies and plans, supported by regulation, are key to reducing energy use and resource consumption and achieving a reduction in overall greenhouse gas (GHG) emissions by 2030 and to reach net-zero emissions by no later than 2050. The transition away from fossil fuels and energy efficiency measures can only address some of our emissions, meeting our climate targets also requires a transformation in the way we produce and use products.

As the focus shifts from managing waste as a resource to reuse and repair, LCCC will build on the progress made since the last Waste Management Plan to further embed the circular economy, in alignment with the national strategies and plans. LCCC promotes circular initiatives by delivering a variety of campaigns and initiatives such as Relove Fashion, Repair Cafes, reusable cups, etc.

However, there is still a long way to go. According to the Environmental Protection Agency's most recent reports on annual waste generation, the amount of waste we generate continues to rise. It is clear the transition to a circular economy requires a national response across all sectors of the economy through the lifecycle of products and materials.

4.6.1 Managing Waste in LCCC

LCCC continues to examine how waste is generated and managed in all Council properties and operations. Promoting better waste segregation is fundamental if we are to achieve EU Recycling Rates, e.g. 55% of municipal waste by 2025, rising to 60% by 2030 and 65% of packaging waste must be prepared for re-use or recycled. Further details on the specific targets can be found on www.ec.europa.eu.

The Local Authority aims to identify opportunities to reduce resources across all departments. For example, working with contractors in staff canteens to reduce waste, water and improve energy efficiency in their operations, investigating opportunities to reduce construction and demolition (C&D) waste in our projects and to sustainably manage grass cuttings.

4.6.2 Adopting a Circular Economy

Waste generation is driven by population growth, economic activity and our consumer approach. A challenge going forward is decoupling this trend, which is a challenge that the National Waste Management Plan for a Circular Economy 2023-2029 aims to respond to. LCCC will work to support and implement the targets of this new Plan for a Circular Economy.

While promoting sustainable consumption to prevent waste, LCCC will continue to ensure access to recycling facilities throughout the County and reduce the amount of recyclable material that goes for disposal. Furthermore, we will work to deliver opportunities to highlight repair and reuse across Limerick.

4.6.3 Protecting the Local Environment

Strong national and international waste policy and legislation, encompassing measures of waste management compliance and enforcement, already exists. Monitoring and enforcement of the legislation is ongoing, and an annual inspection plan is used to ensure the efficient delivery of targets.

4.6.4 Additional Benefits

The actions to adopt a circular economy and manage waste can result in other benefits for Limerick, including but not limited to:

- **Environmental Benefits:** By transitioning to a circular economy, we should expect a reduction in plastic pollution. A circular economy will have a wider international impact in reducing pressure on the environment, by slowing down the use of natural resources, and the disruption or loss of habitats and biodiversity. Recycling raw materials reduces our dependency on limited supply of raw materials.
- **Economic Benefits:** The transition to a Circular Economy has the potential to stimulate innovation and create employment in the reuse and repair sector. It can result in better quality, longer lasting, consumer products, which should ideally result in saving money for us all as consumers.
- **Health & Well-Being:** A healthy, clean and protected environment is essential to the health and well-being of the citizens of Ireland.

4.7 Community Engagement

Community engagement for climate action is a crucial aspect for addressing one of the most challenging aspects of our time at all levels of local governance. This type of specific engagement is a central process that will involve individuals, organisations and communities working together to address the shared concerns around climate change and its implications.

LCCC will foster collaboration that empowers local voices and enhances the wellbeing of communities by involving them in decision-making, problem solving and development initiatives. This type of engagement aims to raise awareness, gather diverse perspectives and collaborate on strategies to reduce greenhouse gas emissions, build resilience to climate impacts and the transition to a sustainable society.

Climate change community engagement is essential for activating community action and ensuring all solutions are inclusive, equitable and effective for communities and LCCC.

4.7.1 Building Climate Communication and Awareness

LCCC has a strong history in delivering climate awareness programmes on a variety of climate issues. These initiatives will continue to be delivered with their impact being increased through several different actions (Figure 4.5). LCCC was one of two EU 'lighthouse' cities that were selected for a major climate-change pilot programme that gave lead to the rest of Europe on how to dramatically reduce the carbon footprint of urban areas. Through this +CityxChange programme LCCC funded several open-innovation calls. In particular, the Citizen Innovation Lab was funded and opened as a place where observation, co-creation and experimentation can come together. It is a place where people can take part in activities to help shape a sustainable future for the city. A future where Limerick can become more sustainable, beautiful and inclusive. Through the Citizen Innovation Lab people can work together to explore local responses to the challenges we face. The use of this dedicated space continues to build climate awareness within Limerick City and County

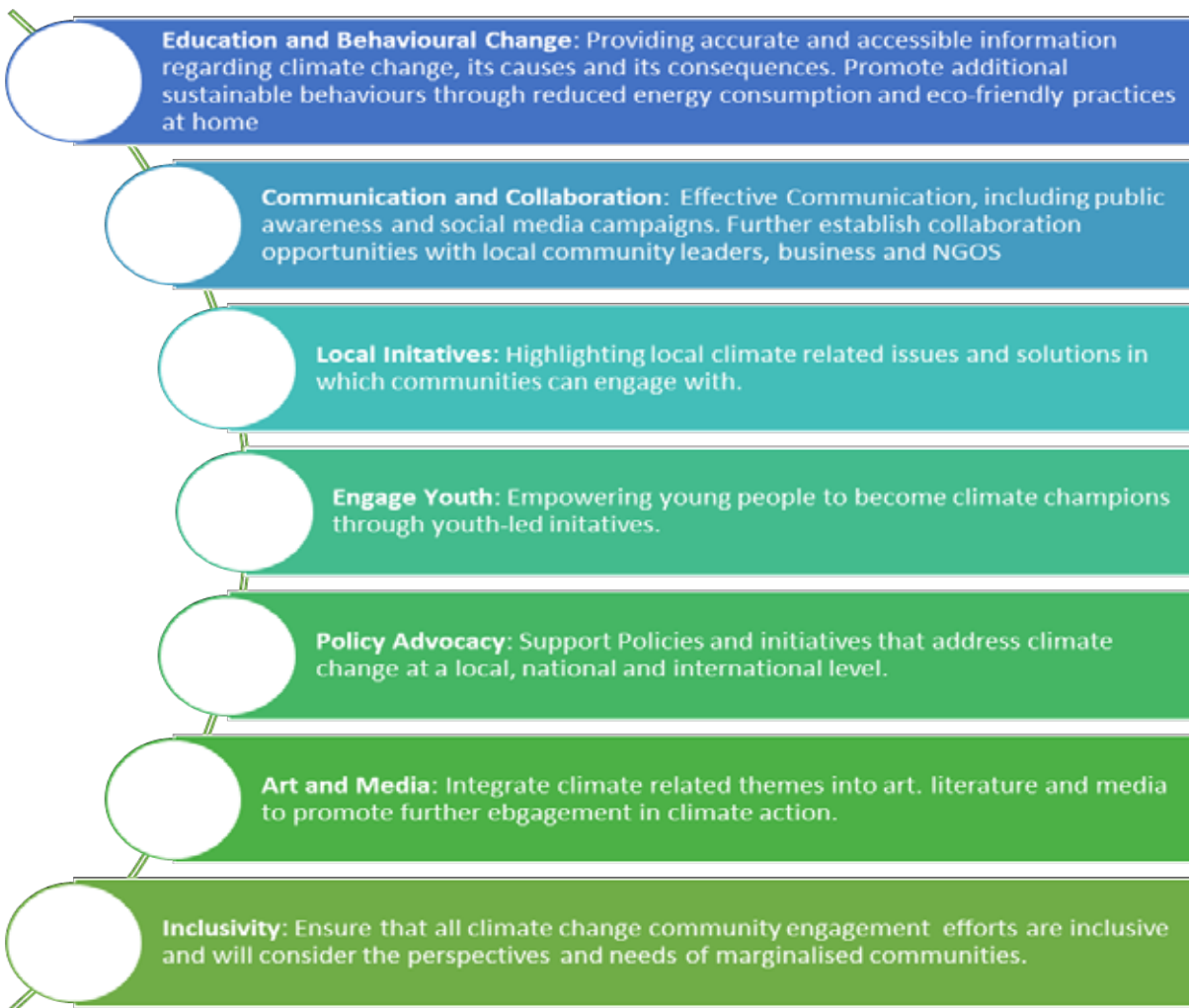


Fig4.5: Engagement channels to build awareness and action

The table above highlighting the many ways in which LCCC will build awareness and engagement throughout the region.

