



Kildare
Climate
Action
Office

Local Authority Climate Action Plan 2024-2029



Comhairle Contae Chill Dara
Kildare County Council

Image: Location Maynooth. Source: Eastern Midlands CARO

Hieroglyphic Stairway

it's 3:23 in the morning
and I'm awake
because my great great grandchildren
won't let me sleep
my great great grandchildren
ask me in dreams
what did you do while the planet was
plundered?
what did you do when the earth was
unraveling?

surely you did something
when the seasons started failing?

as the mammals, reptiles, birds were all dying?

did you fill the streets with protest
when democracy was stolen?

what did you do
once
you
knew?

I'm riding home on the Colma train
I've got the voice of the milky way in my dreams

I have teams of scientists
feeding me data daily
and pleading I immediately
turn it into poetry

I want just this consciousness reached
by people in range of secret frequencies
contained in my speech

I am the desirous earth
equidistant to the underworld
and the flesh of the stars

I am everything already lost

the moment the universe turns transparent
and all the light shoots through the cosmos

I use words to instigate silence
I'm a hieroglyphic stairway
in a buried Mayan city
suddenly exposed by a hurricane

a satellite circling earth
finding dinosaur bones
in the Gobi desert
I am telescopes that see back in time

I am the precession of the equinoxes,
the magnetism of the spiraling sea

I'm riding home on the Colma train
with the voice of the milky way in my dreams

I am myths where violets blossom from blood
like dying and rising gods

I'm the boundary of time
soul encountering soul
and tongues of fire

it's 3:23 in the morning
and I can't sleep
because my great great grandchildren
ask me in dreams
what did you do while the earth was
unraveling?

I want just this consciousness reached
by people in range of secret frequencies
contained in my speech

Drew Dellinger

website: drewdellinger.org

twitter: [@drewdellinger](https://twitter.com/drewdellinger)

Front Cover Images

1. Solas Bhríde Kildare: Source Design
2. Athy Library / Former Dominican Church Athy: Mark McGuire. Source Kildare County Council.
3. Maynooth Train Station: Mark McGuire. Source Kildare County Council.
4. Aras Chill Dara Naas: Mark McGuire. Source Kildare County Council

Foreword

Climate Change is increasingly relevant to all our lives. As the Cathaoirleach of the County of Kildare I am acutely aware of the need to view all aspects of the work we undertake on behalf of the communities we serve, through the climate lens. As Councillors it is essential to examine policy and budgets in light of mitigation and adaptation measures needed to secure the future of all those who live, work and visit our county.



Every member of society can effect change and the actions within our Climate Action Plan will steer us all to change our behaviours and build resilience. The plan takes into consideration the needs at local level and the broader county level. Every person who has a connection to county Kildare is represented by this plan through the work of the PPN, consultation on the LECP, business inputs through the Chamber of Commerce and other entities.

Thank you for your interaction and participation in our collective futures.

Cllr Daragh Fitzpatrick
Cathaoirleach of the County of Kildare

Kildare County Council is committed to climate action, to leading by example, and playing our part in addressing the crises of Climate and Biodiversity.

The Council signed the Climate Action Charter in 2019 and in that same year, published our inaugural, Climate Change Adaptation Strategy 2019-2024. Kildare County Council is also the lead authority in the Eastern and Midlands CARO (Climate Action Regional Office), supporting and co-ordinating the work of 17 local authorities to deliver climate change at a local level. Kildare County Council declared 2023 our 'Climate Action Year' to prioritise mainstreaming of climate action within the Council through the progression of Kildare's Climate Action Plan and actively responding to this existential crisis.

To meet the increasing challenge of climate change we have prepared this plan to support meeting the national obligation of achieving a 51% reduction in greenhouse gases emission and to increase energy efficiency by 50%.



The Plan will be delivered in multiple ways. At a corporate level, Kildare County Council will increase energy efficiency throughout our public buildings, fleet and other assets and simultaneously decrease greenhouse gas emissions through our functional areas to reach the targets set. Locally, the Decarbonising Zone (Chapter 5) based in Maynooth is a test bed for change and the positive resulting actions will assist the Council and communities around our County on our decarbonising journey.

Our plan for Kildare is necessarily ambitious and illustrates our commitment to Climate Action. I look forward to building an increasing resilient county with you.

Sonya Kavanagh
Chief Executive, Kildare County Council

Contents

1	Executive Summary	6
2	Introduction	12
2.1	Consultation on this Plan	16
2.2	Overview of Climate Change	16
2.3	Climate Policy Context	18
2.3.1	International Climate Change Policy	19
2.3.2	Climate Change Policy in Ireland	21
2.3.3	Current National Baseline and Target Compliance	24
2.4	Local Authority Climate Action Planning	25
2.5	Structure of the Climate Action Plan	25
3	Evidence-Based Climate Action	26
3.1	Importance of evidence-based Climate Action Planning	28
3.2	Climate Change Risk Assessment	29
3.2.1	Current Climate Risk Assessment	30
3.2.2	Future Climate Risks and Impacts	33
3.3	Summary of Baseline Emission Inventory	35
3.3.1	Transport	37
3.3.2	Residential	38
3.3.3	Commercial	38
3.3.4	Municipal	39
3.3.5	Social Housing	39
3.3.6	Wastewater	40
3.3.7	Waste	40
3.3.8	Agriculture	41
3.3.9	Baseline Summary	41
4	Framework Of Climate Action	42
4.1	Overview	44
4.2	Plan Vision and Mission	44
4.3	Plan Goals, Objectives and Actions	46
5	Decarbonising Zone Vision And Mission	70
5.1	Overview	72
5.2	Maynooth Decarbonising Zone (DZ)	72
5.3	Summary of the Decarbonising Zone Emissions Profile	74
5.4	Decarbonising Zone Vision and Mission	75
5.5	Register of Opportunities	76
5.6	Decarbonising Zone Priority Areas, Objectives and Actions	78
6	Implementation And Reporting	88
6.1	Planning for Implementation	90
6.2	Funding and Partnerships	91
6.3	Tracking Progress through Key Performance Indicators	92
6.4	Reporting Requirements and Arrangements	93
6.4.1	Internal Reporting	93
6.4.2	Monitoring and Reporting (M&R)	93
6.4.3	Sectoral Performance	93
6.4.4	National Climate Action Plan	93
6.4.5	Covenant of Mayors	93
6.4.6	Sustainable Development Goals	93
6.5	Oversight	94
6.6	Collaboration	94

Tables

Table 2-1: Sectoral Emissions Ceilings	22
Table 3-1: Climate Hazards relevant to Kildare	30
Table 3-2: Predicted Climate Data in Kildare	33
Table 3-3: Input Data for the Baseline Emissions Inventory	35
Table 3-4: 2018 Sectoral Emissions Profile for County Kildare	36
Table 4-1: CAP Actions for Governance & Leadership	48
Table 4-2: CAP Actions for Built Environment and Transport	50
Table 4-3: CAP Actions for Natural Environment & Green Infrastructure	56
Table 4-4: CAP Actions for Communities: Resilience and Transition	60
Table 4-5: CAP Actions for Sustainability & Resource Management	66
Table 5-1: Sectoral and Total 2018 Baseline for Maynooth DZ	74
Table 5-2: Projected Reduction Targets with DZ Implementation	77
Table 5-3: DZ Actions for Governance & Leadership	79
Table 5-4: DZ Actions for Built Environment and Transport	80
Table 5-5: DZ Actions for Natural Environment & Green Infrastructure	83
Table 5-6: DZ Actions for Communities: Resilience & Transition	85
Table 5-7: DZ Actions for Sustainability & Resource Management	86

Figures

Figure 2-1: Council's Scope on Climate Action (Source: Local Authority Climate Action Plan Guidelines, 2023)	15
Figure 2-2: Island of Ireland 1900-2022 Temperature (°C) Anomalies (difference from 1961-1990) (Source: Met Éireann)	17
Figure 2-3: Legislation and Policy Context for the Climate Action Plan (Source: Climate Action Regional Offices)	18
Figure 2-4: United Nations Sustainability Goals	19
Figure 2-5: Delivering Effective Climate Action 2030 Goals	20
Figure 2-6: Total Irish GHG emissions with existing climate measures (orange) and additional climate measures (blue) measures to 2030 relative to the 51% reduction target (grey) (EPA, 2023)	24
Figure 3-1: Climate Change Risk Assessment Methodology	29
Figure 3-2: 30 year record of Climate Hazards in Kildare	31
Figure 3-3: Current Climate Impact Matrix	32
Figure 3-4: Future Climate Impact Matrix	34
Figure 3-5: 2018 Emissions Profile for County Kildare	36
Figure 3-6: Avoid-Shift-Improve Principle (Source: National Sustainable Mobility Policy)	37
Figure 3-7: BER rated dwellings in County Kildare	38
Figure 3-8: Commercial Sector Emissions (tCO _{2e})	38
Figure 3-9: Municipal Sector Emissions (tCO _{2e})	39
Figure 3-10: Social Housing Stock BERs (No)	39
Figure 3-11: Kildare Waste Sector Emissions	40
Figure 3-12: Kildare Agricultural Emissions	41
Figure 4-1: Thematic Areas for CAP Implementation	46
Figure 5-1: Spatial Extent of the Maynooth Decarbonisation Zone	73
Figure 5-2: Sectoral and Total 2018 Baseline for Maynooth DZ	74
Figure 5-3: Scale of Sectoral Emissions Reduction for Maynooth DZ	75
Figure 6-1: Implementing and Reporting Process	90

Appendices

Appendix A: Glossary	95
Appendix B: Abbreviations	97
Appendix C: Sustainable Energy and Climate Action Plan Baseline Report	100
Appendix D: Mapping of Actions with UN SDG, CAP23 Chapters and DECA2030 Goals	104
Appendix E: MapEire Baseline Data	107
Appendix F: Supplementary Details on the Baseline Emissions Inventory	108

1. Executive Summary

Image: Kildare Town



1. Executive Summary

It is now internationally agreed that there is an urgent need to take more ambitious climate action to secure a liveable sustainable future for all global citizens. To secure this sustainable future for the citizens of Kildare, the Council has prepared this Climate Action Plan for the period 2024 to 2029 to create a low carbon and climate resilient County, by delivering and promoting best practice in climate action in Kildare.

This Plan has been prepared to address the requirements of each of the following:

- The Climate Action Plan under the Climate Act 2021;
- The Decarbonising Zone under the Climate Action Plan 2019/2021;
- The Sustainable Energy and Climate Action Plan under the EU Covenant of Mayors for Climate and Energy; and
- The Green Communities Low Carbon Community Plan in collaboration with An Taisce.

This Plan establishes the actions to be delivered by the Council, business and citizens in the County in response to the climate challenge. The launch of this Plan aligns with Kildare's 'Climate Action Year', as noted by the Chief Executive, signalling the commitment of the Council to delivering on this Plan's vision.

The ambition of this Plan is aligned to the Government's **National Climate Objective** which seeks to achieve the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy by 2050. **The Climate Action and Low Carbon Development (Amendment) Act 2021** frames Ireland's legally binding climate ambition to deliver 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 to be delivered through a series of national **Climate Action Plans**.

This local Climate Action Plan addresses both climate mitigation and adaptation measures. **Mitigation** relates to changing how we live, move, consume and manufacture, so as to reduce and/or eliminate the production of greenhouse gases. **Adaptation** refers to dealing with the impacts of climate change and taking practical actions to manage risks, protect communities and strengthen the resilience of the economy.

This Plan sets out how the Council is responsible for enhancing climate resilience, increasing energy efficiency and reducing greenhouse gas emissions, across its own assets, services and infrastructure, to which it is fully accountable for, whilst also demonstrating a broader leadership role of influencing, advocating and facilitating other sectors, to meet their own climate targets and ambitions and to increase climate literacy.

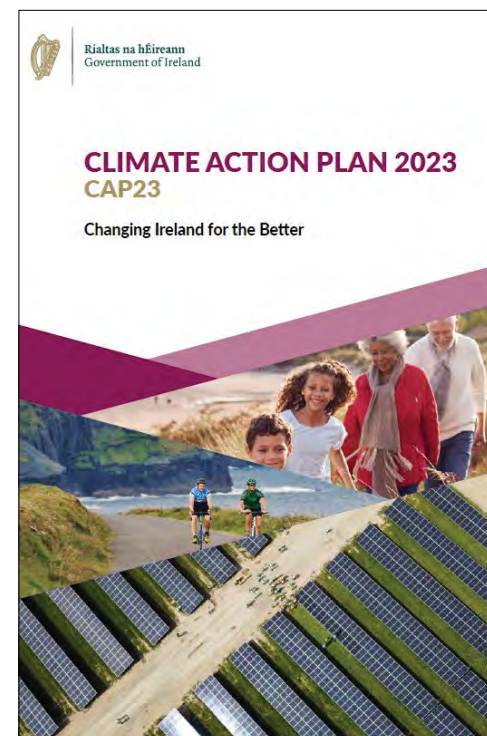
The development of the Plan has had due regard for the **United Nations Sustainable Development Goals** (in particular Goal 13 on Climate Action) as well as European (**European Green Deal, the Paris Agreement 2015, etc.**) and national legislation and policy on climate (**Climate Acts 2015/2021 and the Climate Action Plans**).

Given the requirement for collective climate action, the development of the Plan has been informed by **extensive consultation and collaboration** with all stakeholders. This includes Elected Members, all departments within the Council, neighbouring local authorities, business representatives, agriculture representatives and the general public. All stakeholder input has been taken into consideration in the development of actions as presented within this Plan.

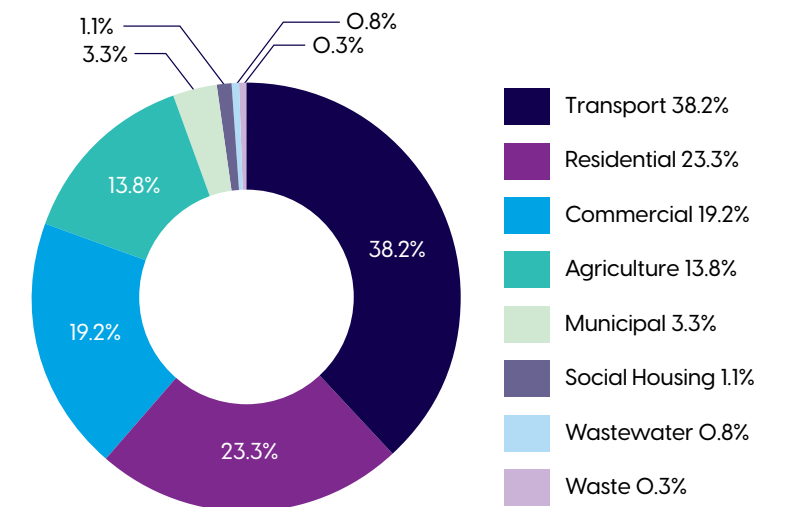
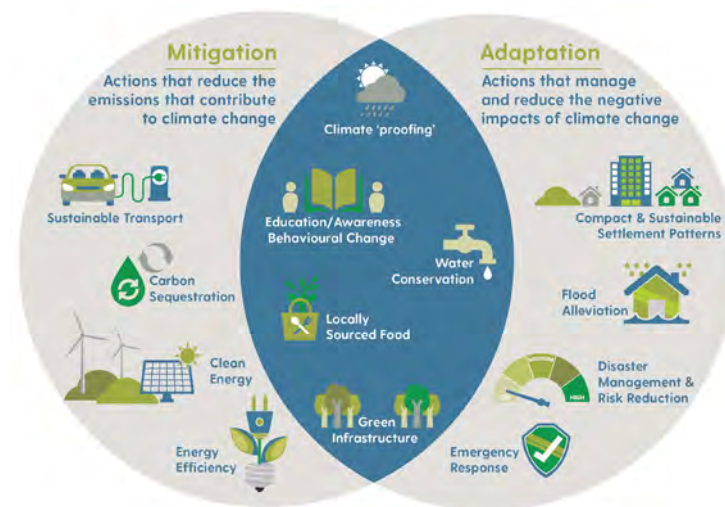
It is essential that climate action planning has due regard for the **scientific evidence base** available to provide a clearly defined pathway for climate action and this Plan is underpinned by two principle scientific assessments.

The first assessment is a **Climate Change Risk assessment** which is developed to understand the current and future risks posed by climate change to Council operations and the county such as flooding, extreme winds, extreme temperatures, etc.

The second is a **Baseline Emissions Inventory** which is a detailed evaluation of the current sources of emissions for a standard year (2018). The baseline emissions for the County is **1,678,583 tonnes** of CO₂e. This Plan will focus actions on the larger sectors of this inventory – in this case transport (38.2%), residential (23.3%) and commercial (19.2%)



National Emission Reduction Objective: To cut economy wide emissions by 51% by 2030



(Source: Eastern and Midland Climate Action Regional Office).

Chapter 3 of this Plan summarises the evidence base both in terms of baseline emissions and current adaptation risk.

On foot of the evidence base gathered, a policy framework for the Plan for Kildare has been developed in line with the following recommended hierarchy:

- An overarching single **Vision** that reflects the shared perspective of a climate resilient and climate neutral future.
- A single plan **Mission** that speaks practically to the grounded purpose of the local authority in delivering effective climate action.
- A set of five **Strategic Goals** that set the context for the climate actions and establish a structured or thematic arrangement of actions.
- A set of 18 high level **Objectives** that support the delivery of the strategic goals whilst framing the appropriate emphasis of the actions.
- 107 individual **Actions** that are specific, action-focused, time-bound and measurable reflecting a scaling up of ambitious local level climate action.

Chapter 4 of this Plan presents the policy base for the implementation of climate actions across the County.

Climate Action Vision for Kildare

Kildare County Council will deliver climate action across all council functions and will lead the community of County Kildare in the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral local economy.

While the development of the Climate Action Plan for the County is a legal requirement, the national Climate Action Plans 2019-2023 mandate that these plans should also include the development of a specified **'Decarbonising Zone'**. A Decarbonising Zone is a defined area chosen to act as a test bed for a range of ambitious climate action measures which, if successful, may be extended to other areas in the County.

The Council has identified **Maynooth** as the Decarbonising Zone for the County given the existing Active Travel Plan, the potential for green measures in public development, the presence of the university as the climate research centre within the State and future potential development of enhanced rail service through the DART project. Most importantly, the timing of this Plan allows for these measures to be incorporated into the Local Area Plan for Maynooth which is being drafted in tandem with this Plan.



(Image: Maynooth Welcome Sign. Source: Mark McGuire).

The development of a register of opportunities and the associated suite of a single vision, five strategic priority areas, 14 objectives and 48 actions for the **Maynooth Decarbonising Zone** followed the same approach as that adopted for the County wide actions with extensive consultation twinned with the establishment of a robust evidence base.

Note that the actions listed for the Decarbonising Zone as the 'test bed' have a higher level of ambition than those listed for the County. The successful implementation of these measures in Maynooth may be followed up with similar actions in other **'Fast Follower'** towns in the County. **Chapter 5** of this Plan presents the policy base for the Maynooth Decarbonising Zone.

This Plan will be implemented by the Council and while the Plan requires a whole-of-Council approach. The delivery of the Plan will be steered by the Climate, Community, Environment and Water Directorate on behalf on the Council. The Council will also work collaboratively and in partnership with a range of key external stakeholders to support the delivery of this Plan.

To ensure that delivery is timely and effective the implementation of the Plan actions will be monitored via an in-house monitoring system coupled with reporting on an annual basis.

'Climate disruption is a global issue, a national issue, and a local issue, for which the window of opportunity to act is closing worryingly fast'.

'The time to act is now. The longer we wait, the more we intensify and perpetuate the injustice of climate change, and we run the risk of correctly being regarded by future survivors of our planet as having been in collusion with the destruction of the lives and life-worlds of some of the most vulnerable peoples of our human family and the biodiversity on which our planetary life depends'.

Michael D Higgins
President of Ireland

2. Introduction

Image: Pollardstown Fen. Source: Eastern Midlands CARO



2. Introduction

Kildare County Council has prepared this Climate Action Plan 2024-2029 to create a low carbon and climate resilient county, by delivering and promoting best practice in climate action, at the local level. This 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 objective 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.

This Plan has been prepared to address the requirements of each of the following obligations and commitments which apply to the Council:

- The Climate Action Plan under the Climate Act 2021;
- The Decarbonising Zone under the Climate Action Plan 2019/2021;
- The Sustainable Energy and Climate Action Plan under the EU Covenant of Mayors for Climate and Energy; and
- The Green Communities Low Carbon Community Plan in collaboration with An Taisce.

In preparing this Plan, the Council has also taken account of other relevant climate policy and legislation and has prepared a climate change risk assessment and an emissions baseline assessment, at a county scale, which are included as part of this Plan.

The Climate (Amendment) Act 2021 specifically requires all local authorities in Ireland to prepare and make a Climate Action Plan, in consideration of wider national climate and energy targets, addressing both mitigation and adaptation measures as follows:

Climate Change Mitigation relates to changing how we live, move, consume and manufacture, so as to reduce and/or eliminate the production of harmful greenhouse gases, it also includes how we best use our land; and Climate Change Adaptation refers to dealing with the impacts of climate change and involves taking practical actions to manage risks, protect communities and strengthen the resilience of the economy (e.g. from flooding, extreme weather events etc).

This Plan sets a clear pathway for the Council to:

Actively translate national climate policy to local circumstances with the prioritisation and acceleration of evidence-based measures; Assist in the delivery of the climate neutrality objective at local and community levels; and Identify and deliver a Decarbonising Zone (DZ) within the local authority area to act as a test bed for a range of climate mitigation, adaptation and biodiversity measures in a specifically defined area, through the identification of projects and outcomes that will assist in the delivery of the National Climate Objective. The successful delivery of actions in the DZ may then be rolled out to other 'Fast Follower' towns in the County.

In addition to the national obligations, the Council is a signatory to the EU Covenant of Mayors for Climate and Energy which is a voluntary initiative supported by the European Commission. As such, the Council is committed to reducing its own emissions by 50% by 2030 compared to the baseline year to be achieved through developing a Sustainable Energy and Climate Action Plan (SECAP). This Plan also fulfils the SECAP function for the County.

Through the development of this Plan the Council has collaborated with An Taisce on developing this Plan as a Green Communities Low Carbon Community Plan for Maynooth. The Council will build on this collaboration to work with An Taisce on the monitoring of implementation of DZ actions in Maynooth.

Set against the backdrop of an evolving and ambitious framework of national climate policy, the Council maintains a strong commitment to mainstreaming climate action across its own operations and functions, whilst also pursuing a leadership role on climate action, at the local level. This Plan demonstrates a coherent approach to climate action across the administrative and political structure of the Council. The Plan is subject to approval by the Elected Members of the Council, following public consultation and engagement during September to November 2023.

A range of other plans, including the Council's Corporate Plan, the Kildare County Development Plan 2023 – 2029 and the Maynooth Local Area Plan 2024-2030 (LAP, under preparation) also support this Plan. In addition, the development of this plan has had due regard to existing climate policy within the County including the [Climate Action Charter](#) and the [Climate Change Adaption Strategy 2019-2024](#).

This Plan sets out how the Council will be responsible for enhancing climate resilience, increasing energy efficiency and reducing greenhouse gas emissions, across its own assets, services and infrastructure, to which it is fully accountable. Simultaneously demonstrating a broader role of influencing, advocating and facilitating other sectors, to meet their own climate targets and ambitions. This is necessary to ensure that the environmental, social and economic benefits that come with climate action, can be fully realised. **Figure 2-1** illustrates the scope of the Council's responsibility on climate action.

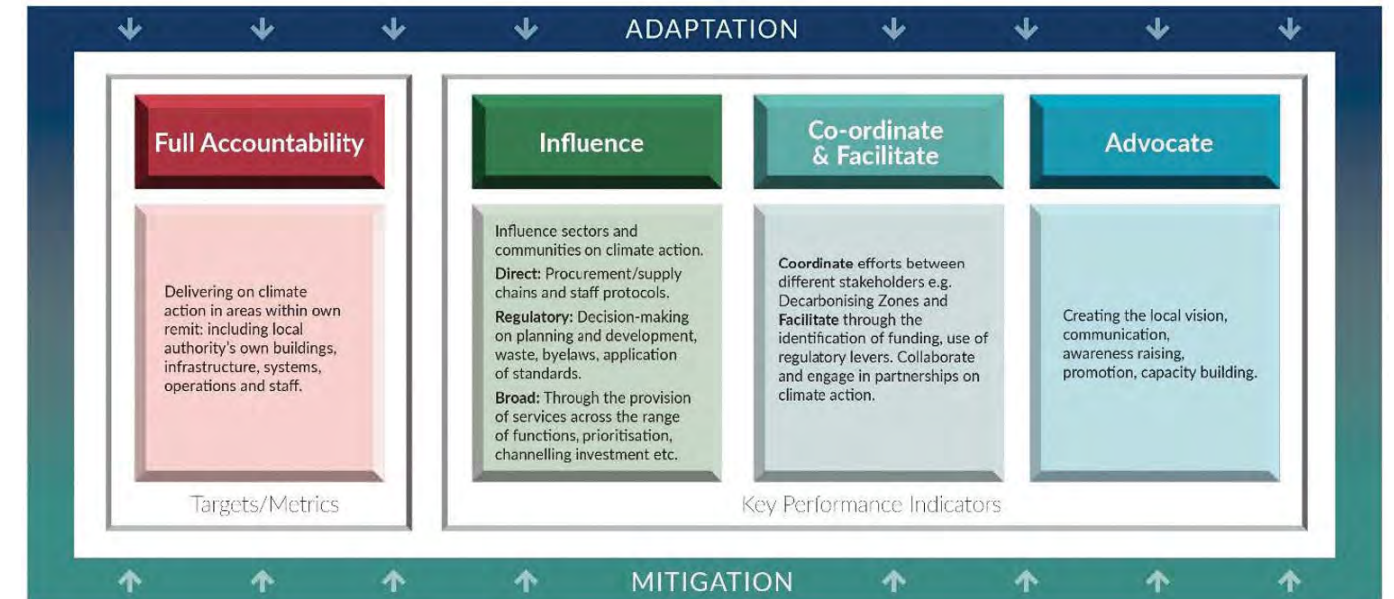


Figure 2-1: Council's Scope on Climate Action (Source: Local Authority Climate Action Plan Guidelines, 2023)

The Council will also continue its efforts in rolling out ambitious climate action projects, drawing down available sources of funding, pursuing citizen and stakeholder engagement and joint funding sources, all supported by a progressive policy framework.

The communities of the County will be supported by the Community Climate Action Fund to build low carbon communities in a considered and structured way. The Council itself has launched the Climate Innovation Fund 2021 and the aim of this fund is to foster innovative climate solutions in the County.

In a changing climate, the aim is to become more resilient to all future possibilities, allowing local communities to thrive and work towards real solutions that are meaningful, inclusive, fair and accessible for all, thereby prioritising a just transition.

2.1 Consultation on this Plan

To inform the development of this Plan, the Council has engaged in an extensive series of collaborations with all stakeholders to gather views on risks, barriers and opportunities to implement climate action in Kildare. A summary of the groups engaged in this consultation are listed as follows:

- Extensive engagement with the various departments of the Council to understand operations and concerns that may be targeted by this Plan;
- Engagement with the Elected Members to ensure accepted ownership of the actions proposed;
- Consultation with the public through stakeholder events within the County;
- Engagement with neighbouring local authorities through both direct engagement and the CARO organised events to collaborate on plan development;
- Specific engagement in Maynooth with citizens, business groups, land owners, representatives from the agriculture sector and the university on the implementation of the decarbonisation zone;
- Statutory consultation on the draft Plan undertaken between September to November of 2023.

The views expressed in all consultation have been taken into account in the development of this Plan which will be subject to public consultation affording all citizens a further opportunity to formally comment before finalisation and adoption of the Plan.

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.

Ireland's climate echoes that statement. **Figure 2-2** compares the global temperature rise since 1900 to Irish temperatures in the same period. Ireland is in line with the global temperature increases, following 2022, being a year of record-breaking extremes, in both temperature and precipitation (rainfall). Ireland's temperature has remained above the long-term average for the 12th consecutive year with Met Éireann stating that 2022 was 'the warmest year on record'.

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. The Summer of 2023 saw the wettest July on record, with provisional data suggesting that the country had experienced 217% of its 1981-2010 Long Term Average (LTA) rainfall.

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 melting of glaciers and thermal expansion (the increase in the volume of water due to heating) resulting from the warming ocean, known as the Atlantic Meridional Overturning Circulation.

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. New research at Maynooth University's ICARUS Climate Research Centre shows clear evidence that humans are changing Ireland's climate and highlights the need for climate adaptation measures, particularly in flood protection.

For example, notable storms such as Arwen and Barra in 2021, left 59,000 homes and businesses without power. 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.

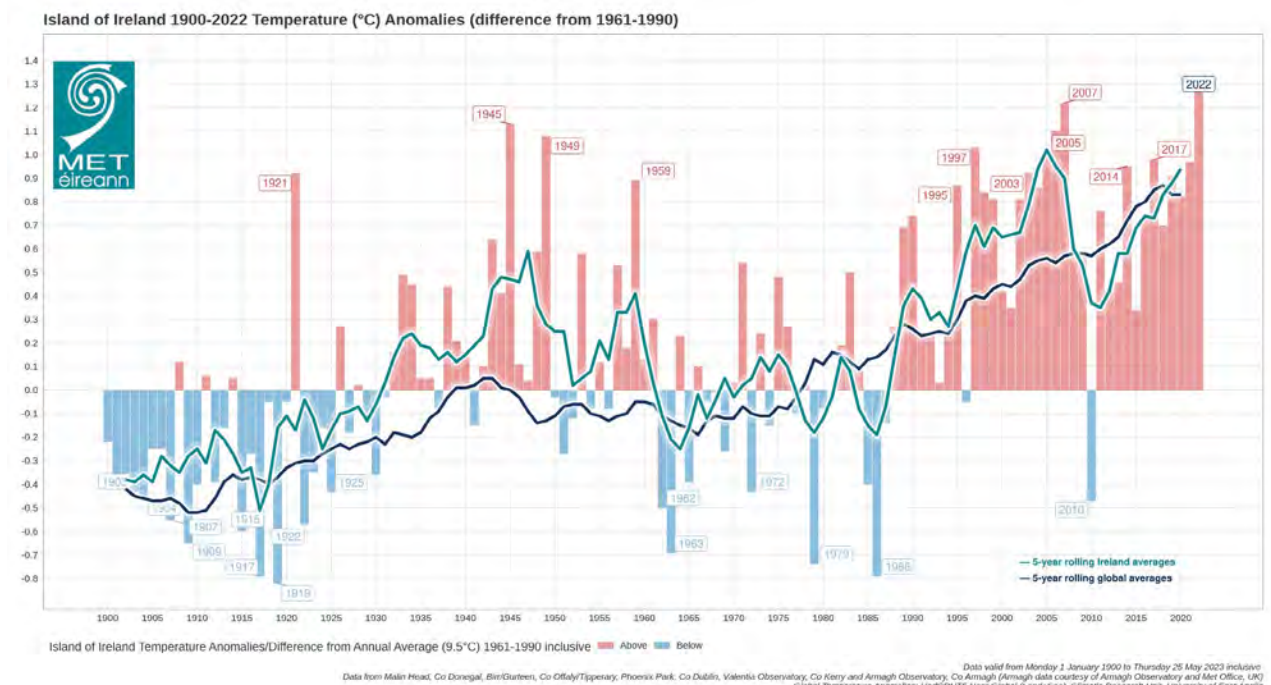


Figure 2-2: Island of Ireland 1900-2022 Temperature (°C) Anomalies (difference from 1961-1990) (Source: Met Éireann)

Based on observed changes in climate and its impacts, Met Éireann, the Environmental Protection Agency (EPA) and other climate scientists, are 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 and County Kildare 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 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;
- Based on current trends, Ireland will see an increase in sea level rise, similar to what has been experienced to date. Ireland is extremely vulnerable to sea level rise, due to its expansive coastline and the population density that has settled on the coast;
- Increases in the frequency of fluvial (river) and pluvial (surface water) flooding;
- Increases in the frequency and intensity of coastal flooding and erosion;
- 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 given impetus by the scientific evidence that supports the findings of human influence on climate change and the most recent legally binding international treaty on climate change (the Paris Agreement 2015), which sets the framework for ambitious and strengthened policy responses. Consequently, this Plan is set within a broader context of international, EU, national and sectoral climate policy which is summarised in **Figure 2-3**.

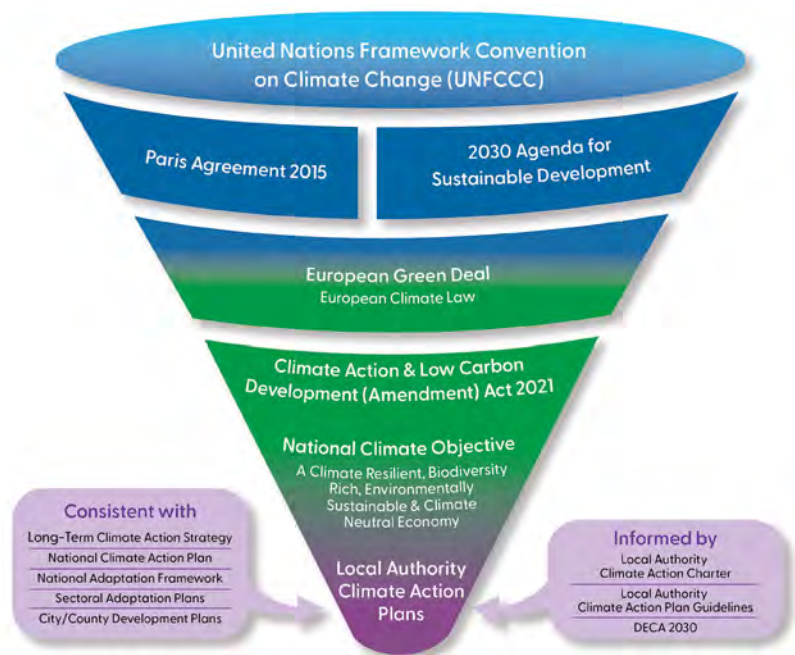


Figure 2-3: Legislation and Policy Context for the Climate Action Plan
(Source: Climate Action Regional Offices)

2.3.1 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 came 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:

- 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
- 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 \(SDGs\)](#) which are illustrated in **Figure 2-4**.

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 and in 2019, world leaders called for a 'decade of action' to achieve the Goals within this timeframe.

All actions proposed in **Chapter 4** (for the County) and **Chapter 5** (for Maynooth DZ) of this Plan are mapped against these SDG and this mapping is shown in **Appendix D**.



Figure 2-4: United Nations Sustainability Goals

Also included in **Appendix D** is the mapping of the actions within this Plan against chapters of the Climate Action Plan 2023 and the goals listed in the Delivering Effective Climate Action 2030 (DECA2013)¹ document prepared by the CCMA and CARO on behalf of the local authority sector. These DECA2030 goals are shown in **Figure 2-5**.