4.7.2 Engaging With External Partners

Engaging external partners in climate action is essential to achieving impactful results in the fighting climate change. LCCC will continue to engage with a variety of external partners to deliver new programmes and campaigns to embed climate action further. LCCC will identify and prioritize stakeholders that will be able to contribute to LCCC's climate action ambitions, in doing so it will set and define specific climate related goals and objectives that can be achieved through this collaboration. LCCC and its external partners will pool resources, knowledge and expertise on best practice scenarios while establishing accountability and transparency.

4.7.3 Embedding Climate Action Internally and Externally

Embedding climate action internally in LCCC will be vital for addressing climate change and demonstrating corporate responsibility. Through continued partnership with the Climate Action Regional Offices (CARO) and the Local Authority Services National Training Group (LASNTG), LCCC will undertake climate action training as it continues to be developed and delivered to all aspects of the local authority. The Climate Action team will work with other internal departments to ensure that Climate Action is a standard item on every agenda and will continue to seek out new opportunities to embed climate action in all areas of the local authority, which will require a holistic and long-term commitment.

Externally LCCC will support communities in addressing climate action in an inclusive and effective manner. This will be achieved through the continued support of community initiatives such as Tidy Towns and the continued development of the Community Climate Action programme and the Creative Community Climate Action programme. Additionally, LCCC will continue to support and work with local development companies in their efforts at instilling climate action in local communities.

4.7.4 Community Climate Action Programme

The Minister for the Environment, Climate and Communications launched the Community Climate Action Programme in 2023. Strand 1 of the programme allocates €1.62 million over three years to support and empower local groups in Limerick City and County to shape and build low carbon, sustainable communities in a coherent way such that they contribute to Ireland's overall climate and energy targets. LCCC have appointed a dedicated Community Climate Action Officer who will guide and support communities to develop local projects and initiatives. To get involved, or for information and guidance, contact LCCC at communityclimatefund@limerick.ie.

5 DECARBONISATION ZONE

5.1 Introduction

Limerick's proposed decarbonisation zone (DZ) is located in the heart of the city and includes much of Newtown Perry, the historic Georgian area of the city. The core of the decarbonisation zone is based on the Innovation Playground developed as part of the H2020 +CityxChange (Positive City Exchange) smart city project.

+CityxChange uses the concept of a Positive Energy Block (PEB) as a driver for change in relation to energy use, energy generation, regulation, mobility, and retrofit. A PEB is a compact area which over a year produces more energy than it consumes. The Innovation Playground is an area of Limerick city centre where different virtual and physical places and activities related to innovation are brought together into a coherent whole to facilitate collaboration, empower citizens, and find new ways of addressing challenges related to climate change and the energy transition.

A best practice example of creating a positive energy city comes from the town of Eeklo in Belgium. There they have set up "Ecopower" a renewable energy cooperative with nearly 50,000 members. The citizens buy a cooperative share and become a co-owner of local wind turbines, hydro power installations or solar panels. Local citizens share in the profits and get the opportunity to buy green electricity at a fair price. As citizens are directly involved in the production of their own power it has reduced the number of objections to the building of local infrastructure.

5.2 Limerick's Proposed DZ Selection Process

LCCC established an interdepartmental working group to examine candidate DZs in Limerick City and County.

The working group proposed an area of Limerick city, with the existing +CityxChange area at its core, on the basis that a substantial amount of baseline research and analysis, data gathering, stakeholder mapping and community engagement has already been undertaken, and identified projects commenced, which would provide a structure for an expanded DZ and support an earlier implementation of the DZ in Limerick.

This proposal was considered by the Corporate Policy Group (CPG) at a meeting in early March 2021 and recommended by the CPG to the full Council. It was approved by the full Council at a meeting later that month.

5.3 Outline of DZ and Proposed Measures

Limerick's proposed DZ covers an area of 133ha and has an estimated population of 7,127 (CSO 2016). Figures 5.1 below show the geographical extent of the proposed DZ.



Fig 5.1: Map of Limerick's Decarbonisation Zone

In addition to the historic core, the zone includes significant areas for redevelopment and will, therefore facilitate the implementation of a broad range of measures ranging from deep retrofit of historical and protected buildings to new builds on brownfield sites with the attendant opportunities to explore nature-based solutions and other emerging technologies.

Once such redevelopment area will be the Colbert Station Quarter, which is set to become a sustainable and flourishing new urban quarter for Limerick. It is expected to offer vibrant compact neighbourhoods in a well-connected and walkable environment. This will include community and recreational amenities, quality public realm and parkland setting to enhance liveability and well-being, whilst promoting sustainability and flexibility for the area to evolve over time. A network of new and improved links will promote sustainable and active travel, better connecting new and existing communities with supporting neighbourhood amenities. Early development opportunities will act as a catalyst to demonstrate the vision, set the tempo for development and support the unlocking of the transformative potential of this new urban quarter and gateway for Limerick.

The Guinness plot, located in the residential cluster 5, at the centre of the masterplan, is to act as one of the first mover visionary housing projects, providing some 150 new apartments out of a possible 700 new units in the quarter. A mixture of social and affordable rental apartments units, with common rooms and predominantly publicly orientated ground floor usages, the dense city centre scheme will look to include:

- A comprehensive Sustainable Urban Drainage landscaping concept, tying in an overarching blue-green strategy within the masterplan, which puts the priority on people above vehicular access on site.
- Green roofs, rainwater harvesting for urban rooftop vegetable production, permeable paving and shared electric carpooling are all being considered. Vastly reduced car-parking provision with a focus on pedestrian and bicycle friendly mobility.
- Modular design and construction, such as offsite CLT (cross-laminated timber) elements.
- Common rooms and shared facilities clustered around circulation zones.
- A range of unit sizes to facilitate a varied multigenerational mix.
- Investigate the possibility for the site to act as an energy centre for district heating pilot (LDA masterplan energy centres vision) and the possibility of PV solar cells combined with the green roofs.

The revitalisation of the Georgian Neighbourhood in the historic core will be key to delivering compact growth for the city and region. Upgrading these historic buildings will have the multiple benefits of providing additional accommodation in already existing buildings with high levels of vacancy and saving embodied energy embedded in the buildings and locating that new population in a walkable and liveable neighbourhood. In this area, an analysis of the retrofit needs of 700 buildings has already been carried out and has looked at what each would require in order to meet a BER of A3. The estimated cost of this retrofit is €150m. However, an emerging issue is that this does not include the cost of general renovations, conservation works to the building fabric and bringing the buildings up to modern standards in terms of fire safety and comfort.



Fig 5.2: Significant conservation and renovation works will be required to the historic Georgian Core in addition to deep retrofit.