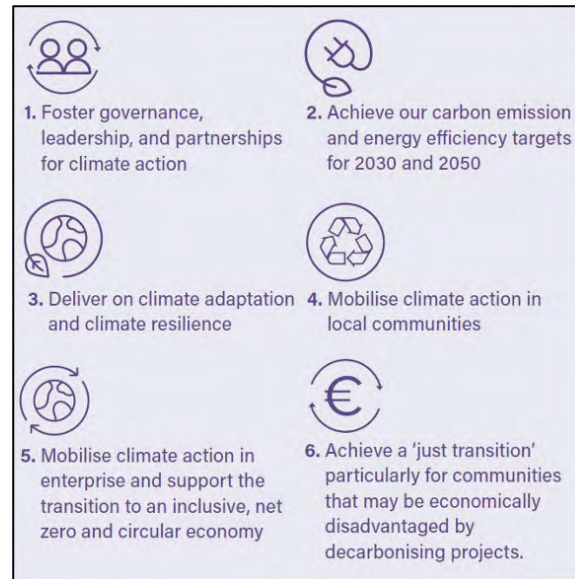


Figure 2-5: Delivering Effective Climate Action 2030 Goals

Towards achieving greenhouse gas emission reductions as part of Paris Agreement commitments, the European Commission announced the [European Green Deal](#) in December 2019, 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 EUs 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.

As part of the implementation of the Paris Agreement, the EU introduced the [Effort Sharing Regulation](#) as a law that sets binding yearly emission reductions for the Member States from 2021 to 2030. Under the Regulation, Ireland must limit its greenhouse gas emissions by at least **42%** by 2030 (compared with 2005 levels). This national target concerns emissions from the following sectors: domestic transport, buildings, agriculture, small industry, waste and excludes large industry and aviation which are regulated by the EU Emissions Trading Scheme.

EU Target: Ireland to cut emissions by 42% by 2030.

¹Link: <https://www.lgma.ie/en/publications/local-authority-sector-reports/delivering-effective-climate-action-2030.pdf>

2.3.2 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. Working towards the National Climate Objective, [the Climate Action and Low Carbon Development \(Amendment\) Act 2021](#), promotes a sustainable economy and society where greenhouse gas emissions are balanced or exceeded by the removal of greenhouse gases. This policy includes progressive economy-wide carbon budgets, sectoral ceilings, a suite of strategies devised to promote a combination of adaptation and mitigation measures and robust oversight and reporting arrangements. Through this framework, climate policy is working to scale up efforts across all of society and deliver a step change on ambitious and transformative climate action to 2030 and beyond to 2050.

Ireland’s national emission reduction objectives, as set in the Climate (Amendment) Act 2021, are to achieve a 51% emissions reduction by 2030 compared to 2018 and achieve a climate neutral economy by no later than the end of 2050. This target differs from that set by the EU Effort Sharing Regulation noted earlier as this is an economy wide target and includes Land Use, Land-use Change and Forestry (LULUCF) whereas the EU target excluded certain sectors (large industry and aviation).

Section 15 of the Climate Act 2015 defines the duties of certain bodies under the Act. This section was amended by Section 17 of the Climate (Amendment) Act 2021 which has replaced Section 15(1) of the 2015 Act to read as per the text box below.

National Emission Reduction Objective: To cut economy wide emissions by 51% by 2030

15. (1) A relevant body shall, in so far as practicable, perform its functions in a manner consistent with—
(a) the most recent approved climate action plan,
(b) the most recent approved national long term climate action strategy,
(c) the most recent approved national adaptation framework and approved sectoral adaptation plans,
(d) the furtherance of the national climate objective, and
(e) the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State.

Kildare County Council, as a body established by statute, is a public body and therefore a relevant body under the Act of 2015. As such, these requirements apply to the Council and its functions and the Council is obliged to have due regard to this national policy and this Plan in carrying out all of its functions.

The Climate (Amendment) Act 2021 also provides for the establishment of carbon budgets in support of achieving Ireland’s climate ambition of 42% carbon reduction by 2030. The carbon budget programme, comprising three 5-year budgets came into effect on 6 April 2022 for the following periods:

- Budget 1 from 2021-2025 has been set at 295 MtCO_{2e} representing an average of **4.8% reduction** per annum for the first budget period;
- Budget 2 from 2026-2030 has been set at 200 MtCO_{2e} representing an average of **8.3% reduction** per annum for the second budget period; and
- Budget 3 from 2031-2035 has been set at 151 Mt CO_{2e} representing an average of **3.5% reduction** per annum for the third provisional budget.

To deliver these targets, in July 2022 the government established [Sectoral Emissions Ceilings](#) which set maximum limits on greenhouse gas emissions for each sector of the Irish economy to 2030 and these are summarised in **Table 2-1**. The table shows ambitious targets for electricity and transport with more modest targets for industry and agriculture.

Sector	Reduction	2018 Baseline	2030 Ceiling
Electricity	75%	10.5 MtCO _{2e}	3 MtCO _{2e}
Transport	50%	12 MtCO _{2e}	6 MtCO _{2e}
Buildings (Commercial and Public)	45%	2 MtCO _{2e}	1 MtCO _{2e}
Buildings (Residential)	40%	7 MtCO _{2e}	4 MtCO _{2e}
Industry	35%	7 MtCO _{2e}	4 MtCO _{2e}
Agriculture	25%	23 MtCO _{2e}	17.25 MtCO _{2e}
Other (F-gases, Petroleum Refining and Waste)	50%	2 MtCO _{2e}	1 MtCO _{2e}

Table 2-1: Sectoral Emissions Ceilings

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 (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. An updated national Climate Action Plan is currently under preparation and is due for publication in 2024.

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. These plans 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 the 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 adherence 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 strategic 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.

The EU [Covenant of Mayors for Climate and Energy](#) is a voluntary initiative supported by the European Commission bringing together thousands of local governments across the EU that want to secure a better future for their citizens. As a signatory to the Covenant of Mayors, the Council is committed to reducing its own emissions by 50% by 2030 compared to the baseline year and realise the vision of complete decarbonisation by 2050. This will be achieved through the Council’s initiative in developing a Sustainable Energy and Climate Action Plan (SECAP) and the baseline for this SECAP is included in **Appendix C**. The process of refining this baseline with updated data while informing mitigation actions is in progress and will be developed in parallel with this CAP.

Covenant of Mayors for Climate and Energy Voluntary Target: 50% by 2030

2.3.3 Current National Baseline and Target Compliance

The EPA report annually on Ireland’s national emissions through both a detailed inventory of past emissions as well as projections of future emissions. This data is used for comparison with the National Emission Reduction Objective and the EU Effort Sharing Regulation target. The latest emissions [data](#) was reported by the EPA for the year 2022, in June 2023.

The results for 2022 show that **Ireland is not in compliance with the annual limit for 2022** as imposed by the Effort Sharing Regulation. The EPA projections indicate that the currently implemented measures (‘With Existing Measures’) will achieve a reduction of 10% on 2005 levels by 2030 which is significantly short of the 42% reduction target.

If measures in the higher ambition (‘With Additional Measures’) scenario are implemented, the EPA projections show that Ireland can achieve a reduction of 30% by 2030 which is still short of the 42% reduction target.

Similarly, the EPA report that **Ireland is not on track to meet the 51% national emissions reduction target** based on projected emissions which include most of the 2023 Climate Action Plan measures. Additional measures will need to be identified and implemented to achieve this national target.

While Ireland is not projected to achieve either target based on current measures, greenhouse gas emissions projections show total emissions decreasing over the next decade. The expected trend in total greenhouse gas emissions under both the ‘With Existing Measures’ and the ‘With Additional Measures’ scenario is shown in **Figure 2-6**. The difference between both scenarios is largely attributed to significant emissions reductions under the ‘With Additional Measures’ scenario as a result of measures outlined in the Climate Action Plan 2023 over the baseline ‘With Existing Measures’ scenario. The ‘With Additional Measures’ is predicted to deliver only a 29% reduction by 2030 compared to the 51% reduction target.

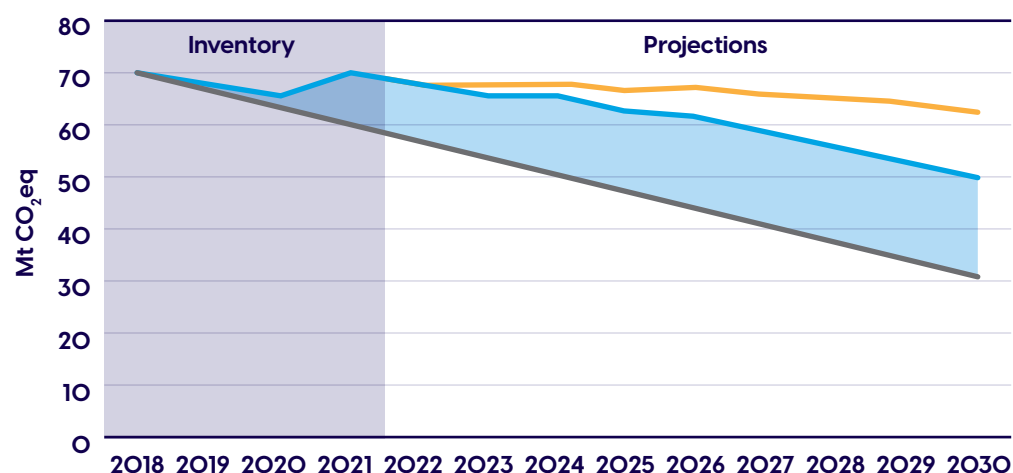


Figure 2-6: Total Irish GHG emissions with existing climate measures (orange) and additional climate measures (blue) measures to 2030 relative to the 51% reduction target (grey) (EPA, 2023)

2.4 Local Authority Climate Action Planning

This 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. The intrinsic value of this Plan is that it plays a significant role in reinforcing the commitment by 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](#). Over its preparation and implementation, this Plan offers an opportunity to bring together critical stakeholders across communities and businesses to build a vision for a climate neutral future.

The Council along with other local authorities across Ireland, are already well positioned at the forefront of climate action in Ireland. The Council plays a significant role in terms of delivering adaptation (the Council has already published a Climate Change Adaption Strategy 2019-2024) and mitigation measures at local and community levels. We are entrusted to work through our regulatory and strategic functions to operationalise the ambitious national climate targets and policy at local levels, to assist in the delivery of the National Climate Objective.

This Plan is part of longer-term efforts that require a sustained and planned response to support the delivery of the climate neutrality objective at local and community levels. This Plan provides a mechanism for bringing together both adaptation and mitigation actions to help drive positive climate action and outcomes across the local authority and its administrative area. The framework of climate actions set within this Plan, configures the arrangement of climate actions within a defined structure that ensures alignment between on the ground actions and the high-level vision that the Plan aspires to deliver.

This Plan has been prepared in accordance with the [Local Authority Climate Action Plan Guidelines](#), published by the DECC in March 2023.

2.5 Structure of the Climate Action Plan

This Plan 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 including impacts and projections for the future. In showing the outcome of this process, this Plan is set out in four parts as follows:

- **Chapter 3:** The evidence base used to inform on climate action within the jurisdictional area of the Council is presented, including climate change risks and emissions baseline profile;
- **Chapter 4:** Framework for climate action across the County including the Plan Vision, Mission, Strategic Goals, Objectives and Actions;
- **Chapter 5:** Presents the Maynooth Decarbonising Zone (DZ) including the Vision for the DZ, Strategic Priority Areas and Actions; and
- **Chapter 6:** Approach to implementing actions, measuring progress, and the use of metrics will inform Council’s report on actions over the lifetime of the Plan.

This Plan is supported by a glossary of terms in **Appendix A** and a list of abbreviations in **Appendix B**.

Appendix C includes the SECAP baseline information to support the Council’s commitment under the EU Covenant of Mayors for Climate and Energy.

Appendix D maps each of the CAP and DZ actions in this Plan against the UN SDG, DECA2030 Goals and the CAP23 Chapter titles.

Appendix E includes further detailed on the baseline emissions inventory for the County derived from MapEire and **Appendix F** provides supplementary information on the Tier 3 baseline inventory data.

3. Evidence-Based Climate Action

Image: Athy Library former Dominican Church Source: Mark McGuire

3. Evidence-Based Climate Action

This chapter of the Plan establishes the scientific basis for the climate action measures presented in **Chapter 4** and **Chapter 5**. A robust scientific evidence base is essential to provide a clearly defined pathway for climate action and the following is presented in this chapter:

- Background details on the importance of evidence-based climate action planning;
- A summary of the current climate risks in the County which has been established using details of past climate events and contemporary data sources as evidence, coupled with a determination of the potential future climate risks predicted for the County as a result of a changing climate through the Climate Change Risk Assessment process; and
- A summary of the Baseline Emissions Inventory (BEI) for Kildare which establishes the current greenhouse gas emissions from all sources (transport, residential, commercial, agriculture, municipal, social housing, wastewater and waste) for the set baseline year (2018).

Each of these analyses are presented in the following sections which provide summaries of a more detailed assessment undertaken to inform the development of this Plan.

3.1 Importance of evidence-based Climate Action Planning

The earth’s climate is changing rapidly due to anthropogenic (human caused) impacts on our surrounding environment. The changes have already been observed globally with an increase in extreme weather and climate patterns. Ireland, like everywhere is experiencing this change. The direct impacts of climate change on Ireland include increasing temperatures, changes in precipitation, sea level rise and the change in the variability and extremity of storms, flooding, sea surges and flash floods. These changes in climate will impact the environment, society and the economy of the country and each of the individual local authorities.

Evidence based climate action planning is essential for understanding the source of emissions as well as the risk that is involved with a changing climate. The development of mitigation and adaptation responses at a local level must be designed to build resilience in the County so as to reduce and avoid the most impactful effects of incoming climate shocks. Local data must be prioritised to assess risks and develop appropriate evidence-based climate action planning for the County. A high level ‘top-down’ approach using national datasets can be problematic owing to the uncertainty that may arise in developing appropriate responses.

As a consequence of this uncertainty in using national datasets, the development of this Plan has been devised based on County level data on emission sources and climate risk and resilience. This detailed local analysis was undertaken in line with DECC published [Local Authority Climate Action Plan Guidelines \(2023\)](#) which were devised to support the local authorities in developing the Local Authority Climate Action Plans in response to [Section 16 of the Climate Amendment Act 2021](#).

3.2 Climate Change Risk Assessment

The [Kildare County Council Climate Change Adaptation Strategy 2019 – 2024](#) was published in 2019 and established the key risks and vulnerabilities for the County and identifies the relevant actions for adaptation. This document has been used to inform this Plan.

To summarise the local authority’s current exposure to extreme weather events, a Climate Change Risk Assessment was carried out for the County. The assessment was carried out under guidance from the Local Authority Climate Action Plan Guidelines from [Technical Annex B: Climate Change Risk Assessment](#). The assessment methodology is a two-stage process as outlined below and in **Figure 3-1**:

1. The first stage involves assessing **current** climate risks and impacts. By investigating the severity and frequency of past climate events that have affected the County, an understanding of the range of climate hazards currently present may be gained. This first stage exposes the vulnerabilities of the County and local authority functions to the identified hazards; and
2. The second stage is carried out by assessing **future** climate risks and impacts. This involves an investigation of the climate change projections for Kildare. The projections are based on a robust evidence base and published reports on projected future climate. The results are used to estimate how the projected change will impact the County and local authority functions.



Figure 3-1: Climate Change Risk Assessment Methodology

This assessment was supplemented through consultations and workshops with members of the various local authority departments to ‘ground-truth’ assessments and provide real world experience. The local authorities’ recommendations were appropriately added to the climate change risk assessment results before finalisation.

This climate change risk assessment was also informed by the science base in the [IPCC AR6 Summary for Policymakers](#), Met Eireann’s [Major Weather Event Database](#) and CARO’s [Climate Action- Adaptation Portal](#).

3.2.1 Current Climate Risk Assessment

The climate hazards that may negatively impact Kildare were identified using historic information from the Met Éireann Major Weather Event Database, the Kildare County Council Climate Change Adaptation Strategy 2019 – 2024 and workshops with members of the various departments of the local authorities. A number of the key hazards are presented in **Table 3-1** along with an assessment of the frequency of each event as observed for the County.

To inform the risk assessment an evaluation of historic climate hazards within the County has been undertaken. The results of all climate hazard events recorded within the County over the past 30 years are shown in **Figure 3-2**.


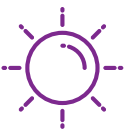




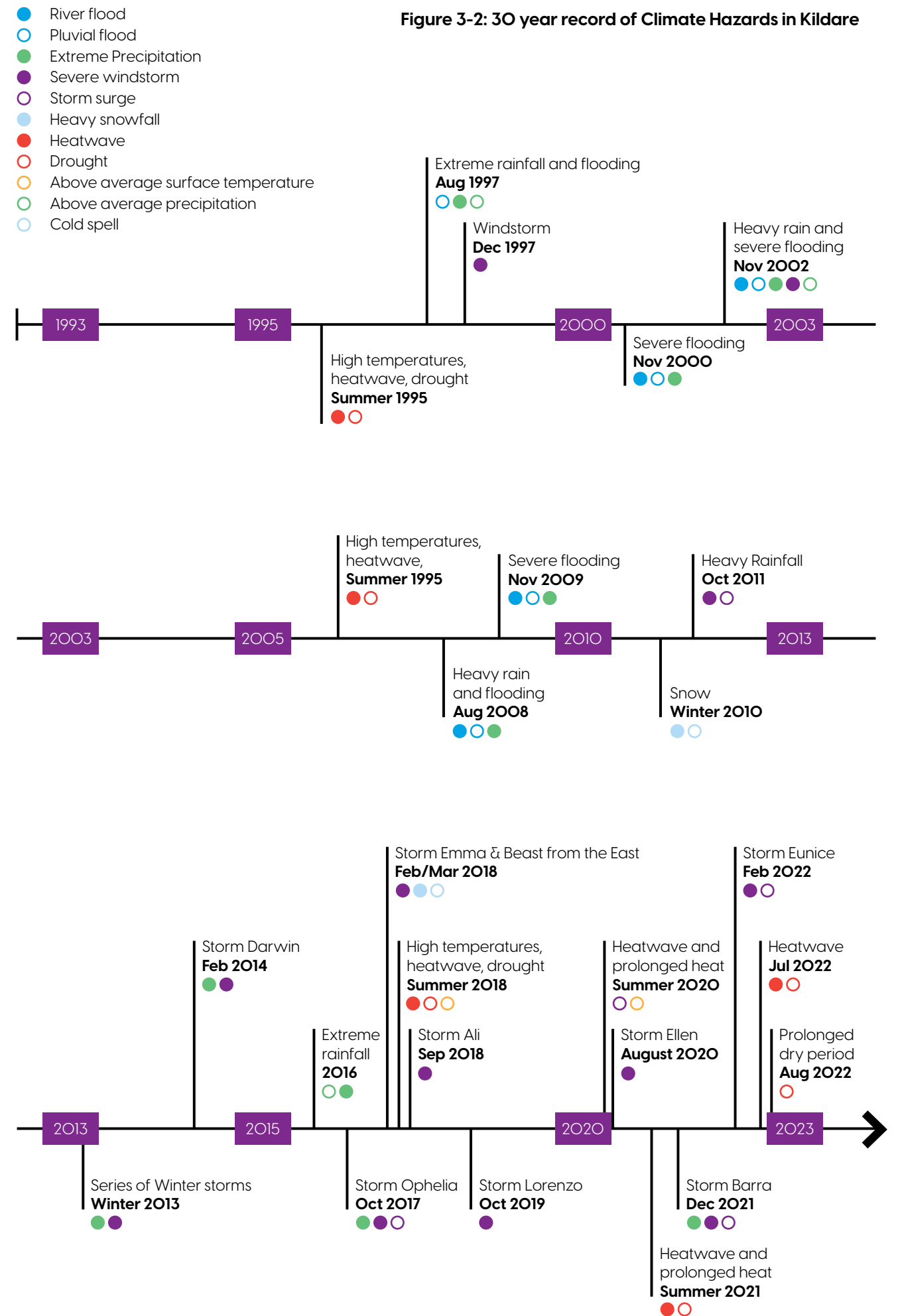
Climate Hazards	Definition and Frequency	Impacts on Kildare
	Extreme Precipitation Extreme precipitation events are periods of rainfall exceeding the average rainfall of the given period over an extended span of time. Frequent (occurs once in a 1 to 2 year period).	In 2022 flooding occurred due to extreme precipitation in Kildare putting pressure on the area's resources, emergency department, civil defence, and the army.
	Drought Climatological drought is a period of abnormally dry weather over an extended period that causes a considerable water imbalance. Common (occurs once in a 2 to 10 year period).	Four droughts have been recorded in Kildare, the summer of 2006, winter 2017 and the summers 2018 and 2020.
	Fluvial (River) Flooding Fluvial flooding occurs when the capacity of a river channel is exceeded, leading to rivers bursting their banks. Frequent (occurs once in a 1 to 2 year period).	Flooding from rivers has caused damage to property, transport infrastructure and vehicles. Kildare experienced extreme flooding events in 2002, 2008, 2009 and 2015.
	Pluvial (Rain Induced) Flooding Pluvial flooding occurs when the amount of rainfall exceeds the capacity of urban storm water drainage systems or the ground to absorb it. Frequent (occurs once in a 1 to 2 year period).	In 2002 and 2008 emergency services and civil defence were under severe pressure to rescue members of the public, pump water out of people's homes and rescue stranded motorists in the north of the County.
	Severe Windstorms Severe windstorms are strong wind events which may or may not be accompanied by precipitation. Frequent (occurs once in a 1 to 2 year period).	Storm Ophelia in 2017 left many homes and businesses in Johnstown, Kill, Straffan, The Curragh and Milltown without power.
	Above Average Surface Temperature Prolonged periods of higher than average temperatures. Common (occurs once in a 2 to 10 year period).	Observations indicate an increase in the surface temperature for Ireland of 0.9°C over the last 120 years. Urban areas particularly affected.

Table 3-1: Climate Hazards relevant to Kildare



Note that the assessment included all hazards of relevance to the County which includes a longer list than that presented in **Table 3-1**. Of those climate hazards not listed in **Table 3-1**, the following frequencies are considered:

- Heatwave is considered common (occurs once in a 2 to 10 year period). With the most recent example in Kildare in Summer 2022 which followed a similar event in 2021;
- Cold spell is also considered common with major cold snaps recorded as recently as December 2022; and
- Heavy snowfall is considered occasional (occurs once in a 10 to 100 year period) but can cause major disruption such as the major incidents in 2010 and 2018.

The exposure of all Council operations (housing, roads, parks, water services, heritage, planning, etc.) to each of these hazards has been assessed to identify the current vulnerability to climate impact. Where each individual hazard has identified a level of disruption for the delivery of any service by the local authority, the level of impact to this service was subsequently ranked. This ranking resulted in a risk matrix of climate impacts on existing Council operations.

Figure 3-3 presents this matrix of results of the current climate risk assessment and shows the current climate hazards that have the highest impact and occur most frequently are fluvial (river) flooding followed by pluvial flooding (excessive rainfall exceeding capacity of drainage system). Drought, heatwave, and snowfall are rated as common with having moderate impacts. This matrix is used to inform the assessment of future climate risk and resilience.

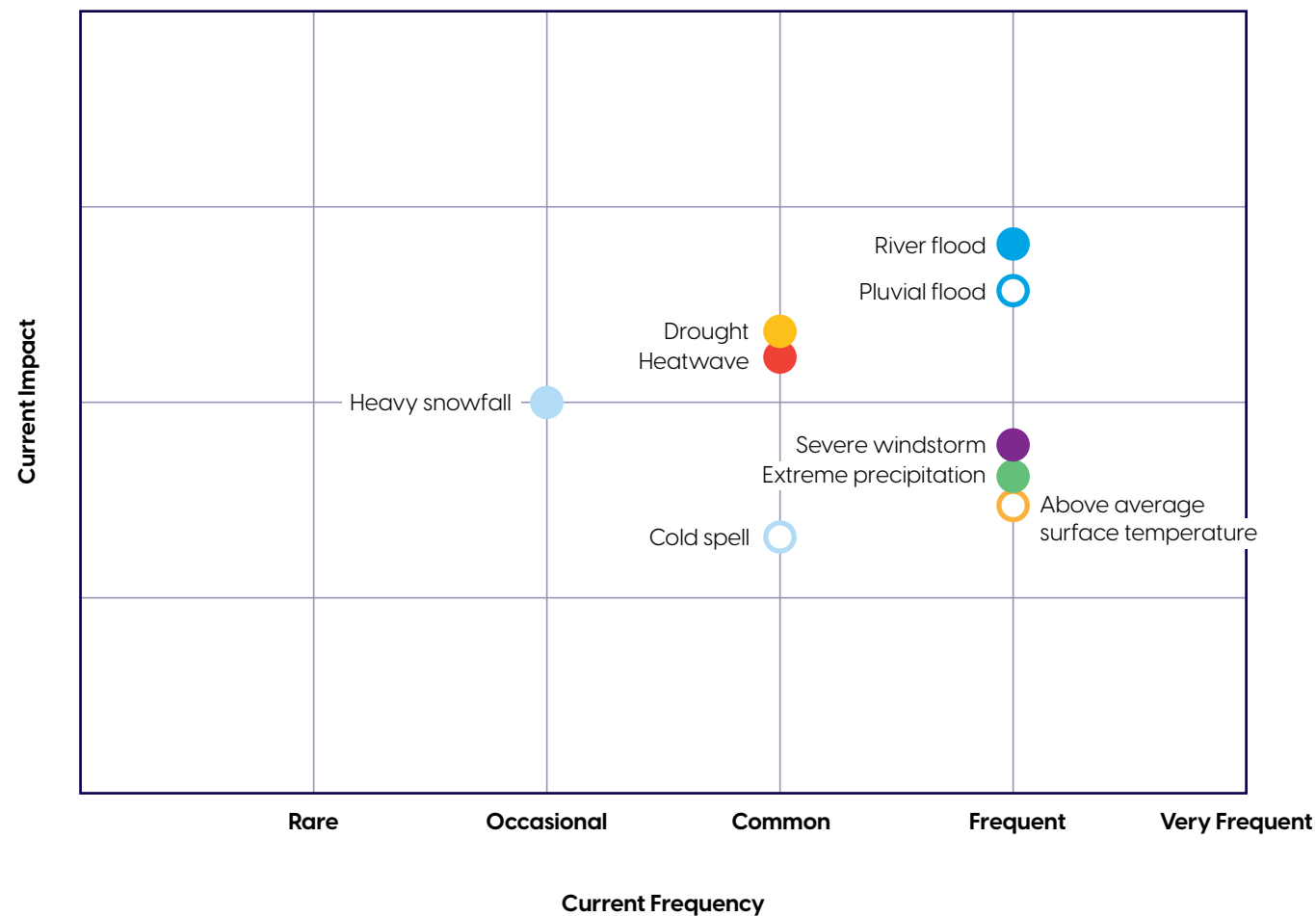


Figure 3-3: Current Climate Impact Matrix

3.2.2 Future Climate Risks and Impacts

Understanding how current hazards are changing as a result of climate change is essential in the development of an adaptation strategy. Climate change is causing hazards to evolve whereby some hazards will be exacerbated or new hazards will develop. To establish the future levels of impacts, available projections were employed based on the information from the [Climate Data Tool](#) from Climate Ireland. This tool provides a detailed dataset of projected climate data at national and county level for the period 2041 to 2060. Projections (change relative to 1981-2000) are presented for a most likely scenario which is employed in this analysis for the County.

The results of the data compiled for County Kildare are summarised in **Table 3-2**. In short, the results predict increasing average temperatures leading to increased frequency of heatwave and reduced frequency of frost, snow and ice days leading to an overall increase in the duration of the growing season. Average precipitation is predicted to decrease but the number of ‘wet’ and ‘very wet’ days are projected to increase suggesting more intense rainfall events and potential flooding. Average wind speed and energy are predicted to decrease slightly and while there are no local projections on storm events in Kildare, [EPA Research](#) indicates that nationally the overall number of North Atlantic cyclones is projected to decrease by approximately 10%.

Climate Variable	Predicted Climate in Kildare 2041 to 2060			
	Winter	Spring	Summer	Autumn
Annual Average Temperature (°C)	+1.01	+0.94	+1.13	+1.35
Heatwave (No. of events)	+6.50			
Frost Days (%)	-70.98			
Ice Days (%)	-84.88			
Precipitation (%)	-0.47	-0.41	-3.11	-3.51
Wet Days (>20mm) (%)	+12.34			
Very Wet Days (>30mm) (%)	+26.86			
Snowfall (%)	-62.72			
Dry Periods (%)	+16.08			
Wind Speed (%)	-1.90	-1.27	-1.76	-2.44
Wind Energy (%)	-3.99	-3.59	-5.29	-4.51
Growing Season Length (%)	+11.79%			

Table 3-2: Predicted Climate Data in Kildare

Based on these scientifically based projections, a review of the frequencies of future climate hazards has been undertaken to inform the development of the future climate impact matrix. This matrix is shown in **Figure 3-4** which highlights an increased frequency for extreme precipitation and the associated river and pluvial flooding as well as increased frequency of drought, heatwave and above average surface temperature in Kildare. There is no long term change predicted in average wind speed, the number of gale gusts or the extreme wind factor. Frequency of cold spells and heavy snowfall are expected to decrease with the increase average temperature.

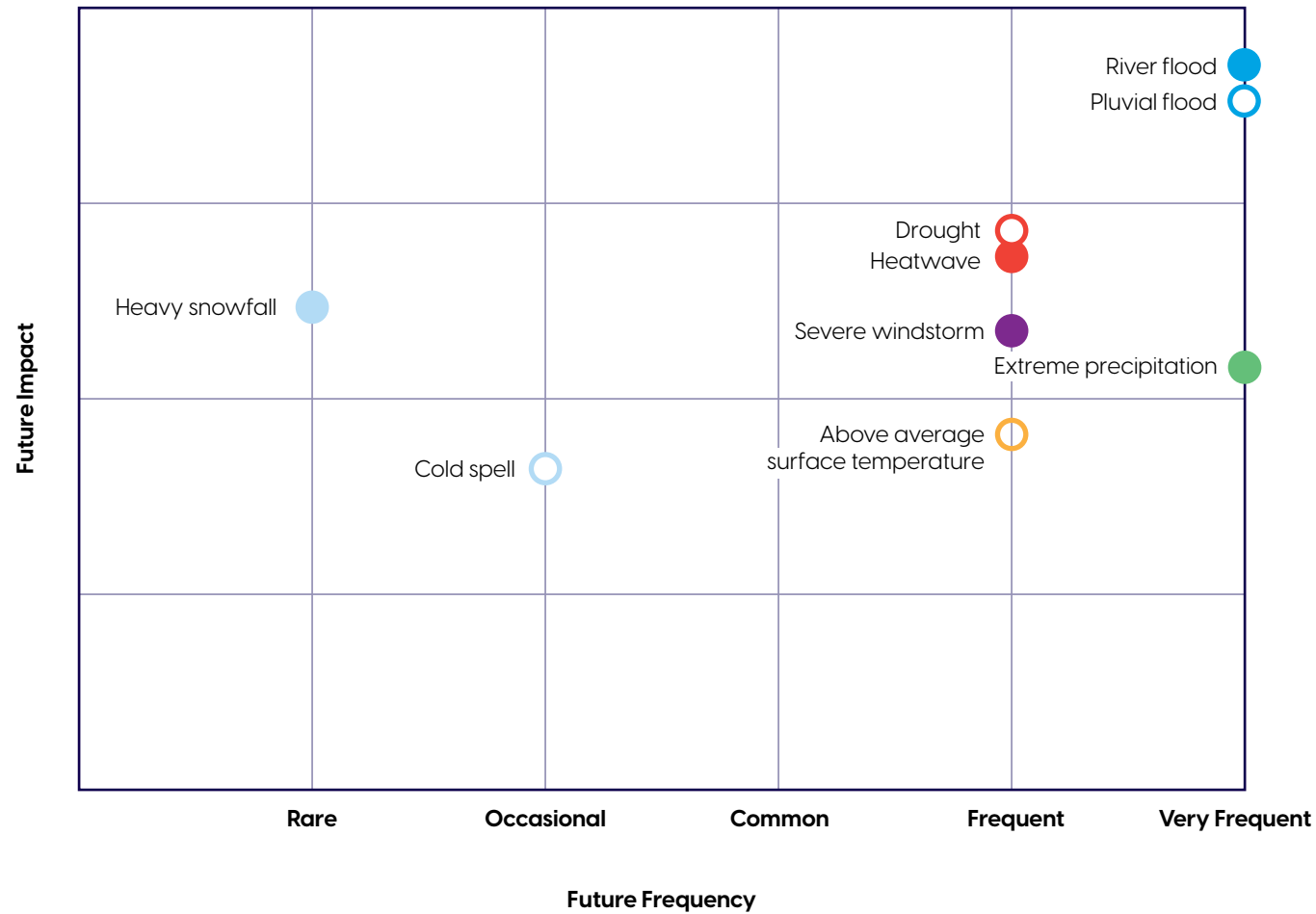


Figure 3-4: Future Climate Impact Matrix

In summary, **Figure 3-4** presents the results of the future climate assessment due to the escalation of climate hazards and their associated impacts and it is predicted that the consequences of extreme precipitation and high temperature hazards will intensify. River flooding is rated the most impactful hazard followed by pluvial flooding (rainfall/precipitation). Drought and heatwave are also set to have significant impacts with the occurrence being classed as frequent which is an increase on the baseline. These results highlight the necessity for the Council to take a proactive approach in this Plan in adapting and preparing for the potential increase in climate hazards and reducing the future impacts.

3.3 Summary of Baseline Emission Inventory

Details of the current national baseline are presented in **Section 2.3.3**. The Baseline Emission Inventory for County Kildare was developed using the Tier 3 methodology set out in [Technical Annex C](#) – Climate Mitigation Assessment: Baseline Energy Inventory of the Local Authority Climate Action Plan Guidelines 2023. The Guidelines require that all local authorities develop an emissions inventory for the 2018 baseline year as standard in line with the baseline year for the national emissions reduction objective. The input data and source for each of the sectors included in the inventory are summarised in **Table 3-3** and further details are included in **Appendix F**.

Sector	Data
Residential	Calculations as per Codema methodology – total private housing stock (housing types) Kildare Geodirectory iHouse database (2018). Average energy use calculated from SEAI BER tool for County Kildare. A combination SEAI 2015/2022 Emissions Factors were used to convert energy usage to carbon footprint.
Commercial	Commercial Data received using the API tool from KCC Valuations Office (VO). Benchmarks for commercial properties from CIBSE (Guide F – Energy Efficiency in Buildings 2012) employed. All energy benchmarks are assumed as ‘typical practice’ unless stated otherwise. National breakdown of fuel mix for commercial and industrial energy use downloaded from SEAI on 25/11/2022 - https://www.seai.ie/data-and-insights/seai-statistics/key-statistics/energy-data/ . An average floor area was provided for public houses in the town as this information was protected by confidentiality concerns by the VO.
Social Housing	Total number of social housing units received from The Councils iHouse database (2018). Dwelling units marked ‘Vacant’ have been excluded from calculations, as it is assumed that no energy is used. Average energy use per dwelling type uses same data as calculated for Residential category (i.e. from SEAI BER tool).
Transport	All transport links within the county received from the National Transport Authority (NTA), data specific for Kildare. CO ₂ equivalent factors taken from Table 48 of Codema methodology.
Municipal	County Kildare SEAI M&R data – 2018. FOI request sent to SEAI for additional inputs from facilities not covered in the Kildare M&R data.
Agriculture	Livestock Units (LU) data was imported from the CSO Census of Agriculture 2020 database. Crop data in hectares was requested and supplied by DAFM through the Land Parcel Identification System (LPIS) database. GHG emissions from livestock (manure management and enteric fermentation) was calculated using emission factors from the IPCC and the National Inventory Report (EPA, 2020). Energy usage CO ₂ and methane emissions combined for a final overall agriculture baseline figure.
Wastewater	As no wastewater treatment plant is currently operational in Maynooth, data from Leixlip WWTP used with a factor applied for population.
Waste	National Waste Statistics Summary Report (2018) used for Kildare waste streams tonnages. Considers different waste treatment options (recycling, composting, combustion, and landfill) and applies DEFRA conversion factors.