In relation to the transport sector, the Limerick Shannon Metropolitan Area Transport Strategy (LSMATS) will deliver a high quality, accessible, integrated and more sustainable transport network that supports the role of the Limerick-Shannon Metropolitan Area as the major growth engine of the MID-West Region, an internationally competitive European city region and main international entry to the Atlantic Corridor. It represents the transport sectors response to the challenges of climate change. It is an integrated transport strategy for walking, cycling, bus, rail and road to support planned growth. It will form a framework for the planning, investment and delivery of transport infrastructure and services to guide the Limerick Shannon Metropolitan Area's development up to 2040 in line with the National Planning Framework 2040 (NPF), National Development Plan 2018-2027 and the Regional Spatial and Economic Strategy for the Southern Region.

Tackling emissions from the transport sector (accounting for almost 20% of Ireland's greenhouse gases in 2017) is a significant part of the Climate Action Plan. Key objectives relevant to LSMATS include:

- Successful execution of the NPF designed to promote compact, connected and sustainable living;
- Make growth less transport intensive by closer alignment between land use and transport planning, flexible working habits and modal shift to public transport;
- Expansion of walking, cycling and public transport to promote modal shift;
- Accelerating steps to decarbonise the public transport fleet;
- Giving Local Authorities more discretion in designating low emission zones;
- Developing a strategy for the heavy freight sector.

The range of measures aimed at reducing carbon emissions in Limerick's DZ fall into the following broad categories:

- Energy Efficiency
- Renewable Energy Generation
- Mobility
- Innovation and Enabling Measures
- Circular Economy

While the focus of these measures is primarily carbon reduction, opportunities for co-benefits such as urban greening will be exploited. Projects such as the Colbert Station Quarter, The Limerick Laneways, and the Limerick Flood Protection Scheme will place a strong emphasis on nature-based solutions and green infrastructure, which will contribute to biodiversity as well as improving air quality, well-being and liveability. Sustainable Urban Drainage features, which offer the multiple benefits of reduced runoff rates, improved water quality and increased biodiversity and amenity will be incorporated to the greatest possible extent in new developments and public realm.

PROJECT	DESCRIPTION
ENERGY EFFICIENCY	
Historic building retrofit programme	Support the retrofitting of historic buildings through the development of new business models including the establishment of a sustainable investment fund.
BMS Systems for Gallery	Building and energy management systems for council buildings including social housing.

PROJECT	DESCRIPTION
ENERGY EFFICIENCY	
Historic building retrofit programme	Support the retrofitting of historic buildings through the development of new business models including the establishment of a sustainable investment fund.
BMS Systems for Gallery	Building and energy management systems for council buildings including social housing.

PROJECT	DESCRIPTION
ENERGY INFRASTRUCTURE	
District Heating	Idea - Combined waste heat from local sources. Feasibility study required
District Heating at Colbert Station	In conjunction with LDA development of the Colbert Quarter support the development of district heating on a community scale.

PROJECT	DESCRIPTION
RENEWABLE ENERGY GENERATION	
PV solar	Development advice on the feasibility and methodology for the installation of PV on buildings.
River turbine	+City xChange project has developed a tidal turbine which has obtained planning permission
Solar roof top	The potential for roof sharing should be examined
Heat Pumps	Guidance and advice needs to be prepared to support the installation of heat pumps in historic buildings
Community Scale Renewable Energy Generation	Continue to engage with community groups with a view to examining the potential for community scale Renewable energy production and the formation of SECs and RECs

PROJECT	DESCRIPTION
TRANSPORTATION	
Freight management -delivery and service strategy	This is a recommendation in LSMATS. The removal of heavy goods vehicles from the city centre would greatly improve air quality in the city centre
Behavioural Change/Active Travel/Travel planning for workplaces and schools	Active travel are continuing to develop and implement a range of initiatives in the areas of safe school, and cycling networks that connect the city.
Promote and facilitate EV's	Develop an EV charging strategy for the city centre centre
Car club -EV	Support the roll out of EV car clubs and infrastructure in the DZ
Post Office upgrades of delivery vehicles	An Post are leaders within the wider public service in the drive to reduce emissions.
Light electric Vehicles	LCCC will investigate the potential of developing a pool of evs for use between its corporate buildings
Cargo Bikes and eScooters	+CxC supported the trialling of a community cargo bike sharing initiative. There is potential to extend the trial will be investigated.
Developing MaaS (mobility as a services), eMaaS and mobility hubs	In the absence of curtilage parking the development of eMaas and mobility hubs in the DZ will support the objectives of increasing the city's population
LSMATS Park and Ride Hubs	Hubs at strategic locations outside city to reduce traffic coming into the city.
Electric Buses	Bus Eireann are in the process of procuring and deploying an electric bus fleet in Limerick City.

PROJECT	DESCRIPTION
CONSTRUCTION	
Opera Site	Limerick 2030 have pioneered a construction waste minimisation methodology in the enabling works carried out on the site. This methodology can be used on other demolition projects across the city.
Building Lifecycle	Building and urban area life cycle analysis triggering decisions that impact sustainability, these works happen in a sustainable and circular way.
Carbon Calculator	Develop a carbon calculator that can be utilised by the construction industry to measure the carbon in any proposed project

PROJECT	DESCRIPTION
ENVIRONMENTAL MANAGEMENT	
Tree Planting	Tree planting offers the potential to address the heat island effect which will become more pronounced as global warming increases. There is potential to increase planting and greening across the city.
Blue Green Infrastructure	The Blue Green Infrastructure delivers a vital role in addressing climate change (e.g. through surface water and flood management, storing greenhouse gases, providing habitats for wildlife) whilst providing a wide range of benefits and supports. The Limerick BGI Strategy presents a road map for its integration across the city and environs.
Green Walls	The concept of a green wall should be trialled as part of a general green initiative for the city centre to address issues such as air quality and heat island impacts
City Flood Relief Scheme	The scheme will help protect the biodiversity of the Shannon Estuary
Near Zero Waste Block	The potential of creating a near zero or full zero waste block in the centre of the city would act as an exemplar for the entire country and would require collaboration across a number of sectors and groups
End of single use coffee cups and containers	Such initiatives have been implemented already and have reduced the level of waste generated by food shops. Consideration should be given to introducing such a strategy in the DZ.

PROJECT	DESCRIPTION
INNOVATION AND ENABLING	
Citizen innovation lab / citizen observatory	Continue to develop the Citizen Innovation lab in particular the development of a permanent innovation lab on Cecil St. The development of a digital collaboration Platform to enable communities to collaborate on Climate Action.
Building energy modelling and monitoring	The Smartlab project is installing sensors in over 70 buildings in Limerick City Centre with a view to assessing the readiness of owners and occupiers to adopt new smart products and services targeted at reducing their buildings energy consumption. Support in Identifying, developing and testing these new products and services in the DZ will assist in decarbonising the area.
Data management strategy	Develop a strategy to collate and measure progress to decarbonisation through the collection of data from a range of sources.
Energy Champions (behavioural change)	In progress
Innovation area/R & D park	Give support to novel food R & D, including Vertical urban farming, Protein from fermentation
Technology Platform - behavioural change	Investigate technology platforms that allows citizens to: (i) learn about sustainability, (ii) identify daily actions they can take to reduce their environmental footprint, (iii) find and buy products from sustainable business and (iv) measure and track individuals, communities and cities environmental footprint based on actions and transactions.
Colbert Station Quarter Development Masterplan	Land Development Agency Project

6 IMPLEMENTATION, FUNDING AND REPORTING

6.1 Planning for Implementation

The Climate Action Plan (CAP) will be implemented by all departments of LCCC, with ownership of the Plan held within Planning, Environment and Place-Making Directorate (PEP).

In the PEP Directorate there is an established Climate Action Team which includes a Climate Action Coordinator, a Community Climate Action Officer, an Energy Engineer and a Climate Action Officer with support from an Environmental Awareness Officer. The role of this team is to mainstream climate action into the activities of the Council, deliver specific actions, support and monitor the implementation of the actions across LCCC, and coordinate the reporting and evaluation of the Plan, following its approval by the Elected Members.

LCCC will put in place a number of Actions Teams whose role will be to manage and deliver the Council's climate actions. These teams will mirror the action areas / themes outlined in this plan and comprise of representatives of relevant departments and the action owners. A separate team will be established to facilitate the implementation of the Decarbonisation Zone Plan. Once the plan is adopted, these teams will commence the development of implementation strategies for the actions outlined in the plan.

LCCC are committed to working collaboratively and in partnership with a range of stakeholders across the County and the region to support the delivery of this plan. The Limerick Clare Energy Agency is a key partner and agent to support this plan. The Atlantic Seaboard South CARO made up of Cork City and County Councils, Kerry County Council and Clare County Council enables collaboration in implementing this plan. Within the Decarbonisation Zone, the LDA as developers of the Colbert Quarter is an essential partner in implementing the plan. These collaborations and partnerships will provide opportunities for shared learnings, technical support and leveraging of funding opportunities during the lifetime of the Plan.

LCCC has a close working relationship with the third level education sector in the County exemplified by the development of the Citizen Innovation Lab as part of the +CxC project on the UL City centre campus. These partnerships will greatly support the delivery of this plan.

LCCC will continue to review the plan to ensure it is fully aligned to relevant national strategies and guidelines.

6.2 Funding

Access to adequate funding for climate action projects, such as government grants, European funds, private sector investment and community co-financing is critical for climate action. While new climate action targeted funding calls may become available in the future, it is expected that established funding bodies for example, the SEAI, the Department of Environment and Climate and Communications, EU funding sources etc. will increase the level of funding streams. However, the Council will continue to actively pursue new and existing funding opportunities from all sources to deliver climate action.

The Council will work collaboratively and in partnership with key stakeholders across the county and region to deliver the plan. Key among these relationships is the CARO who have delivered an inventory of funding sources across the public and private sector for use by local authorities and community groups. The funding streams are grouped into the following categories:

- Project Research Funding
- Project Development Funding
- Project Capital Funding
- Community Gain, Philanthropic and Corporate Funding Source.
- Funding Services and Databases.

Limerick City and County Council have already demonstrated that it is capable of sourcing funding for Climate Action initiatives. Most notably the Positive City xChange EU Horizon 2020 project, which saw Limerick, designated as Ireland's first and only EU Lighthouse City. The project aims to create solutions for Positive Energy Blocks leading to Positive Energy Districts and Cities through:

1. Decision support tools which enable informed decisions to be made by all stakeholders in the community;
2. An approach to creating a Positive Energy Block through energy reduction and efficiency measures, local renewables, local storage, flexibility and peer-to-peer energy trading;
3. Top-down community engagement driven by the local authority and bottom-up citizen engagement to inform, educate and drive behavioural change.

In addition, LCCC are participating in several URBACT networks to develop its knowledge base across a number of environmental spheres. Funding has also been secured under the Creative Ireland programme to support communities in understanding their local climate action initiatives.

Substantial funding has also been secured under the Urban Regeneration Development for a range of actions including the development of a "World Class Waterfront" that incorporates the Flood defences approved under the CFRAMs programme.

6.2.1 Supporting Communities

On February 3rd 2023, the Minister of the Environment, Climate and Communications, launched the Climate Action Fund Strand 1 - Building Low Carbon Communities. This is a fund of €24 million for local authorities across the country, to support and build low carbon communities. This funding is part of the Community Climate Action Programme, which supports projects and initiatives that facilitate community climate action through education, capacity building and learning by doing. Limerick City and County Council has been allocated €811,000 through this fund, and applications for community projects eligible for funding may be made under the following five themes:

- Home/energy
- Travel
- Food and waste
- Shopping and recycling
- Local climate and environmental action.

The Council will manage the implementation of this fund on behalf of the Department of the Environment, Climate and Communications.

Additionally, the Council has supported a range of Community open calls as part of the +CxC project that supported small-scale prototyping initiatives that addressed the energy transition. These activities are hosted through the Citizen Innovation Lab. The Citizen Innovation Lab includes a Citizens' Observatory, an Engagement Hub, a digital platform and a programme of events. It is co-located with the School of Architecture at University of Limerick (SAUL) Fab Lab Limerick in UL's City Campus. It operates as a collaboration between Limerick City and County Council and the University of Limerick. The goal of the Citizen Innovation Lab is to help empower people in Limerick to take part, to co-create this future together.

6.3 Tracking Progress through Key Performance Indicators (KPIs)

A key consideration for the local government sector concerning this strengthened role on climate action is accountability, and in particular the ability to track, measure and report on progress in delivering effective climate action at both local authority and sectoral levels. In this regard, KPIs will continue to play a significant role.

Performance by LCCC on the delivery of emissions reduction and energy efficiency improvements relating to the Council's infrastructure and assets will continue to be tracked through the Monitoring and Reporting (M&R) system managed by the Sustainable Authority of Ireland (SEAI). For actions outside of the M&R system, such as business travel data, the Council will continue to report annually to the SEAI, as required.

The CAROs, along with the Local Government Management Agency (LGMA), collect data on an annual basis relating to a range of themes including:

- Climate action resources
- Climate action training for local authority staff and elected members
- Actions delivered
- Enterprise support
- Energy efficiency
- Emissions reduction
- Active travel measures
- Severe weather response
-

KPIs will continue to be added as necessary by the sector and LCCC will contribute relevant information as required, to assist in highlighting the progress of the local government sector on climate action.

6.3.1 Reporting Requirements and Arrangements

Climate action is mandated for local authorities as part of broader concerted efforts and response measures nationally to meet the 2030 targets and to strive towards a climate resilient and net zero society by 2050. Strengthened reporting and monitoring frameworks are now part of the mechanism to account for how local authorities are achieving and supporting local level climate action in the context of delivering on the national climate objective.

The implementation of the LACAP (both adaptation and mitigation monitoring) will be monitored via an in-house tracking system (further guidance expected from CARO on monitoring and reporting of LACAP action delivery) with key input from the CAT in terms of action delivery. The Council will also facilitate reporting to elected members, and the Environment and Climate Action SPC on an annual basis. In accordance with Part 3(w) of the Local Authority Climate Action Charter, the Council report to the Department of the Environment, Climate and Communications on progress on climate action at local level as part of the delivery of the national climate objective. Progress on all actions as set out in this draft LACAP will be reported via a reporting tool developed by CARO. Covenant of Mayors As signatory to the Covenant of Mayors for Climate and Energy since 2017, the Council commits to the completion and monitoring of a Sustainable Energy and Climate Action Plan (SECAP). This Draft LACAP now reflects and supports the requirements of the Covenant of Mayors SECAP and monitoring carried out in respect to the LACAP will issue to the Covenant of Mayors call for monitoring returns.

6.3.2 Internal Reporting

The Council will update and report progress on the implementation of the actions across all Action Areas of the Climate Action Plan. This will be through its relevant governance and reporting structures and communication channels.

A Climate Action Steering Group will be formed to, ensuring alignment with legislation, mainstreaming climate action across LCCC, and ensuring the climate reporting and evaluation requirements of the local authority are met. The Steering group will be chaired by the Director of Service for Planning Environment and Place Making who will report progress to Management Team

Each of the action teams (including the Decarbonising Zone sub-group) will report progress on actions, against the established tracking measures, to the Climate Action Steering Group.

Regular reports and updates will be provided to the Climate Action, Biodiversity and Environment, Strategic Policy Committee (SPC) and Council Meetings at least biannually, or as required, and an end of year report will be made available annually.