Table 3-3: Input Data for the Baseline Emissions Inventory

MapEire was not used for the BEI as the information sources did not provide the level of detail required to inform this Tier 3 assessment or the baseline for the DZ in **Chapter 5** but for reference the MapEire baseline analysis is included in **Appendix E**.

The results of the 2018 baseline emissions inventory for the County are presented in **Table 3-4** and graphically in **Figure 3-5**. The total emissions for the County in 2018 are calculated at **1,678,583 tonnes of CO_{2e}**. The sectors that generated the highest emissions were transport, residential and commercial which account for **38.2%**, **23.3%** and **19.2%** respectively.

When social housing, the Councils municipal outputs, and wastewater are combined the total emissions under the direct control of the Council equates to **2.6%**. This highlights the need for collaborative action from all stakeholders in the County to address the remaining **97.4%** of emissions from public and private sources.

Sector	Kildare County Baseline Emissions Inventory 2018 (tCO _{2e})	Share of Baseline (%)
Transport	640,922	38.2%
Residential	391,323	23.3%
Commercial	322,199	19.2%
Agriculture	232,230	13.8%
Municipal	55,240	3.3%
Social Housing	18,482	1.1%
Wastewater	13,661	0.8%
Waste	4,525	0.3%
Total	1,678,583	100%

Table 3-4: 2018 Sectoral Emissions Profile for County Kildare

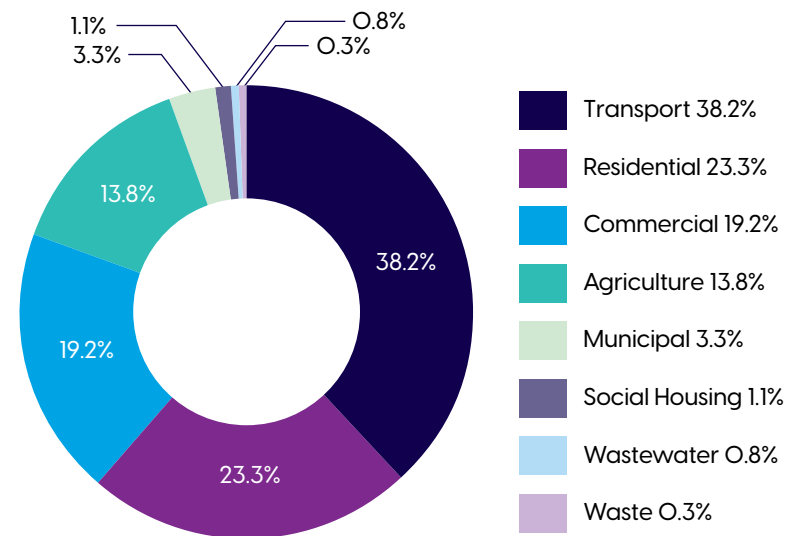


Figure 3-5: 2018 Emissions Profile for County Kildare

3.3.1 Transport

The transport sector accounted for **640,922 tCO_{2e}** or **38.2%** of overall emissions and is the largest source of emissions in the County. The data that informed this baseline is entirely from road traffic usage data and rail use was excluded.

It is notable that emissions from the two motorways (M7 and M9) are particularly high in the baseline from commuting traffic to and from the greater Dublin area. The proximity of the County to the M50 is also a significant factor in the transport emissions being so large as commuters traverse this route daily.

[The National Sustainability Mobility Policy](#), published in 2022, cites the Avoid-Shift-Improve principle (as shown in **Figure 3-6**) as central to achieving a more sustainable transport sector through:

- **Avoid:** Reduce the frequency and distance of trips;
- **Shift:** Move towards more environmentally friendly modes of transport, such as walking, cycling or using public transport; and
- **Improve:** Promoting efficient fuel and vehicle technologies.

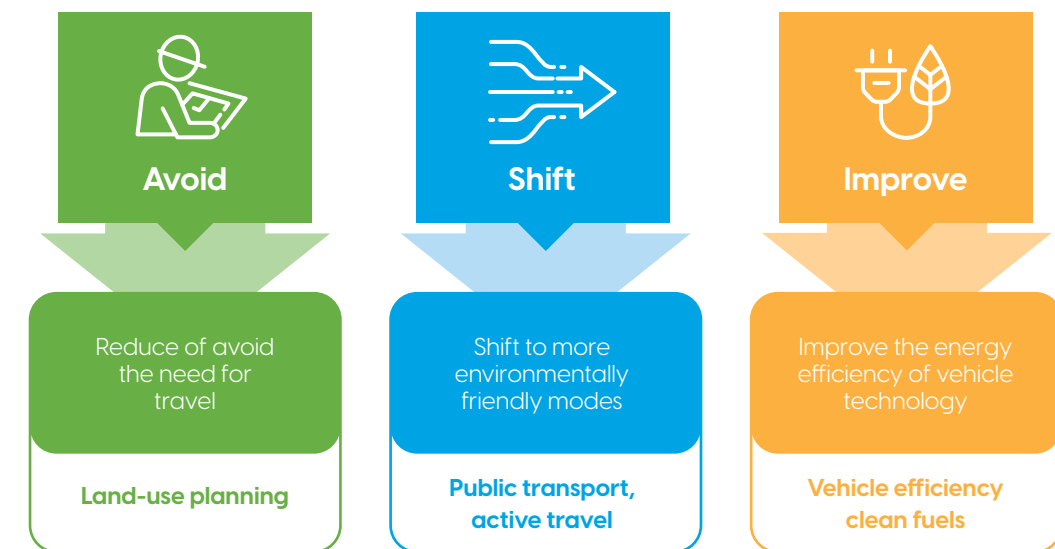


Figure 3-6: Avoid-Shift-Improve Principle (Source: National Sustainable Mobility Policy)

This Plan embraces this principle and needs to enable citizens to move away from private car journeys to more sustainable transport modes to help achieve the national targets for transport emissions.

3.3.2 Residential

The residential sector accounted for **391,323 tCO_{2e}** or **23.3%** of overall emissions. This is largely due to fossil fuel combustion for heating purposes in domestic dwellings.

Oil was the most common fuel used in central heating with **43%** of households using oil as the primary fuel source. This is followed by natural gas (which has a lower carbon intensity) and was consumed by **38%** of households as the primary fuel source for heating. This large oil consumption acts as an illustration of the types and ages of dwellings present in Kildare as a large proportion are detached/semi-detached housing built prior to 2010.

On that note, the largest percentage of households within Kildare fall within the Building Energy Rating (BER) Class C1-C3 range as shown in **Figure 3-7**. The large recent influx of A rated housing is primarily from new builds that have recently been introduced into the market. The enforcement of building standards for new builds and the promotion of housing upgrades to BER B2 standard or above will reduce the demand for heating and will be essential for the progression of the strategy outlined in this Plan for the residential sector.

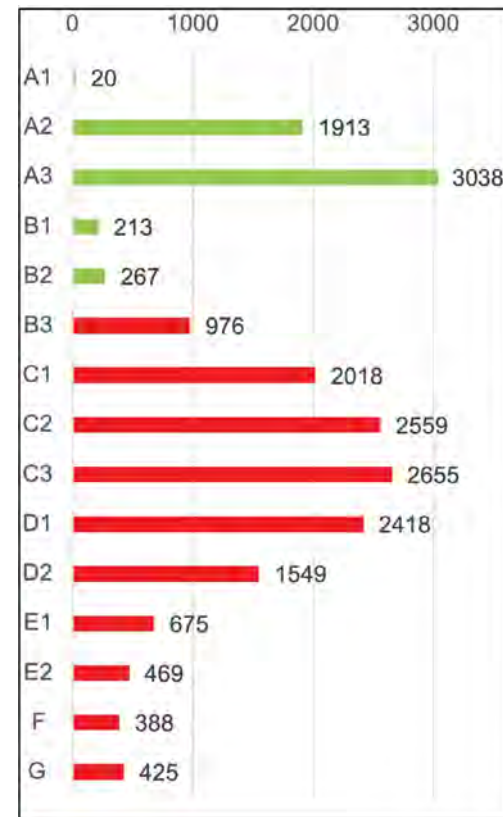


Figure 3-7: BER rated dwellings in County Kildare

3.3.3 Commercial

The commercial sector accounted for **322,199 tCO_{2e}** or **19.2%** of overall emissions and this sector is comprised of two subsectors:

- Commercial Services; and
- Industry.

The data from the Valuations Office indicated that commercial service activity accounted for **95%** of power (kWh) usage while industrial processes accounted for **5%** of power usage.

However, due to industrial processes being much more carbon intensive owing to a more carbon intense fuel source (e.g. typically coal) the distribution in emissions (tCO_{2e}) is more balanced. In terms of overall emissions, commercial services account for **70%** of emissions while industry accounts for **30%** of overall emissions in the sector as shown in **Figure 3-8**.

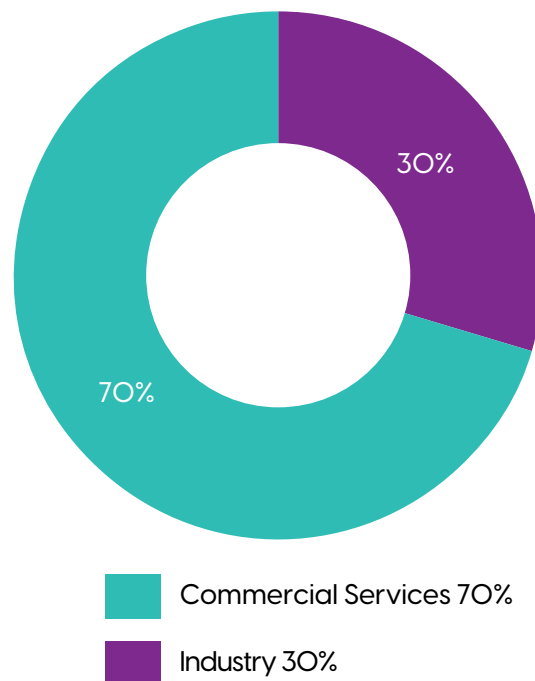


Figure 3-8: Commercial Sector Emissions (tCO_{2e})

3.3.4 Municipal

The municipal section accounted for **55,245 tCO_{2e}** or **3.3%** of overall emissions and includes municipal buildings, the Council's fleet and public lighting.

This SEAI provided a detailed account of the buildings/facilities under municipal control within the County. This data indicates that the share of municipal controlled buildings/facilities within the County is **86%** as shown in **Figure 3-9**.

These sources of the inventory are under the direct control of the Council and direct action to reduce these sources may be taken by the Council under this Plan. Such action will both aid in reducing emissions within the County and show leadership to citizens and business on what may be achieved.

3.3.5 Social Housing

Social housing accounted for **18,482 tCO_{2e}** or **1.1%** of overall emissions.

The Council is responsible for the allocation, maintenance, and refurbishment of its social housing stock, but not the day-to-day energy usage of tenants. The Council can, however, take steps in reducing emissions through energy efficiency upgrades and retrofitting of current housing stock and ensuring that all new properties purchased or built comply with the BER B2 standard as a minimum.

Social Housing was calculated using the same methodology as the residential sector. In terms of the BER ratings available in the social housing stock **92%** fell below the B2 rating target as shown in **Figure 3-10**. This is a demonstration of the scale of the challenge for this sector under this Plan. There will also be a concerted effort for all social housing to obtain a BER rating to better track these actions. However, over half (**55%**) of these homes fell within the C range (**C1-C3**) of BERs. This indicates that large scale retrofitting may not be required on most properties to get them to the required B2 standard.

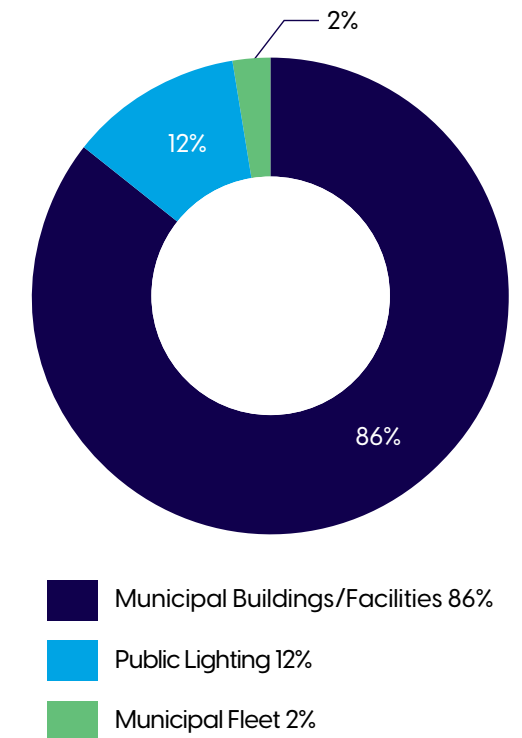


Figure 3-9: Municipal Sector Emissions (tCO_{2e})

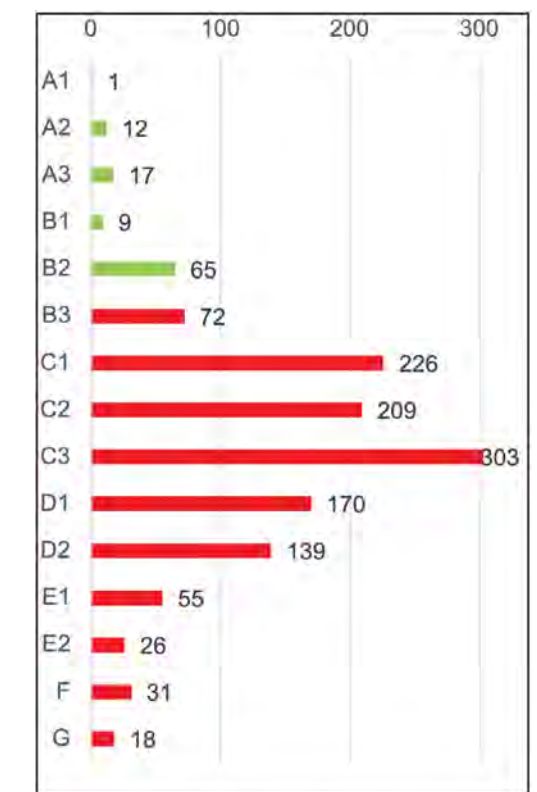


Figure 3-10: Social Housing Stock BERs (No)

3.3.6 Wastewater

The wastewater section accounted for **13,661 tCO_{2e}** or **0.8%** of overall emissions. Wastewater was calculated through a per capita rating based on the Leixlip waste water treatment plan (WWTP). Wastewater generation (and the need for treatment) is largely driven by population and, as such, reduction at source is not feasible. However, reducing the carbon intensity of the energy used to treat wastewater will aid in reducing emissions from this sector.

Leixlip WWTP was used as a proxy to calculate emissions for the County on a per capita basis. It is expected that a decarbonising of the national grid will be a major factor in the decarbonisation of this sector.

3.3.7 Waste

The waste section accounted for **4,525 tCO_{2e}** or **0.3%** of overall emissions. The main target area that needs to be addressed for this sector is the amount of waste that is sent to landfill for disposal. Although this figure represents only 10% of the total tonnage of Kildare's waste in 2018, landfill accounted for over 70% of the overall emissions within the sector as shown in **Figure 3-11** (in red).

To decrease emissions from this sector, organic/food waste bins must be made available for the entire County to divert biodegradable waste for composting or anaerobic digestion and a transition to a more circular economy and away from the current linear model is required.

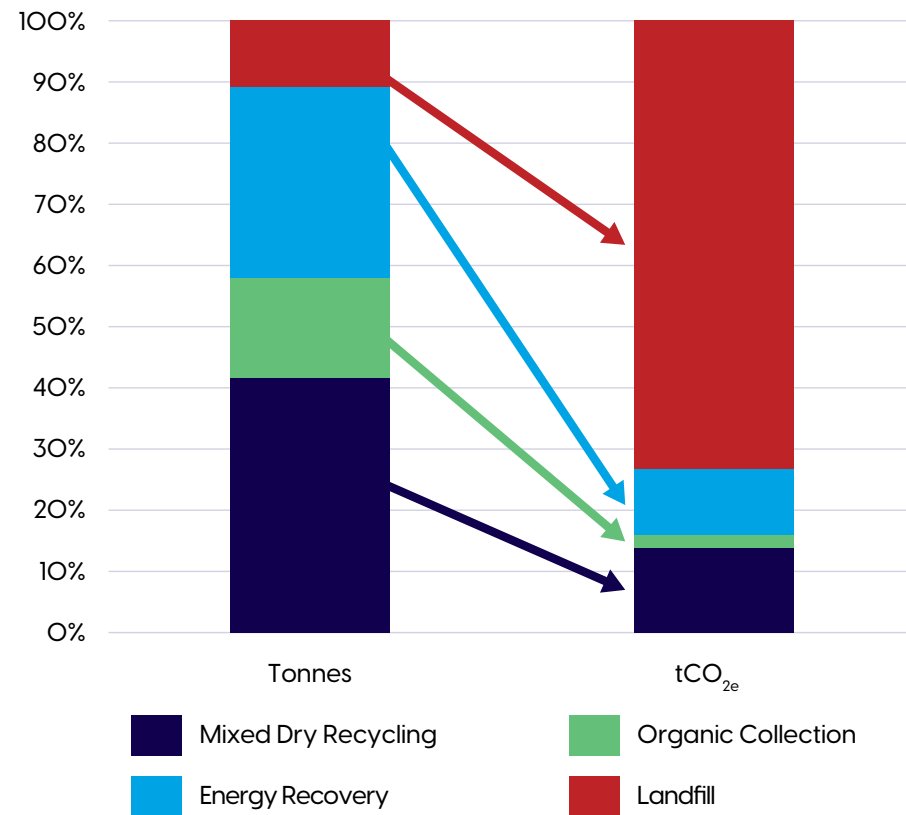


Figure 3-11: Kildare Waste Sector Emissions

3.3.8 Agriculture

Agriculture accounted for **232,230 tCO_{2e}** or **13.8%** of overall emissions within the County and each of the key sources of methane emissions are shown in **Figure 3-12**.