Progress in implementing climate actions under this plan will also be communicated via THE Council's website.

6.3.3 External Reporting

LCCC reports its activities across a range of programme, which include.

6.3.3.1 National Climate Action Plan

LCCC will, in accordance with part 3(w) of the Local Authority Climate Action Charter, report to the Department of the Environment, Climate, and Communications on progress on climate action at local level as part of the delivery of the national climate objective. Progress on all actions will be reported via a reporting tool developed by CARO.

6.3.3.2 National Oversight and Audit Commission (NOAC)

LCCC report to the National Oversight and Audit Commission (NOAC), who as part of their statutory functions scrutinise the performance of local government bodies against relevant indicators. The Council reports on a number of indicators in relation to the area of climate action and the results are included in the Annual Performance Indicator Report.

6.3.3.3 Sectoral Performance

LCCC will report annually on their performance on climate action by way of KPIs to inform the performance of the local government sector on climate action, as part of the local government 'Delivering Effective Climate Action (DECA) 2030 Strategy.

6.3.3.4 Monitoring and Reporting System (M&R)

LCCC will continue to report on their emissions target and energy performance annually to the Sustainable Authority of Ireland (SEAI) through the Monitoring and Reporting (M&R) system.

6.3.3.5 Sustainable Development Goals

The actions and objectives set out in this Climate Action Plan also contribute to the progression of Ireland's commitment to achieving the 2030 Agenda for Sustainable Development which is a "plan of action for people, planet and prosperity". The 17 Sustainable Development Goals (SDGs) provides a framework to assess the impact of our actions across a range of economic, social and environmental themes. These themes have been incorporated into the Corporate Plan and all policies in the County Development Plan 2022 have been aligned to the SDGs. Each action in this Climate Action Plan has been aligned with SDGs.



Fig 6.1: Sustainable Development Goals

6.3.4 Environmental Compliance and Integration

The draft Climate Action Plan sets out a framework to promote, develop and implement climate actions through process improvements, community engagement, progressive development and iterative learning processes; which will be refined throughout the lifetime of the plan.

In order to be realised, projects included in or supported by the draft Climate Action Plan will have to comply, as relevant, with various legislation, policies, plans and programmes (including requirements for lower tier Appropriate Assessment, Environmental Impact Assessment and other licencing requirements as appropriate) that form the statutory decision-making and consent-granting framework, of which the Plan is not part and does not contribute towards. These considerations include the Water Framework Directive, a European Union framework that sets standards for water protection and management.

This integrated approach will allow for the identifying sustainable land use practices, improved water management, and ecosystem preservation, that will seek to mitigate climate change's impact on water resources, safeguarding both the environment and public health. This integrated approach promotes a healthier and more resilient natural environment. It is important that where actions outlined in the plan have environmental co benefits these are captured.

The following Environmental Principles shall help to support future projects.

- Promote climate action projects that support and maximise environmental co benefits, such as biodiversity protection and enhancement; improved air, water or soil quality; or enhanced recreation, amenity and cultural heritage value, to ensure win-win benefits are gained

- Support or facilitate climate action related projects and initiatives which seek to make improvements in soil structure, management and health by increasing soil organic carbon which will create the environmental co-benefits of improving flood resilience by enhancing water holding capacity of soils and increasing the level of GHG sequestration associated with land use functions.
- Ensure all development underpinned or supported by climate action is planned and implemented in a manner that appropriately considers the potential for environmental co-benefits, potential environmental impacts and environmental protection requirements. No climate action related development project that is likely to have a significant negative effect on the receiving environment shall be supported.
- Ensure climate action related projects are carried out in a manner that promotes climate action cultural heritage co-benefits, and do not result in unauthorized physical damage to cultural, archaeological or architectural features, or unauthorized or inappropriate alteration of the context of sensitive cultural heritage features.
- Ensure climate action related projects are carried out in a manner that promotes climate action water quality co-benefits and aligns with the provisions of the Water Framework Directive and relevant River Basin Management Plan.
- Flood and coastal defence projects, or related maintenance works shall be carried out in a manner that promotes climate action biodiversity related co-benefits and shall have due regard for the protection and enhancement of rare, protected or important habitats and species.
- Ensure that the mitigation measures outlined in Section 8 of the SEA Environmental Report are implemented in the course of implementing this plan.

7 SCHEDULE OF ACTIONS

TRAVEL AND MOBILITY

Ref.	Action	Tracking Measure	Lead	Partners	Impact	SDGs
Objective 1: Modal Shift - Support the shift to more sustainable transport modes such as walking, cycling and public transport						
T1	Increase the use of public transport through the implementation of the bus connects programme. Promote - through control or influence, as appropriate - project adherence to planning and environmental protection criteria	No. of routes completed	Travel and Transport Strategy	NTA, Bus Eireann, TII	Mitigation	11
T2	Develop and implement a park and ride strategy having due regard to environmental sensitivities such as the receiving water environment, biodiversity, European sites, local air quality, traffic and transport conditions and cultural heritage .	No. Park and Ride Locations implemented	Travel and Transport Strategy	NTA, Bus Eireann, TII	Mitigation	9, 11
T3	Examine the feasibility of the provision of new greenways either within disused rail lines or immediately adjacent to existing or proposed rail corridors having due regard to environmental sensitivities such as archaeology, European sites, biodiversity and amenity value, and the potential to enhance ecological connectivity	KMs of new greenways provided	Mid West Road Design Office	NTA, Failte Ireland, Active Travel, Travel and Transport Strategy	Adaptation	11, 13
T4	Implement the Active travel programme in particular the Limerick Metropolitan Cycle Network Study having due regard to environmental sensitivities such as archaeology, European sites, biodiversity and amenity value, and the potential to enhance ecological connectivity	No. of routes completed	Active Travel Team	National Transport Authority	Mitigation	11, 13
T5	Deliver a network of secure, public bicycle and powered personal transportation parking, to accommodate a variety of bike types across the County, including at schools, parks, playgrounds, towns, and villages having due regard to environmental sensitivities such as the receiving water environment, biodiversity, European sites, and local air quality.	No. of secured parking spaces provided	Active Travel Team	National Transport Authority	Mitigation	11
T6	Continue to promote active travel, for a wide range of ages, abilities and journey types, utilising LCCC's active travel website, social media and events.	No of updates provided on our communication channels	Active Travel Team	National Transport Authority	Mitigation	10, 11

Ref.	Action	Tracking Measure	Lead	Partners	Impact	SDGs
Objective: Support the provision of EV infrastructure and other infrastructure across the County to support the transition to zero emissions vehicles						
T7	Prepare an EV charging strategy to support 'public residential and destination charging' locations having due regard to environmental sensitivities such as the receiving water environment, biodiversity, European sites, local air quality, and cultural heritage.	Strategy Developed	Travel and Transport Strategy	NTA, ZEVI	Mitigation	7, 9, 11
T8	Prepare a freight strategy to support last mile logistics	Freight strategy adopted	Travel and Transport Strategy	TII	Mitigation	9, 11
Objective: Future-proof the transport network to adapt to the risks posed by Climate change						
T9	Implement an Annual Gully Cleaning Scheme (AGCS) ensuring the plan takes nature-based solutions and protection of biodiversity into consideration.	Annual Update Report	Road Traffic and Cleansing		Adaptation	11
T10	Implement a bridge rehabilitation programme that is resilient to the impacts of Climate Change having due regard to the need to appropriately protect and conserve protected structures in accordance with relevant protected structures regulations, and the need to not negatively impinge on any protected species or European sites.	Annual Update Report	Road Traffic and Cleansing		Adaptation	11
T11	Carry out maintenance and rehabilitation of regional and local roads in accordance with the guidance document on the climate adaptation of regional and local roads having due regard to environmental sensitivities such as the receiving water environment, biodiversity, European sites, and local air quality.	Annual Update Report	Road Traffic and Cleansing		Mitigation	9, 11
T12	In road construction projects, minimise the use of virgin materials and promote the use of reclaimed asphalt pavement (RAP) or low carbon alternatives Ensure material reuse takes place in accordance with Regulation 27 and 28 of the Waste management Act and materials reused are inert and environmentally non-hazardous.	Annual Update Report	Road Traffic and Cleansing		Mitigation	9, 11
Objective: Transition all council fleet and Internal Combustion Machinery (ICE) to be zero emissions						
T13	Prepare inventory of Local Authority fleet, including leased vehicles and status of same	Inventory completed	Road Traffic and Cleansing	Travel and Transport Strategy	Mitigation	9, 11

Ref.	Action	Tracking Measure	Lead	Partners	Impact	SDGs
Objective: Transition all council fleet and Internal Combustion Machinery (ICE) to be zero emissions						
T14	Assess individual vehicles of the Class (GVW) available in EV format. Ascertain the minimum annual KM to be of benefit as a change from ICE (Internal Combustion Engine) to EV. Agree a fleet replacement plan to comply with SI-381-2021 whilst ensuring appropriate end-of-life management practices are in place for Electric Vehicles under the ownership of local authorities.	Number of vehicles replaced by electric vehicles	Road Traffic and Cleansing	Travel and Transport Strategy, Finance	Mitigation	9, 11
T15	For the vehicles that will not migrate to EV, assess EURO Stage emissions and look at replacements with newer improved emission levels. Alternatively Switch from DERV to HVO (Hydrotreated Vegetable Oil) proposed test at Park rd depot before roll out to main depots Ensure renewable fuels procured by the local authority are sourced from sustainable sources.	Implementation of test activities	Road Traffic and Cleansing	Travel and Transport Strategy	Mitigation	9, 11
T16	Assess depots etc. for suitability for EV charging and parking to include potential for solar generation to support charging Ensure development supported by the strategy is delivered in a manner that has due regard to environmental sensitivities (European sites, biodiversity, built heritage, glint and glare impact) and available grid capacity.	Delivery of Report	Road Traffic and Cleansing	Facilities	Mitigation	9, 11
T17	Assess of non-vehicle ICE usage within the organisation, Con Saws, Leaf Blowers, etc. to establish what can be migrated to chargeable options.	Inventory Completed	Road Traffic and Cleansing		Mitigation	9, 11
T18	Assess & record ICE vehicle idling and implement training programme to increase awareness and reduce occurrence.	No. of staff trained	Road Traffic and Cleansing	Human Resources	Mitigation	9, 11
T19	Examine the viability of establishing an EV pool to include optimum locations. Establish charging locations and booking platform.	Establishment of system	Road Traffic and Cleansing	Finance, Human Resources	Mitigation	9, 11
T20	Appoint a dedicated Walking and Cycling Officer within the Local Authority	Officer Appointed	Human Resources	Travel and Transport Strategy, Active Travel	Mitigation	9, 11
T21	Implement a smarter travel workplace plan for corporate buildings	Delivery of Plan	Human Resources	Facilities, Human Resources, Travel and Transport Strategy	Mitigation	9, 11

BUILT ENVIRONMENT AND ENERGY

Ref.	Action	Tracking Measure	Lead	Partners	Impact	SDGs
Objective: Create a policy framework to support the transition to carbon neutrality across county.						
B1	Implement the LCCC County Development Plan 2023	Core strategy targets as set out in the CDP	Planning		Adaptation	3, 7, 8, 9, 11, 12, 13
B2	Prepare a renewable energy strategy for Limerick incorporating all forms of renewable energy including integrated renewables that will guide the development of new energy infrastructure in the county. This strategy shall be informed by planning and environmental protection related considerations and constraints	Adoption of Strategy	Planning		Mitigation	7
B3	Implement the Catchment Flood Risk Management (CFRAM) programme across Limerick following the OPW Plans (2016) for Athea, Adare, Askeaton, Croom, Foynes, Newcastlewest, Rathkeale, Castleconnell and Limerick City and Environs. Ensure due regard is given to promoting Sustainable Drainage Systems, nature-based solutions, and environmental sensitivities, including water quality, biodiversity, European sites, riparian corridors and aquatic ecology.	Number of schemes completed	Planning, Environment and Place-Making	OPW	Adaptation	11
B4	To support communities to be make the transition to EV it is necessary to set out a strategy for the development of a public charging network across the county that is based on site suitability, grid capacity and demand. The strategy will identify both on street and off street options including the provision of eMaaS hubs. Ensure development supported by the strategy are delivered in a manner that has due regard to environmental sensitivities (European sites, biodiversity, built heritage) and available grid capacity.	Strategy Completed	Travel and Transport Strategy	Environment	Mitigation	9, 11
B5	Carry out a feasibility study on the introduction of a district heating network in Limerick City	Study Completed	Planning, Environment and Place-Making	DECC, LDA, SEAI	Adaptation	7
Objective: Provide additional infrastructure to support communities to become climate resilient						
B6	Investigate the establishment of a sustainable investment fund to support the retrofitting of historic buildings across Limerick	Report completed	Climate Action Team	DG REFORM, DPER, DECC, SEAI	Adaptation	7, 11
B7	Support owners of historic building to carry out appropriate retrofitting initiatives by developing guidance and supports	Guidance Document Published	Climate Action Team	Conservation Officer	Adaptation	7, 11

Ref.	Action	Tracking Measure	Lead	Partners	Impact	SDGs
Objective: Provide additional infrastructure to support communities to become climate resilient						
B8	Partner with the Chamber of Commerce to encourage businesses to carry out energy efficiency upgrade works to their premises and to reduce their carbon emissions	No. of buildings upgraded	Climate Action Team	Chamber of Commerce, SEAI	Adaptation	7, 11
Objective: Increase the resilience of people, businesses and infrastructure to the effects of climate change						
B9	Implement the Blue Green Infrastructure strategy for Limerick City and Environs whose aim is to inform and guide the planning and management of green and blue spaces in Limerick City and Environs, including our rivers, parks and open green spaces, helping drive the transition to a low carbon and climate resilient society having due regard to opportunities to enhance tourism, recreation and cultural heritage value associated with routes, and environmental sensitivities such as the receiving water environment, local air quality, biodiversity, European sites, and cultural heritage related sensitivities.	No. of actions implemented	Environment	NTA, TII, Bus Eireann, Active Travel, Travel and Transport Strategy	Adaptation	3, 11, 13, 14, 15
B10	Implement the LSMATS Strategy was prepared by the NTA in collaboration with Limerick City and County Council. The strategy aims to deliver a transport system for the region, which will enable it to become an environmentally sustainable and unified metropolitan unit use influence and control, as appropriate, to promote climate action co-benefits and development project conformance with planning and environmental protection requirements.	Modal split, Carbon reductions	NTA, TII	Transport Strategy	Adaptation	11
B11	Support the implementation of the Shannon Estuary Taskforce Plan sets out recommendations for the delivery of up to 30GW of Atlantic Offshore Wind through the Estuary by 2050, and measures to maximise the industrial development opportunities arising from this whilst advocating and exerting influence to ensure supported projects promote climate action co-benefits and do not contravene relevant environmental protection criteria or cause significant negative environmental effects.	No. of actions implemented	Dept of Enterprise	SFPCO	Mitigation	7, 11
Objective: Implement measures to reduce carbon emissions from all council buildings by 51% by 2030 and to be net zero by 2050						
B12	Carryout an energy audit of Council properties to identify the scale of investments required to meet the required carbon reductions	No. of audits carried out	Facilities	SEAI	Adaptation	11
B13	Set out a roadmap to Decarbonise the council's building stock buildings through: A. Connection to District Heating B. Use of Heat Pumps & associated fabric improvements C. Use of other non-fossil fuels (e.g. Woodchip, Bio LPG)	Roadmap Developed	Facilities		Mitigation	11

Ref.	Action	Tracking Measure	Lead	Partners	Impact	SDGs
Objective: Implement measures to reduce carbon emissions from all council buildings by 51% by 2030 and to be net zero by 2050						
B14	All buildings leased or bought by LCCC shall have an energy rating of A3 or better, as per SI 426 of 2014	No. of buildings leased by Council with a BER of A3	Corporate	Finance	Mitigation	11, 12
B15	Carry out an assessment of the renewable energy potential across the council's property portfolio to include buildings and land. Should include the potential to support EV roll out as well as local REC formation.	Feasibility Report Delivered	Facilities	Road Traffic and Cleansing	Mitigation	7
B16	Install maximum solar PV on appropriate LCCC owned corporate building whilst having due regard to environmental sensitivities (European sites, biodiversity, glint and glare impacts built heritage).	No. of buildings with renewables installed	Facilities		Mitigation	7, 11
B17	Continue retrofitting Council owned social housing to reduce carbon emissions as well as addressing fuel poverty having due regard to environmental sensitivities such as local human receptors, European sites and biodiversity, and the need to appropriately protect and conserve protected structures in accordance with relevant protected structures regulations.	No. of houses retrofitted	Housing		Mitigation	7, 11
B18	Make applications to Pathfinder. Pathfinder is a programme operated by SEAI. It provides finance to achieve substantial energy savings by bundling similar large-scale projects together. It is operated by SEAI having due regard to environmental sensitivities such as biodiversity, European Sites and sensitive human receptors.	No. of applications made to SEAI	Facilities		Mitigation	7, 11

GOVERNANCE AND LEADERSHIP

Ref.	Action	Tracking Measure	Lead	Partners	Impact	SDGs
Objective: Ensure that climate action is embedded in all Council actions, plans & policies						
G1	All staff training for new staff will include specific input on Climate Action and the understanding of climate change.	Annual Report	Human Resources	Corporate, Climate Action Team	Adaptation	13
G2	Deliver an education and awareness building programme for LCCC staff and councillors	Annual Report	Climate Action Team	Corporate	Adaptation	13
G3	The Management Team Agenda shall include a progress update on implementation of the LACAP as a standing item on its monthly agenda.	monthly report	Corporate	Corporate	Adaptation	13
G4	Partner with the Climate Action Regional Office (CARO) Atlantic Seaboard South in implementing the LACAP	Annual Report	Climate Action Team	Corporate	Adaptation	13
G5	Quantify the carbon-footprint of staff and Councillors' business travel, and explore setting a carbon budget for business travel.	Annual Report	Human Resources	Corporate	Adaptation	13
G6	Implement a methodology for carbon proofing major decisions, projects and strategies	No. of projects proofed for climate impact	Finance	Corporate	Adaptation	13
G7	Establish a clear set of KPI's to measure the progress to carbon neutrality	Annual Report	Climate Action Team	Corporate	Adaptation	13
G8	Develop a protocol to climate proof capital plans	Process template agreed and in place	Climate Action Team	Corporate	Adaptation	13
G9	Ensure that the Councils emergency plans are climate proofed.	Annual Report	Climate Action Team	Corporate	Adaptation	13
Objective: Ensure that key stakeholders are actively engaged and involved in implementing climate action initiatives across the county.						
G10	Establish a number of implementation teams across the Council to champion climate action across the council.	Team is Active	Climate Action Team	Corporate	Adaptation	13
G11	Establish a public-sector forum with key state agencies across Limerick to deliver on the ambitions of this plan.	Annual Report	Corporate	Climate Action Team	Adaptation	13
G12	Continue to participate in and maximise the benefits of EU-funded environmental and climate-related European Projects.	Annual Report	EU Projects	Climate Action Team	Adaptation	13

Ref.	Action	Tracking Measure	Lead	Partners	Impact	SDGs
Objective: Ensure that key stakeholders are actively engaged and involved in implementing climate action initiatives across the county.						
G13	Use the Decarbonisation Zone to engage stakeholders in innovative actions, using pilot projects designed to reduce emissions.	No. of projects commenced	Climate Action Team	Corporate	Adaptation	13
G14	Ensure Climate Action pilot projects are inclusive and driven at community level.	All projects are mapped	Climate Action Team	Corporate	Adaptation	13
Objective: Ensure that the adequate resources, structures and processes are in place to support accountability, transparency and delivery with regards to climate action						
G15	Establish a reporting and monitoring system to track the progress of the climate actions.	Annual Report	Climate Action Team	Corporate	Adaptation	13
G16	Establish a Steering Group with representatives of key stakeholder groups to oversee plan implementation.	Steering Group Established	Corporate	Climate Action Team	Adaptation	13
G17	Adopt and implement the Green Public Procurement Strategy.	Steering Group Established	Corporate	Climate Action Team	Adaptation	13

COMMUNITY AND PARTNERSHIP

Ref.	Action	Tracking Measure	Lead	Partners	Impact	SDGs
Objective: Actively engage with communities on Climate Action Initiatives that impact them						
C1	Deliver an education and awareness building programme which includes a suite of engagement tools to support community capacity building	No. of engagement tools developed	Climate Action Team	Digital Strategy	Adaptation	2, 3, 10, 13
C2	Increase participation in the Green-Schools programme in Limerick City and County	No. of Schools in the programme	Climate Action Team	Environment	Adaptation	13
C3	Create a new Citizen Innovation lab on the Innovative Limerick campus with the support of the URDF funding.	Development of the space	Climate Action Team		Adaptation	13
C4	Develop a new digital platform for the Citizen Innovation Lab that can actively support and enable communities collaborate and activate their Climate Action Plans	Development of digital platform	Digital Strategy	Climate Action Team	Adaptation	13
Objective: Deliver an education and awareness building programme across the county that all communities can access						
C5	Deliver education and behaviour change campaigns to encourage reduction in food waste and reducing, reusing and recycling residual waste	No. of Campaigns Developed	Climate Action Team	Environment, Regional Waste Management Agency	Adaptation	2, 11, 13
C6	Develop Cultural, social, recreational & environmental initiatives to promote integration of different cultural communities into implementation of climate action initiatives	No. of Initiatives Delivered	Climate Action Team	Rural Community and Culture Development	Adaptation	3, 13

Ref.	Action	Tracking Measure	Lead	Partners	Impact	SDGs
Objective: Deliver an education and awareness building programme across the county that all communities can access						
C7	Complete the SMARTLABs SEAI supported project which supports up to 100 residents / property owners better understand their energy usage and promotes behavioural change to reduce overall energy consumption.	No. of Residents Taking Part	Climate Action Team	SEAI, University of Limerick	Adaptation	7, 11, 13
C8	Develop Group-based programmes and activities to build social and environmental inclusion	No. of Programmes Developed	Climate Action Team	DECC	Adaptation	3, 13
C9	Utilise the facilities of the CIL and other programmes to encourage communities to form SECs. Facilitate project adherence to planning and environmental protection requirements.	No. of Interactions with Communities	Climate Action Team	SEAI	Adaptation	7, 11
Objective: Support communities to actively engage with the Climate crisis						
C10	Create a Community SDG Dashboard for tracking community climate programs in limerick city and county	Delivery of the mapping tool	Climate Action Team		Adaptation	3, 13
C11	Continue to deliver on the Community Climate Action Fund	No. of projects Funded	Climate Action Team	CARO, DECC	Adaptation	3, 7, 11, 13
C12	Deliver Engagement programmes regarding funding opportunities and local development	No. of Events held	Climate Action Team	Community	Adaptation	13
C13	Utilise the Creative Climate Action Communities as a driver of community climate action	No. of projects Funded	Climate Action Team	Arts Office	Adaptation	3, 7, 11, 13
C14	Partner with community groups/ organisations/academic institutes (green schools) in designing amenities and services for them and involve them in the decision-making	No. of New Stakeholders activated	Climate Action Team	PAUL Partnership, Ballyhoura Development CLG, West Limerick Resources	Adaptation	3, 7, 11, 14

NATURAL ENVIRONMENT

Ref.	Action	Tracking Measure	Lead	Partners	Impact	SDGs
Objective: Protect conserve, and enhance the County's biodiversity and heritage through the implementation of effective climate-related actions						
N1	A local Biodiversity Action Plan will set out measures to protect and enhance local biodiversity, including climate-relevant measures. Implement relevant actions of the national Bio-diversity Action Plan at local level having due regard to co-benefit opportunities such the maintenance and improvement of water quality in line with the aims of the Water Framework Directive, or the potential for increasing carbon sequestration levels.	Biodiversity Action Plan Delivered	Biodiversity Officer	Environment	Mitigation	13, 15

Ref.	Action	Tracking Measure	Lead	Partners	Impact	SDGs
Objective: Protect conserve, and enhance the County's biodiversity and heritage through the implementation of effective climate-related actions						
N2	Set targets to maintain existing woodlands in good condition and plant new native trees in urban and rural areas, subject to independent ecological assessment, to enhance carbon storage, biodiversity and landscape, air quality, and urban heat island mitigation.	No. of Areas Maintained	Environment	Biodiversity Officer	Mitigation	13, 15
N3	A wetland survey will inform council strategy and planning documents and implement recommendations in terms of conservation and restoration of wetlands.	Completion of Survey	Environment	Biodiversity Officer	Mitigation	13, 15
N4	Develop a Local Food Growing Strategy and expand the number of community growing projects and support them with skills training, materials and capacity building.	Local Food Growing Strategy Delivered	Environment	Food Waste	Mitigation	2, 3, 11, 13
N5	Support the implementation of Marine Spatial Plan and to protect the Shannon estuary	Annual Report	Housing		Mitigation	7, 11
N6	Deliver a habitat protection and creation of new habitats, landscapes, hedgerows strategy having due regard to the need to appropriately protect, conserve and enhance important habitats and species and European sites, and support the maintenance and improvement of water quality in line with the aims of the Water Framework Directive. This plan shall be developed by a competent ecology team, and shall have due regard to the need to appropriately manage these habitats.	Habitat Protection Strategy Delivered	Environment		Mitigation	13, 15
N7	Implement a policy to cease the use of chemical pesticides and herbicides across council operations	Policy Developed	Environment		Mitigation	13, 15
N8	Carry out ecological/habitat survey and highlight areas at risk and those suitable for ecological restoration and, where appropriate, enhanced carbon storage	Survey Completed	Environment	Climate Action Team	Mitigation	13, 15
N9	Create and maintain pollinator-friendly habitats based on most up to date scientific advice from AIPP.	No. of Active Pollinators	Environment	Climate Action Team	Mitigation	13, 15
N10	Work with Irish Water and LAWPRO (Local Authority Water Programme) to identify the impacts of critical and vulnerable receptors in accordance with the River Basin Management Plan and Water Framework Directive	No. of Meetings Held	Environment	Climate Action Team	Mitigation	13

Ref.	Action	Tracking Measure	Lead	Partners	Impact	SDGs
Objective: A safe and healthy environment that is resilient to the effects of climate change						
N11	Identify urban areas, towns and villages to be greened (tree planting, pollinators, community gardens, sensory gardens, allotments natural play areas) using native species.	No. of Areas Identified	Environment	Planning	Mitigation	3, 11, 13
N12	Investigate community tree-planting and biodiversity enrichment programmes (Mini-Forest initiatives) using native species.	No. of Mini Forests Developed	Environment		Mitigation	13, 15
N13	Support Citizen Science projects that target our natural environment	No. of Projects Support	Environment		Mitigation	13, 14, 15
N14	Create Engagement Sessions for communities on how to develop their Town/Village Biodiversity Plans	No. of Sessions Held	Climate Action Team	Rural, Community and Culture Development, PAUL Partnership, Ballyhoura Development CLG, West Limerick Resources	Mitigation	11, 13, 14, 15
N15	Meet annual inspection targets as per EPA National Agriculture Inspection Plan while ensuring sustainable transport modes are used to travel to and from inspection sites, where feasible	No. of Targets met	Environment		Mitigation	13
N16	Undertake and expand upon air quality monitoring capabilities	Delivery of Expansion Programme	Environment		Mitigation	13
N17	Enable improvements in air quality through inspections of fuel suppliers to address unauthorised sale of unapproved solid fuels	No. of Inspections held	Environment		Mitigation	13

ENVIRONMENT AND CIRCULAR ECONOMY

Ref.	Action	Tracking Measure	Lead	Partners	Impact	SDGs
Objective: Reduce waste from the Limerick City and County Council operations and actively promote waste minimisation policies						
E1	Investigate the development of composting centres to promote circularity of green waste having due regard to planning and environmental considerations and constraints.	No. of Composting Facilities Delivered	Environment		Adaptation	11, 13

Ref.	Action	Tracking Measure	Lead	Partners	Impact	SDGs
Objective: Reduce waste from the Limerick City and County Council operations and actively promote waste minimisation policies						
E2	Implement the national waste management plan for a circular economy at a local level. These include addressing the following targets - 60% of all waste to be recycled by 2030, a 50% reduction in food waste by 2030, 70% of construction waste to be recycled	% of Waste Recycled	Environment	Regional Waste Management Office	Adaptation	12, 13
E3	Include technologies to improve water efficiency within LA buildings (such as rainwater harvesting, grey water systems, flow regulators, water efficient toilets and showerheads).	% of Water Consumption Reduced	Environment	Facilities	Mitigation	6, 11, 12
E4	LA own developments seek where feasible to re-use materials and/or use/support innovative low-carbon materials/building techniques	Policy Developed	Corporate		Mitigation	9, 11, 12, 13
E5	Integrate Nature Based Solution, including biodiversity and water protection measures, into Local Authority Own Developments including public realm/Section 38 and Active Travel initiatives	No. of Developments incorporating Nature Based Solutions	Environment	All Departments	Mitigation	11, 12, 13
E6	Promote efficient water use by businesses and the wider community and create a business case for rainwater capture	Business Case Delivered	Environment	Chamber of Commerce	Mitigation	6, 13
E7	Explore initiatives to significantly reduce the quantity of single-use plastics used in LCCC premises and wider commercial establishments.	% Reduction of Single Use Plastics	Environment	Regional Waste Management Agency	Mitigation	12, 13
E8	Promote waste minimisation and sustainability into the event licencing and casual trading processes	Policy Guidance published	Environment	Regional Waste Management Agency	Mitigation	12, 13
E9	The development of the Opera Site by Limerick 2030 DAC will undertake a number of initiatives to demonstrate best practice in minimisation of waste.	Annual Report	Limerick 2030 DAC	Regional Waste Management Agency	Mitigation	9, 11
E10	Introduce a programme of actively managing waste in all LCCC buildings	Waste Policy Developed	Facilities	Environment	Mitigation	12, 13
E11	Prepare an updated noise action plan	Plan is Implemented	Environment		Adaptation	11, 13



Comhairle Cathrach
& Contae **Luimnigh**

Limerick City
& County Council

www.limerick.ie