Emissions for agriculture were calculated using crop and herd data specific for the County. This data was sourced from the CSO Census of Agriculture and the Land Parcel Identification System (LPIS) from the Department of Agriculture. The emission factors used were from the IPCC, DEFRA and the National Inventory Report.

Land use in the county was predominantly used for livestock as 66% was used for permanent pasture and low impact permanent pasture. The largest proportion of cereal crops were winter-wheat and winter barley at 10% and 7.5% respectively.

Livestock emissions were calculated by combining the methane emissions from manure management and enteric fermentation along with the estimated operational emissions from energy usage on site (e.g. milking/heating).

Cereal crops, field vegetables and horticulture emissions were calculated using emission factors associated with cultivation per hectare of land under use.

Methane emissions from livestock accounted for 87% of overall emissions while the remaining 13% was accounted for through energy usage required for livestock upkeep and arable farming.

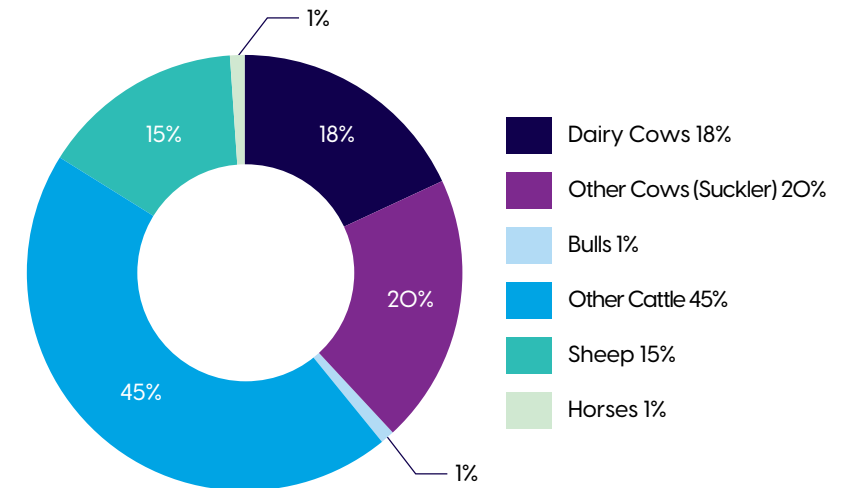


Figure 3-12: Kildare Agricultural Emissions

3.3.9 Baseline Summary

The results of the 2018 baseline emissions inventory for the County are calculated at 1,678,583 tonnes of CO_{2e}. The sectors that generated the highest emissions in 2018 were transport (38.2%), residential (23.3%) and commercial (19.2%). The actions in this Plan must be targeted to prioritise these sectors to ensure that the required levels of decarbonisation will be reached in line with national budgets and sectoral emissions targets and the ambition of the Plan.

When the sources under the direct control of the Council are amalgamated the total emissions equates to 2.6% of the 2018 inventory. The Council will take the actions required to reduce emissions from these sources to support the national climate objective and show leadership within the community on climate action. However, the baseline inventory highlights the need for collaborative action from every citizen and organisation within the County to address the remaining 97.4% of emissions outside the direct control of the Council.

4. Framework of Climate Action

Image: Sallins. Source: Eastern Midlands CARO

4. Framework of Climate Action

4.1 Overview

On foot of the evidence base gathered, a policy framework for this Plan has been developed in line with the following recommended hierarchy:

- An overarching single Vision that reflects the shared perspective of a climate resilient and climate neutral future;
- A single Plan Mission that speaks practically to the grounded purpose of the Council in delivering effective climate action;
- A set of five Strategic Goals that set the context for the climate actions and establish a structured or thematic arrangement of actions;
- A set of high level Objectives that support the delivery of the strategic goals whilst framing the appropriate emphasis of the actions; and
- Individual Actions that are specific, action-focused, time-bound and measurable reflecting a scaling up of ambitious local level climate action.

Each of these elements is presented in the following sections of this Plan.

4.2 Plan Vision and Mission

The wider international, European, national and local policy position on climate action is outlined in **Section 2.3** of this Plan. Coupled with this policy direction, the scientific evidence base from the [IPCC Sixth Assessment Report 2022](#) notes that it is unequivocal that climate change has already disrupted human and natural systems. The need for climate action is urgent to avoid missing a rapidly closing window of opportunity to secure a liveable and sustainable future for all citizens. To this end, the Council's vision for this Plan is for cooperation and ambition between the Council and all citizens of Kildare to do their part in taking urgent climate action to ensure a sustainable future for all within the County.

In addition, the interdependence of climate, biodiversity and human societies are well established through observed trends such as biodiversity loss, overall unsustainable consumption of natural resources, land and ecosystem degradation, rapid urbanisation, human demographic shifts and social and economic inequalities. Taking appropriate climate action will have co-benefits for biodiversity, human health and well-being and the economy and as a consequence, these co-benefits are also addressed within the Plan vision.

Climate Action Vision for Kildare

Kildare County Council will deliver climate action across all council functions and will lead the community of County Kildare in the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral local economy.

To support this vision, a mission statement has been devised as an action-oriented focused statement that establishes the overarching priorities of the Council in delivering the vision and the ambition of this Plan. The key themes of this mission include the following:

- The Council will lead on climate action and will suitably mitigate current sources of emissions within the Council's direct control such as social housing, lighting and the Council's buildings and fleet and will ensure climate resilient public infrastructure and open spaces for all citizens;
- All Council departments will be suitably informed and engaged on the assigned responsibilities for actions under this Plan to ensure a coordinated and comprehensive climate response;
- The Council will engage with citizens, business and communities to increase awareness of climate change, improve climate literacy and enable the requisite levels of behavioural change;
- The Council will collaborate with citizens, business and communities and neighbouring local authorities to establish shared ownership of the vision and actions of this Plan and the national targets to be achieved.

With these key themes the mission of this Plan is presented below and will be used to underpin the delivery of the actions listed in the Plan to achieve the vision.

Climate Action Mission for Kildare

The Council is committed to lead in translating National Climate Policy into local actions in Kildare by how we do our business and by supporting and enabling our citizens, communities and stakeholders to increase their capacity to achieve climate resilience and increase climate awareness towards a low carbon society.

4.3 Plan Goals, Objectives and Actions

The CARO have supplied guidance on the framing of climate action under this Plan to allow for a consistent approach across all local authority plans. Five key themes have been identified as the Strategic Goals to be adopted in this Plan and these are shown in **Figure 4-1**.



Figure 4-1: Thematic Areas for CAP Implementation

These Strategic Goals have been used to devise the suite of Objectives and Actions under this Plan and the format of the information presented for each Strategic Goal is aligned with the Local Authority Climate Action Plan Guidelines 2023. The Objectives and Actions are presented in a tabular fashion for each of the Strategic Goals as follows:

- **Table 4-1:** CAP Actions for Governance & Leadership;
- **Table 4-2:** CAP Actions for Built Environment and Transport;
- **Table 4-3:** CAP Actions for Natural Environment & Green Infrastructure;
- **Table 4-4:** CAP Actions for Communities: Resilience and Transition; and
- **Table 4-5:** CAP Actions for Sustainability & Resource Management.

Each of the tables is presented with the following information:

- Strategic Goal: Presented as one of each of the five themes listed in **Figure 4-1**.
- Objectives: Each goal is assigned a number of objectives which serve to define key areas that climate actions are seeking to deliver upon.
- SG No.: Individual reference for each action to be delivered under the Strategic Goal.
- Action: Individual and specific actions that are prioritised to deliver the required climate action for each Strategic Goal.
- Objective (Obj.): Maps each action against a relevant Objective.
- Adat/Miti./Comb.: Identifies if an action relates to climate mitigation, adaptation or a combination of both.
- Key Performance Indicators (KPI): The guidelines require that each action is measurable and assigned with a KPI to reflect the performance of delivery in the annual reporting.
- Lead Dept.: Assigns responsibility for each action to a department within the Council or other party (see text box below for key to parties).
- Partners: Supporting Departments or other agencies (see text box below for key to parties).
- Timeframe: Actions must be time-bound and actions are assigned a delivery year or noted for annual or periodic delivery as required.
- Depend.: Dependencies include for any other factors that determine the delivery of the actions.
- UN SDG Target: Each action is mapped to the United Nations Sustainable Development Goals.

Key for Responsibility Assignment:


- CCEW: Climate, Community, Environment and Water;
- FDSIG: Finance, Digital Services, Innovation and Governance;
- CPCS: Corporate, People and Cultural Services;
- TMOS: Transport, Mobility and Open Spaces;
- HR: Housing and Regeneration;
- PEEDAC: Planning, Enterprise, Economic Development and Emergency Services;
- PPN: Public Participation Network
- LEO: Local Enterprise Office;
- DAFM – Department of Agriculture Food and the Marine;
- DHLGH - Department of Housing, Local Government and Heritage;
- NPWS – National Parks and Wildlife Service;
- LAWPRO - Local Authority Waters Programme;
- LASNTG - Local Authority Services National Training Group;
- RWMPO – Regional Waste Management Planning Offices;
- NTA – National Transport Authority; and
- SEAI – Sustainable Energy Authority of Ireland.

Table 4-1: CAP Actions for Governance & Leadership

Kildare CAP Strategic Goal 1: Governance & Leadership Kildare County Council will show leadership in mitigating climate emissions to achieve our 51% target by 2030, enabling a climate resilient County by mainstreaming climate action, governance change and awareness across all of our services.									
SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
 Objectives		1. Implement and resource the organisational structures required to deliver and monitor CAP implementation. 2. Show leadership and ambition in mainstreaming climate action and governance change and awareness across services, by seeking to influence local and national policy using this leadership position, and by developing, piloting and supporting innovation for transformative decarbonisation and climate action projects. 3. Align objectives and actions for climate, water and biodiversity within Local Authority work programmes to maximise impact and efficiency from existing resources and collaborate with other local authorities to encourage climate action initiatives.							
G1	Implement the organisational structures required within the Council to ensure delivery of this Plan through all departments and to maintain the appropriate climate action policy and culture through all departments.	1	Comb.	Structure in Place	CPCS	CCEW	Ongoing to 2029	None	13.3
G2	Ensure that the Council is sufficiently resourced to implement this Plan, to lead locally and engage citizens on climate change and biodiversity and to promote Council workforce behaviours in procurement, development, planning, etc.	1	Comb.	Number of Full Time Equivalents in Climate Action	CPCS	CCEW	Ongoing to 2029	Funding	13.3
G3	Implement a monitoring regime and report annually on the implementation of these actions and revise accordingly to tackle emerging climate action priorities in a transparent decision making process.	1	Comb.	No. annual reports	CCEW	None	Annual to 2029	None	13.3
G4	Promote greater community and business engagement on climate action, circular economy, energy, water conservation, sustainable mobility and biodiversity through events such as Earth Hour and the Community Climate Action Officer, Climate Team and support tools to enable the required behaviour change. The LEO will promote Green Micro, Lean programmes, focused Energy Efficiency Briefing Series and capital programmes demonstrating circular economy principles with a focus on SMEs.	1	Comb.	No. of direct engagements.	CCEW	LEO PPN LCDC	Ongoing to 2029	None	13.3
G5	Support CARO to develop a targeted training plan to support relevant Council staff on the requirements for sustainable design, green procurement, low carbon construction methods, biodiversity, water conservation, reuse of existing buildings, etc.	1	Comb.	Courses delivered	CCEW	All, CARO, LASNTG	Annual to 2029	None	13.3

SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
G6	Create and support formal linkages between key community, business, defence and education bodies to facilitate collaborative climate action within the County.	2	Comb.	No. of linkages created.	CCEW	LEO	Q3 2024	None	13.3
G7	Embed climate considerations in budgeting process and accommodate trade off on budgetary constraints, to be an exemplar in green procurement such as through specifying low carbon methods and materials in construction. Consider testing a construction Circular Economy public procurement training clause in the tendering process utilising BUSGoCircular .	2	Comb.	% Spend on GPP	FDSIG	CCEW, LEO, MERITS, Kildare Chamber TUS	Annual to 2029	None	12.7
G8	Promote best practice climate action case studies within the County including those for both mitigation and adaptation initiatives and infrastructure.	2	Comb.	No. of Studies	CCEW	None	Ongoing to 2029	None	13.3
G9	Collaborate with other local authorities, government departments and agencies on the implementation of this Plan to create a joined up and consistent approach such as through Climate Adaptation Planning which should be developed with other local authorities that share a river catchment.	4	Adapt.	No. of initiatives	CCEW	Other Las IFI NPWS	Ongoing to 2029	None	13.3
G10	Prepare and apply a protocol to enable and require a pre-set standard for 'Climate Proofing' including energy efficient, accessible and water sensitive urban design of all local authority led capital plans, purchases and investment for example; projects funded under the Outdoor Recreation Scheme, Active Travel Scheme, Urban Regeneration and Development Fund, etc. ensuring the protocol has appropriate regard to environmental protection requirements, environmental sensitivities such as European Sites, biodiversity and opportunities for promoting climate action co-benefits.	4	Both	Development of Climate Proofing Certification	PEEDAC	CCEW	Q2 2024	Funding National Policy	13.2
G11	Update the Kildare County Council Major Emergency Plan to ensure that all climate change risks to the human, natural and built environment (including heritage) are suitably addressed and a resilient response is available having due regard to environmental sensitivities such as European Sites and biodiversity.	3	Adapt.	Update of Plan Delivered	PEEDAC	All Depts.	Q2 2024	None	13.1

Table 4-2: CAP Actions for Built Environment and Transport

Kildare CAP Strategic Goal 2: Built Environment and Transport									
The Council will deliver on obligations and targets to reduce emissions, in Council owned built environment, transport assets and promote the transition of private assets to deliver a climate resilient and low carbon County.									
 <p>Built Environment & Transport</p>		Objectives		<ol style="list-style-type: none"> To reduce greenhouse gas emissions, increase the use of renewable energy sources and increase energy efficiency throughout our housing, offices, infrastructure and transport fleet in line with national 2030 and 2050 targets. Through our spatial planning policy and objectives support the Core Strategy of the County Development Plan (any and review thereof), having consideration to core objectives as they relate to sustainable development, including aspects such as Town Centre First, active travel, sustainable mobility, sustainable energy and compact development, etc. Sustainable management of water resources should be included in the Local Authority planning application process and should include future impacts of climate change on water availability. 					
SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
B1	Ensure that all affordable homes made available for purchase or for rent by the Council under Housing for All have a Building Energy Rating of B2 as a minimum.	1	Miti.	% Homes at BER B2	HR	PEEDAC	Annual to 2029	None	11.3
B2	Promote the Midlands Retrofit Programme to ensure that existing council-owned houses are retrofitted to a minimum Building Energy Rating of B2 (or to a cost-optimal level), having due regard to environmental sensitivities such as local human receptors, protected species associated with such buildings, European sites and biodiversity; and the need to appropriately protect and conserve protected structures, during any retrofitting works.	1	Miti.	% Homes at BER B2	HR	PEEDAC	Annual to 2029	None	11.3
B3	Promote the National Retrofitting Scheme to private householders to highlight the package of supports to make it easier and more affordable for homeowners to undertake home energy upgrades, whilst advocating and exerting influence to ensure due regard is had to environmental sensitivities such as local human receptors, protected species associated with such buildings, European sites and biodiversity; and the need to appropriately protect and conserve protected structures, during any retrofitting works.	1	Miti.	% Homes at BER B2	HR	PEEDAC	Annual to 2029	None	11.3
B4	Communicate details of case studies and guidance on the upgrade of traditional building to promote as exemplar, ensuring appropriate guidance is provided on the protection of architectural and heritage value and protected species associated with such buildings during upgrade works.	1	Miti.	Studies Delivered	CCEW	None	Annual to 2029	Case Study Delivery	7.2

SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
B5	Develop projects to promote adaptive reuse of historic structures - using exemplar retrofitting projects and carbon budgets to demonstrate climate value and publish relevant case studies, having appropriate regard to the need to protect and conserve the architectural or cultural heritage value that may be associated with such buildings, and protected species that may be present in such buildings.	1	Miti.	No. of Projects Delivered	CCEW (Heritage)	HR	Ongoing to 2029	Delivery of Projects	11.4
B6	Build climate resilience and improve energy performance of architectural and archaeological heritage in public and private ownership through schemes such as the Built Heritage Investment Scheme, Historic Structure Fund, Historic Towns Initiative, Irish Walled Towns Network and Community Monuments Fund, having appropriate regard to the need to protect and conserve the architectural or cultural heritage value that may be associated with such buildings, and protected species that may be present in such buildings.	1	Adapt.	Heritage Features Climate Protected	CCEW (Heritage)	HR	Ongoing to 2029	Funding	11.4
B7	Prepare and implement a programme of measures for Council Buildings/Facilities to assist in achieving a 51% reduction in non-electrical related greenhouse gas (GHG) emissions by 2030 and to improve adaptation to climate change, having due regard to environmental sensitivities such as local human receptors, protected species that may be present in such buildings, European sites and biodiversity, and the need to appropriately protect and conserve protected structures. This will be assisted by Building Information Modelling (BIM) and adhere to the Capital Works Management Framework (CWMF) requirements.	1	Both	% reduction in GHG	HR	CCEW, FDSIG, SEAI	Annual to 2029	Resources and funding	11.1
B8	Ensure that all new residential and commercial buildings constructed within the County comply with the Nearly Zero Energy Buildings (NZEB) standards of the European Energy Performance of Buildings Directive and the Zero-Emission Building (ZEB) standard once implemented and the pending Office of Government Procurement policy on low carbon construction methods, materials and whole life-cycle analysis approaches in all publicly procured projects (CAP23 Action EN/23/11).	1	Miti.	% Compliance of New Builds	PEEDAC	None	Ongoing to 2029	Private Funding	11.3


SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
B9	Commit that new public housing and buildings incorporate the principles of climate action in terms of design, services and amenities with careful consideration in the choice of materials, roof types (i.e. green roofs), water conservation, taking advantage of solar gain/ passive housing, the provision of low-carbon and renewable energy technologies and public transport infrastructure such as bus stops, shelters and appropriate turning tables as appropriate to the scale of the development.	1	Both	% Compliance of New Builds	HR	PEEDAC, NTA, TFI Local Link	Ongoing to 2029	Public Funding and Project Delivery	11.3
B10	The planning application process shall assess the impact of new development in areas determined to have a water supply and quality constraint (i.e., from climate related drought, extreme rainfall events). In such areas the suitability of new development shall be assessed along with recommendations for mitigation of impacts on at risk development sites.	3	Both	% New Developments Subject to Assessment	PEEDAC	Uisce Eireann	Ongoing to 2029	Private Funding and Investment	12.2
B11	Require that all new large scale development (more than 10 houses or equivalent) within the County provides a life cycle analysis of carbon impact in line with the standard PAS 2080 Carbon Management In Infrastructure and ISO 19650 - Building Information Modelling (BIM) as part of the planning application.	1	Miti.	% New Developments Subject to Assessment	PEEDAC	None	Ongoing to 2029	Private Funding and Investment	12.2
B12	Support the development of sustainable, energy efficient cohousing or other semi-communal housing projects at appropriate locations within the county where access to active travel and/or public transport is readily available.	1	Miti.	No of Units	PEEDAC	Approved Housing Bodies	Ongoing to 2029	Funding	11.1
B13	Undertake a feasibility study of the potential for district heating or energy from key sources within the County including data centres, wastewater treatment plants and large industry, ensuring such a report as appropriate regard to planning and environmental protection considerations.	1	Miti.	Study Delivered	PEEDAC	CCEW	Q4 2024	Funding	13.1

SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
B14	Ensure all developments including car parks are designed in such a manner as to support EV charging, promote carbon sequestration, green infrastructure, and nature-based surface water drainage solutions. Work with relevant bodies to identify optimum locations and provide suitable EV charging points for Public Transport Vehicles in town centres and key points on inter rural bus routes. Advocate and exert influence and control, as appropriate, to ensure such development promotes climate action co-benefits and does not contravene relevant environmental protection criteria or cause significant negative environmental effects.	1	Miti.	% Developments with EV infrastructure	PEEDAC	NTA, TFI Local Link, Bus Operators	Ongoing to 2029	Private Funding and Investment	11.3
B15	Ensure all new high human occupancy developments are located in areas whereby direct access to active travel routes and/or public transport modes and/or provide reserved space for shared cars.	2	Miti.	% Developments with Sustainable Transport access	PEEDAC	NTA, TFI Local Link, Bus Operators	Ongoing to 2029	Private Funding and Investment	11.3
B16	Identify roads and streets within the County that are suitable for road space reallocation, having due regard to environmental sensitivities such as the receiving water environment, biodiversity, European sites, local air quality, and cultural heritage. Prioritise roads and streets currently or likely to be used by public transport including potential town bus services. Work towards ensuring network options are developed between active travel options and public transport routes.	2	Miti.	Total km/m2 of Road Space Reallocated	TMOS	CCEW	Q4 2024	Alternate Transport Option	11.2
B17	Support the National Sustainable Mobility Policy to increase provision of park and ride/share at transport interchanges and community hubs and support the development of Town Bus Services and park and ride/ share locations to maximise connectivity for the highest number of residents. Ensure such development promotes climate action co-benefits, including SuDS and nature based solutions, and does not contravene relevant environmental protection criteria or cause significant negative environmental effects.	2	Miti.	No. of P&R Schemes Delivered	TMOS	CCEW	Ongoing to 2029	Funding	11.2

SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
B18	Develop a Pedestrian Enhancement Plan for the regional growth centres and key towns prioritising connectivity to public transport.	2	Miti.	Plan Delivered	TMOS	CCEW	Q4 2024	None	11.2
B19	Develop and publish a cycle network plan for the County. Where possible, ensure the cycle network is planned on the principle of 'origin and destination' that prioritises connectivity to places of education, employment and public transport. Develop secure bike / mobility parking options that aligns to route options and trip attractor locations. Ensure the cycle network is planned in a manner that has due regard to environmental sensitivities such as the receiving water environment, local air quality, biodiversity, European sites and cultural heritage.	2	Miti.	Plan Delivered	TMOS	CCEW, NTA, TFI Local Link	Q4 2024	None	11.2
B20	Expand the greenway network in the County establishing linkages with towns and villages in line with the strategic national cycle network. Ensure greenway infrastructure is planned and developed in a manner that has due regard to environmental sensitivities such as the receiving water environment, local air quality, biodiversity, European sites and cultural heritage.	2	Miti.	Total km Greenway	TMOS	CCEW	Ongoing to 2029	Funding	11.2
B21	Prioritise a model for bike share schemes and micro mobility options (including the potential for electric bikes) in regional growth centres and key towns. Provide key docking locations such as places of education, employment recreation and public transport hubs. Investigate potential of coordination of such schemes through the TFI Local Link Transport Coordination Unit (TCU).	2	Miti.	No. of Shared Bikes Available	TMOS	CCEW TFI Local Link, NTA	Ongoing to 2029	Funding	11.2
B22	Deliver the Pathfinder Projects identified for County Kildare under the National Sustainable Mobility Policy (such as the Naas Mobility Network Integration) and initiatives, 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, during any retrofitting works.	2	Miti.	No. of Projects Delivered	TMOS, HR	CCEW	Ongoing to 2029	Funding	11.2

SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
B23	Support the planning and implementation of a programme of improved town and school bus services and commence delivery of an enhanced bus stop and bus shelter programme for regional and rural services.	2	Miti.	No. of Daily Bus Passengers	TMOS	NTA, TFI Local Link, Bus Companies	Ongoing to 2029	None	11.2
B24	Support the Connecting Ireland Rural Mobility Plan to ensure that the public transport network encourages and supports changes in demand for transport, improves regional connectivity and provides an enhanced alternative to the private car.	2	Miti.	Reduction in No. of Private Car Journeys	TMOS	CCEW	Ongoing to 2029	None	11.2
B25	Develop an Electric Vehicle Network Plan to identify charging points including high powered charging hubs across the County, having due regard to environmental sensitivities such as the receiving water environment, biodiversity, European sites, local air quality, and cultural heritage.	2	Miti.	Plan Delivered	TMOS	CCEW, ZEVI	Q4 2024	None	11.2
B26	Promote and implement the Safe Routes to School Programme to create safer walking and cycling routes within communities, alleviate congestion at the school gates and increase the number of students who walk or cycle to school by providing safe infrastructure. Ensure supported active travel development is carried out in a manner that has due regard to environmental sensitivities such as local human receptors, Biodiversity, European sites, water quality and hydrology, existing traffic and transport conditions and amenity value.	2	Miti.	No. of Safe Routes Delivered	TMOS	Primary and Post Primary Schools	Ongoing to 2029	School Engagement	11.2
B27	Revise working practices within the Council to support 40% of resource hours can achieve remote working as per the National Remote Work Strategy.	2	Miti.	% Council Resource Hours Worked from Home	CPCS	All	Ongoing to 2029	National Remote Work Strategy	11.3
B28	Establish a comprehensive and integrated network of remote working hubs throughout the County to support remote working and reduce commuter travel in line with the National Remote Work Strategy and Kildare Hub Strategy, ensuring such hubs are located and planned in a manner that does not cause unintended, negative local traffic and transport related impacts.	2	Miti.	No. of Office Spaces Delivered	PEEDAC	FDSIG	Annual to 2029	National Remote Work Strategy	11.3

Table 4-3: CAP Actions for Natural Environment & Green Infrastructure

Kildare CAP Strategic Goal 3: Natural Environment & Green Infrastructure									
Protect and enhance the natural environment and green infrastructure within the County to support biodiversity and natural water systems, reduce the risk of negative impacts of climate change and enhance health and well-being for all citizens.									
 <p>Natural Environment & Green Infrastructure</p>		Objectives		<ol style="list-style-type: none"> Promote and protect our environment and its biodiversity and water catchments as key enablers of climate adaptation and mitigation across the county through the delivery of sustainable services, including those with a focus on nature-based solutions, in collaboration with sectors and communities. Promote green infrastructure as a strategically planned network of natural and semi-natural areas with other environmental features, designed and managed to deliver a wide range of ecosystem services, while also enhancing biodiversity. Protect and restore peatlands. Promote and support farmers in diversifying to lower carbon agricultural activities within the County. 					
SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
N1	Develop Green Infrastructure Plan (as defined by the EU as 'A strategically planned network of natural and semi-natural areas with other environmental features, designed and managed to deliver a wide range of ecosystem services, while also enhancing biodiversity') including a green infrastructure network for the County that incorporates climate change mitigation and adaptation to increase climate resilience, climate action co-benefits and environmental protection requirements.	2	Both	Plan Delivered	PEEDAC	CCEW	Annual to 2029	None	11.7
N2	Identify all local authority land, carry out ecological/habitat survey and highlight areas at risk and those suitable for restoration and enhanced carbon storage, also identifying potential wildlife corridors for protection through statutory plans.	1	Both	Survey Delivered	CCEW (Biodiversity Officer)	NPWS	Q3 2024	Appointment of a biodiversity officer	11.4
N3	Introduce and implement a policy in relation to how Council owned spaces are managed to improve biodiversity and water quality levels in keeping with the 'All Ireland Pollinator Plan' and as part of this to develop and implement pesticide reduction policy for lands and areas managed by the Council ensuring these substances are only used to a degree that does not cause significant effects on the receiving environment, such as the receiving water environment, biodiversity or European sites.	1	Both	Policy Delivered	CCEW (Biodiversity Officer)	TMOS, HR, PEEDAC	Q4 2025	Appointment of a biodiversity officer	11.3
N4	Require all new development within the County to undertake an inventory of baseline biodiversity and set a target for 10% biodiversity gain as part of any planning application for development.	1	Both	% Natural Capital Gain	PEEDAC	CCEW	Ongoing to 2029	Private funding	11.4


SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
N5	Prepare a guidance document and training on the importance of, quality rating and sustainable management of the hedgerows and riparian areas, for Council staff and external stakeholders including farmers/landowners having due regard to hedgerow and riparian area conservation requirements and the need to avoid habitat fragmentation.	1	Both	Guidance Delivered	CCEW (Biodiversity Officer)	TMOS, HR, PEEDAC	Q4 2025	Appointment of a biodiversity officer	11.4
N6	Support existing citizen science initiatives including those focusing on water quality through the National Biodiversity Data Centre biodiversity recording through training of public/stakeholders and publicising schemes and resources.	1	Both	No. of Training Initiatives Delivered	CCEW (Biodiversity Officer)	TMOS, HR, PEEDAC, LAWPRO	Q2 2024	Appointment of a biodiversity officer	11.4
N7	Commission the 'Local Authority County Wetland Survey', develop a Wetland Restoration Plan, this shall identify priority areas for habitat restoration, carbon capture and water and biodiversity benefits, along with phasing for restoration. This plan shall be developed by a competent ecology team, and shall have 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.	1	Miti.	Survey Delivered	CCEW (Biodiversity Officer)	TMOS, HR, PEEDAC, LAWPRO	Q4 2025	Appointment of a biodiversity officer Funding	11.4
N8	The Council will seek to progress Flood Alleviation schemes in the County in conjunction with the Office of Public Works (OPW); having due regard to the need to promote natural and nature based solutions and Sustainable Drainage Systems, and environmental sensitivities at these locations, including water quality, biodiversity, European sites, riparian corridors and aquatic ecology, visual amenity and recreation and amenity value.	1	Miti.	No. of Schemes Delivered	CCEW	OPW, LAWPRO	Q1 2029	Funding Statutory approvals	13.1

SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
N9	Develop integrated programme to address Invasive Alien Species.	1	Both	Programme Delivered	CCEW (Biodiversity Officer)	NPWS	Q2 2024	None	11.4
N10	Develop a plan of action to protect, conserve and enhance the wetlands identified in the County Kildare Wetland Survey 2012-2014 (including Pollardstown Fen). This plan shall be developed by a competent ecology team and shall have 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.	1	Adapt.	Plan Delivered	CCEW (Biodiversity Officer)	NPWS	Q3 2024	None	11.4
N11	Prepare guidance document and training on quality rating and management prescription of hedgerows in open space for Council staff and developers, having due regard to hedgerow and riparian area conservation requirements and the need to avoid habitat fragmentation.	1	Both	Guidance Delivered	CCEW (Biodiversity Officer)	NPWS IFI	Q3 2024	None	11.4
N12	Support the Green Schools and Heritage in Schools programme to promote biodiversity and climate issues to schools.	2	Both	No. of School Engagements	CCEW (Biodiversity Officer)	None	Ongoing to 2029	None	11.4
N13	Develop and implement a Nature-Based Solutions (NBS) and incorporate Surface Water Management Plans for both Council and private sector projects, and to prioritise sustainable drainage systems over conventional systems in line with national guidance parameters.	1	Adapt.	Protocol Delivered	PEEDAC KCC	TMOS, HR, LAWPRO	Q4 2024	Staff resources and staff training	13.1
N14	Carry out a review of Section 4 Discharge to Water Licences to determine if they are fit for purpose to meet projected climate change related risks such as hydrological changes and water temperature increases.	1	Both	Review Completed	CCEW	EPA, LASNTG	Q4 2024	Funding and resources	13.1
N15	Devise a county native tree management plan which seeks to retain existing native provenance trees, support the planting of native provenance trees, and identify sites for native and mixed woodland planting. Set targets to maintain existing and plant new native provenance trees in urban and rural areas, to enhance carbon storage, biodiversity and landscape, air quality, and urban heat island mitigation. Increase range of edible native provenance locally sourced fruits, flowers and vegetables in Council Parks, rooftops and open spaces.	2	Both	Plan Delivered	TMOS	CCEW	Q4 2024	None	11.4

SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
N16	Deliver the enhanced rehabilitation of former industrial peatlands within the County in line with Irelands National Recovery and Resilience Plan, whilst advocating and exerting influence to ensure such projects promote climate action co-benefits and do not contravene relevant environmental protection criteria or cause significant negative environmental effects.	3	Both	No. of Hectares Peatland Rehabilitated	CCEW	Bord na Móna	Ongoing to 2029	Funding	11.4
N17	Engage with Bord na Móna to explore the appropriate and sensitive diversification of former cutaway peatlands and development of alternative uses such as rewetting and recreational facilities under the brown to green agenda under the National Strategy on Outdoor Recreation, whilst advocating and exerting influence to ensure such projects promote climate action co-benefits and do not contravene relevant environmental protection criteria or cause significant negative environmental effects.	3	Both	Support to BnM in implementing up to 70% of bogland for nature and biodiversity	CCEW	Bord na Móna	Ongoing to 2029	Bord na Móna Funding	11.4
N18	Engage with Bord na Móna to develop a Green Infrastructure Masterplan to inform the delineation of core areas, steppingstones and corridors to support the development of the Bog of Allen Nature Reserve, Special Amenity Area Order and/or National Peatlands Park.	3	Both	Support to BnM in sustainable development of Nature Reserve	CCEW	Bord na Móna	Ongoing to 2029	Bord na Móna Funding	11.4
N19	Support farmers in the shift toward a low-carbon and climate resilient agriculture sector in County Kildare including the diversification of farming practices to increased tillage, horticulture or alternative land uses.	4	Both	Agriculture Emissions (tonnes per hectare)	CCEW	Agriculture Sector	Ongoing to 2029	Farmer Engagement and Funding	13.1
N20	Support and promote the Signpost Advisory Programme to support climate and sustainability actions on farms.	4	Both	% Farmers signed up to Signpost Programme	CCEW	DAFM, Agriculture Sector	Ongoing to 2029	Farmer Engagement and Funding	13.1
N21	Promote the shift to organic farming within the County.	4	Both	% Organic Farmers	CCEW	DAFM, Agriculture Sector	Ongoing to 2029	Farmer Engagement and Funding	13.1
N22	Support farmers in reducing chemical nitrogen fertiliser use by 20% by 2030, increasing the use of protected urea and increasing the uptake of low emission slurry spreading to 90% of farms.	4	Both	Chemical Fertiliser Use in the County (tonnes)	CCEW	Agriculture Sector DAFM Reporting	Annual to 2029	EU Rules on Fertiliser Use	13.1
N23	Provide technical supports to farming enterprises in the development of biomethane from Anaerobic Digestion, including guidance on planning and environmental protection requirements.	4	Both	Total Tonnes Waste Treated by AD	CCEW	Agriculture Sector	Ongoing to 2029	Private Development of AD	13.1

SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
N24	Promote innovative solutions in the agri-food sector to reduce the carbon intensity of agri-food products on Kildare farm enterprises.	4	Both	No. of Innovations Identified and Delivered.	PEEDES	Agriculture Sector	Ongoing to 2029	Farmer Engagement and Funding	13.1
N25	Develop pesticide use policy for the County, ensuring these substances are only used to a degree that does not cause significant effects on the receiving environment, such as the receiving water environment, biodiversity or European sites.	4	Both	Policy Delivered	CCEW	DAFM	Q4 2024	None	13.1
N26	Support farmers in reducing the crude protein content of animal feed, increasing the focus on low-methane traits within animal breeding programmes and encouraging processors and farmers to reduce the average age of slaughter to 24 – 25 months from the current average of 26.5 months.	4	Both	Agriculture Emission per Unit	CCEW	Agriculture Sector	Ongoing to 2029	None	13.1
N27	Explore the feasibility of the development of allotments and community gardens in the County to support sustainable food production.	4	Both	Number of Allotments Delivered	CCEW PEEDAC	None	Annual to 2029	Lands Available	13.1
N28	Support the tourism industry in the sustainable delivery of the objectives of Ireland's Ancient East Regional Tourism Development Strategy 2023 – 2027 through enabling reductions in the carbon footprint of the tourism sector, supporting creation of transformational green infrastructural assets and growing sustainable, green and eco tourism in the area.	1	Both	Ecotourism Visitors	Into Kildare	Faillte Ireland. Tourism Sector	Ongoing to 2029	None	13.2

Table 4-4: CAP Actions for Communities: Resilience and Transition

Kildare CAP Strategic Goal 4: Communities: Resilience & Transition Mobilise climate action in local communities through increasing climate literacy to build capacity for climate action and a just transition for citizens in the County.											
 <p>Communities Resilience & Transition</p>		Objectives <ol style="list-style-type: none"> Build capacity and readiness with communities and other strategic partners to effect transformative climate action and motivate demand for climate action through capacity building programmes, policy/financial instruments and local development and wellbeing programmes. Ensure land use planning policy is cognisant of climate adaptation and flood risk within the County. Ensure emergency planning systems and plans address climate action to protect our assets and critical infrastructure from extreme weather events and to ensure a co-ordinated and resourced emergency response from all climate related emergencies and events, including flooding. Implement and support Just Transition actions within the County. Promote climate action and green skills in training and education in partnership with Education and Training Boards (ETBs) and Local Enterprise Offices (LEOs) to support and promote green jobs and enterprise. 									
R1	Organise climate clinic and volunteer days in association with local NGOs to communicate message of climate change and to take part in practical action.	1	Both	No. of Days Delivered	CCEW	All Depts.	Ongoing to 2029	None	13.3		

SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
R2	Include 'Sustainability and Climate Change' scoring on relevant grant assessments to ensure that community groups/ stakeholders consider and incorporate Climate Mitigation and Adaptation in all their grant funded activities.	1	Both	Scoring System Delivered	FDSIG	CCEW	Q1 2024	Funding	13.3
R3	Identify ways to provide training and information support for community groups/ community event organisers on Climate Action measures, for example those relating to water conservation/ rainwater harvesting, nature-based solutions, circular economy, active travel, sustainable mobility and sustainable event planning, etc,	1	Both	Training/Support Regime Delivered	CCEW	All Depts.	Q1 2024	Funding. Participation of community groups and stakeholders	13.3
R4	Identify ways to support grant administrators in their role as influencers of climate action/ sustainability and protecting water resources through administration of grants across council services.	1	Both	Grant Support System Checks Delivered	FDSIG	CCEW	Ongoing to 2029	Funding. SEAI support	13.3
R5	Encourage a community response to enable biodiversity and water conservation in the community, in association with groups such as the 'Tidy Towns', through innovative measures such as competitions, events and training.	1	Both	No. of Competitions, Events and Training Delivered.	CCEW	All Depts.	Ongoing to 2029	Funding Biodiversity officer appointment	13.3
R6	Guided by the Memorandum of Understanding signed between the GAA and CCMA, towards working together on sustainability and climate action projects, engage with the 'Green Club Programme' through a nominated lead, working with the CARO and GAA, in the promotion and support of projects by participating clubs, to meet the objectives, and during key phases, of the programme to 2029.	1	Both	% Clubs Engaged in Green Club Programme	Economic, Community and Rural Development	CARO/ GAA	Ongoing to 2029	Number of participating clubs in the Programme	13.3
R7	Support artists, organisations and communities to consider and adopt best practice in their work with regard to global challenges such as climate, water, environment, mobility and biodiversity and maximise the library network, educational resources and planning.	1	Both	No. of Support Engagements with Artists	CPCS	CCEW The Arts Council	Q4 2024	Funding	13.3


SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
R8	Ensure the continued incorporation of Flood Risk Management and Climate Change Sectoral Adaptation Plans into the spatial planning of the County to meet the requirements of the EU Floods Directive and the EU Water Framework Directive and to promote a climate resilient County, having due regard to the need to promote nature based solutions and Sustainable Drainage Systems, and environmental sensitivities at these locations, including water quality, biodiversity, European sites, riparian corridors and aquatic ecology, visual amenity and recreation and amenity value.	2	Adapt.	Adoption of Plans to CDP/LAPs	CCEW	OPW IFI	Ongoing to 2029	Funding from Central Government	13.1
R9	Implement all Area Specific Recommendations presented in the Strategic Flood Risk Assessment for the Kildare County Development Plan 2023-2029, having due regard to the need to promote nature based solutions and Sustainable Drainage Systems, and environmental sensitivities at these locations, including water quality, biodiversity, European sites, riparian corridors and aquatic ecology, visual amenity and recreation and amenity value.	2	Adapt.	% Recommendations Delivered	PEEDAC	OPW IFI	Ongoing to 2029	Funding from Central Government	13.1
R10	Require all new development within the County to comply with the requirements of Sustainable Urban Drainage Systems as a minimum and to promote the development of nature based solutions such as blue/green roofs, ponds, wetlands, shallow vegetated channels (swales) and include provision for rainwater harvesting.	2	Adapt.	% New Development Compliant with SUDS	PEEDAC	CCEW	Ongoing to 2029	Public/ Private Development	13.1
R11	Showcase good examples of Sustainable Urban Drainage Systems which maximise amenity and biodiversity through the use of nature based systems such as swales or rain gardens as part of the Councils developments.	2	Adapt.	No. of Examples Presented	TMOS	None	Ongoing to 2029	Availability of Examples	12.1

SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
R12	Resolve local flooding issues utilising OPW and Department of Transport funding (Drainage programme, Climate Adaptation and Resilience Works, OPW Minor Works Scheme) incorporating Sustainable Urban Drainage Systems, having due regard to the need to promote Sustainable Drainage Systems, and environmental sensitivities at these locations, including water quality, biodiversity, European sites, riparian corridors and aquatic ecology, visual amenity and recreation and amenity value. All new drainage works to be in line with best practice principles informed by SUDs Interim Guidance Document and Water Sensitive Urban Design (WSUD).	2	Adapt.	No. of Local Flood Issues Fully Resolved	CCEW	OPW IFI	Ongoing to 2029	Funding Landowner Consents	13.1
R13	Support and inform a climate proofing programme for natural water resources and to better manage flooding at the catchment level, the Council will identify a sub-catchments where water quality objectives are not being met, and where there is an established flood risk.	2	Adapt.	Programme Delivered	CCEW	OPW IFI	Q1 2025	Funding and Stakeholders Support	13.1
R14	To carry out a feasibility assessment to determine if it is possible to identify waterbodies that are both particularly vulnerable to extreme water events associated with climate change, and at risk of not meeting the requirements of the EU Water Framework Directive. Implement any protective and remediation measures for waterbodies identified.	2	Adapt.	Assessment Delivered	CCEW	EPA, LAWPRO, GSI	Q2 2025	DHLGH Support	13.1
R15	Carry out a 'Tree Cover Survey and Policy' on lands managed by the Council, in accordance with an agreed methodology. The study will identify sites for native and mixed woodland planting and set targets for planting and maintaining native provenance trees in urban and rural areas, to enhance carbon storage, biodiversity and landscape, air quality, and urban heat island mitigation. Where possible tree pits should integrate into the surface water drainage to provide water quality benefits.	2	Both	Survey Delivered	TMOS	CCEW	Q2 2025	Funding	13.1

SP No.	Action	Obj.	Adapt/ Mit./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
R16	Conduct an audit of all local authority archives and collections. Carry out risk assessment and ensure disaster management plans completed and actioned with targets to fit local circumstances. For archives and collections in private ownership support and training should be provided as required for nationally and internationally important collections, in collaboration with collection owners.	3	Adapt.	Audit Delivered	PEEDAC	CPCS	Q2 2024	None	13.1
R17	Support collaborative and sector specific research into relevant climate adaptation strategies relevant to the County and increase engagement and collaboration between all neighbouring local authorities Uisce Eireann, Group Water Schemes and small private supplies to support county wide water conservation initiatives and adaptation measures during drought conditions.	3	Adapt.	No. of Research Initiatives Undertaken	CCEW	Other Local Authorities, Uisce Eireann	Q4 2024	Engagement with other parties	13.3
R18	Implement the Local Just Transition Plan for West Kildare to support and advance sustainable social, economic, and environmental development in the transition to a low carbon future in the West Kildare region, having due regard to environmental sensitivities in the area such as noise, landscape and visual amenity, cultural heritage and biodiversity related sensitivities.	4	Both	% of Actions Delivered	CPCS	All Depts.	Q4 2024	Funding	8.2
R19	Support the programme for a free energy report for householders in the Just Transition area to provide advice on options for retrofit and free support for accessing grants such as the 'better energy communities' and 'national retrofit' grants, whilst advocating and exerting influence to ensure appropriate regard is had to the need to protect and conserve protected structures during retrofitting.	4	Both	No. of Homes Supported	CCEW	All Depts.	Q4 2024	Funding	8.2

SP No.	Action	Obj.	Adapt/ Mit./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
R20	Support Just Transition projects with a climate focus, such as the Midlands Bioenergy Development Project within the County, whilst advocating and exerting influence to ensure such projects promote climate action co-benefits and do not contravene relevant environmental protection criteria or cause significant negative environmental effects.	4	Both	No. of Projects Delivered	CCEW	SEAI	Q4 2024	Funding	8.2
R21	Support innovation in rural economic development and enterprise through the diversification of the rural economy into new sectors and services, including those addressing climate change and sustainability.	5	Both	No. of New Services/Sectors	FDSIG	CCEW LEO	Ongoing to 2029	Funding	8.2
R22	Explore the creation of local authority apprenticeship programme in use of traditional materials and skills to assist in carrying out conservation of traditional structures to increase their climate resilience and raise awareness of the importance of traditional skills and materials, whilst incorporating appropriate training to mitigate against any environmental and biodiversity impacts that may arise on sites.	5	Both	No. of Posts Generated	FDSIG	CCEW	Ongoing to 2029	Availability of apprentices	8.2
R23	Organise capacity building training on all aspects of climate and biodiversity for community groups and internal staff, including sharing of experiences and use of exemplar projects and demonstration sites.	5	Both	No. of Training Programmes Delivered.	FDSIG	CCEW	Ongoing to 2029	None	8.2

Table 4-5: CAP Actions for Sustainability & Resource Management

Kildare CAP Strategic Goal 5: Sustainability & Resource Management									
Embed the principles of sustainability and the circular economy within all Council functions, empower citizens and business within the County to make informed sustainable, circular and climate positive choices.									
 <p>Sustainability & Resource Management</p>		Objectives		<ol style="list-style-type: none"> Support renewable electricity generation, transmission and use within the County in line with national and regional policy including the Electricity Storage Policy Framework. Support circular initiatives and infrastructure within the County including prevention, reuse, repair and recycling. Increase collection of circular resources for renewable energy systems. 					
SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
S1	Prepare and implement an overall Renewable Energy Strategy for the County that is informed by the National Planning Framework targets to support sustainable development of onshore wind and solar within the County, whilst advocating and exerting influence to ensure such projects promote climate action co-benefits and do not contravene relevant environmental protection criteria or cause significant negative environmental effects.	1	Miti.	Strategy Delivered	PEEDAC	All Depts.	Q4 2024	None	7.2
S2	Implement the Kildare County Council Wind Energy Strategy, whilst advocating and exerting influence to ensure such projects promote climate action co-benefits and do not contravene relevant environmental protection criteria or cause significant negative environmental effects.	1	Miti.	Strategy Implemented	PEEDAC	All Depts.	Q4 2024	None	7.2
S3	Support local community-based renewable energy projects and new micro-generation and small-scale generation renewable energy projects, where it is confirmed through appropriate environmental assessment that associated renewable energy development will not have any significant environmental effect.	1	Miti.	Total MWh Renewable Supported	CCEW	Eirgrid	Ongoing to 2029	Private Investment	7.2
S4	Support ongoing expansion and improvements to the electricity grid infrastructure within the County to support renewable generation and supply, having due regard to environmental sensitivities such as archaeology, European sites, biodiversity and amenity value, water and air quality.	1	Miti.	Total MWh Renewable Generated	CCEW	Eirgrid	Ongoing to 2029	Eirgrid Support and Funding	7.2

SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
S5	Develop an Electricity Demand Management Plan for all Council owned buildings and sites to measure existing electricity use and efficiency and to target appropriate measures and reductions.	1	Miti.	Plan Delivered	CCEW	FDSIG	Q3 2024	None	7.2
S6	Undertake a feasibility study on integrating solar photovoltaic at Kildare County Council owned car parks and on the roof tops of publicly owned buildings throughout the County, ensuring the study has appropriate regard to planning and environmental considerations. If considered feasible, the project should have appropriate regard to relevant planning and environmental protection criteria.	1	Miti.	Study Delivered	CCEW	FDSIG	Q3 2024	None	7.2
S7	Support Bord na Móna with the redevelopment of the headquarters at Newbridge with a view to promoting the area as a Green Energy Hub, having due regard to environmental sensitivities such as archaeology, European sites, biodiversity and amenity value, water and air quality.	1	Miti.	Hub Operational	PEEDAC	CCEW, Bord na Móna	Ongoing to 2029	Bord na Móna funding	7.2
S8	Require data centres to include strong energy efficiency measures (including demand management, energy efficiency, utilisation of waste heat or auto generation) to reduce operational carbon footprints through the use of sustainable sources of energy generation in the first instance and then the use of renewable sources of energy to power operations, where it is confirmed through appropriate environmental assessment that associated renewable energy development will not have any significant environmental effect.	1	Miti.	% Renewable Energy in New/Existing Data Centres	PEEDAC	All Depts.	Ongoing to 2029	Availability of Renewable Energy	7.2
S9	As part of the operational maintenance of all public lighting in the County, Kildare County Council shall develop and implement the phased introduction of energy-efficient lighting systems on all public lighting while having due regard for the impact the spectrum of light used will have on nocturnal species such as bats.	1	Miti.	% Lighting as Energy Efficient	TMOS	Kilkenny Co	Ongoing to 2029	Funding	7.2

SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
S10	Kildare County Council will attain accreditation to the internal standard for energy management ISO 50001 to cover all energy and carbon emissions from local authority operations - Fleet, Municipal Buildings, Swimming Pools & Public Lighting.	1	Miti.	Accreditation Secured	CCEW	Mid-East Energy Unit	Q3 2024	None	7.2
S11	Implement a wider roll out of segregated brown bin collection systems across the County to capture this resource for treatment in Anaerobic Digestion plants for recovery of biomethane in line with the National Waste Management Plan for a Circular Economy.	3	Miti.	% Households with Kerbside Brown Bin Access	CCEW	NWCPO, Waste Collectors	Q2 2024	Public Engagement	12.4
S12	Engage with Uisce Eireann to determine the feasibility of using waste water sludges in Anaerobic Digestion plants for recovery of biomethane within the County.	3	Miti.	Study Delivered	CCEW	Uisce Eireann	Q4 2024	Sludge Availability	12.4
S13	Support the circular initiatives such as prevention, reuse, repair and recycling of resources to minimise waste treatment at waste to energy plants or landfills. Undertake a feasibility study to create a 'Bring/Take' centre within a key hub in the County, ensuring the study has appropriate regard to planning, waste management and environmental requirements, considerations and constraints.	2	Miti.	% Waste Diverted from Recovery and Disposal	CCEW	RWMPO	Ongoing to 2029	Private Funding	12.2
S14	Implement and promote equipment sharing hubs for (seeds, toys, garden equipment, power tools, etc.) within the County to support community ownership and reduce consumption.	2	Miti.	No. of Hubs Established	CCEW	CCPS	Ongoing to 2029	Public Engagement	12.8
S15	Ensure that all Kildare County Council waste contracts are aligned with the waste hierarchy and minimise disposal and recovery in favour of circular systems and the elimination of single use plastics.	2	Miti.	% Contracts that Apply Waste Hierarchy in Procurement	FDSIG	CCEW	Q1 2024	National Procurement Policy	12.7
S16	Promote and enable industrial symbiosis between commercial operators to minimise waste and increase circularity.	2	Miti.	No. of Direct Agreements Secured	CCEW	Private Industry	Ongoing to 2029	Private Funding and Engagement	12.6
S17	Support the introduction of bioeconomy infrastructure and initiatives that align with the policies of this Plan and the National Bioeconomy Action Plan 2023-2025.	2	Miti.	No. Initiatives Introduced	CCEW	Private Industry	Ongoing to 2029	Private Funding and Engagement	12.6



Photographer: David Morrissey, Source: Kildare County Council

5. Decarbonising Zone Vision and Mission



Image: Farming in Killea. Source: Mark McGuire

5. Decarbonising Zone

5.1 Overview

The development of decarbonising zones is mandated through the Climate Action Plans and specifically the Climate Action Plan 2019 includes the following action and sub-action:

Action 165: Extend flagship low-carbon projects to other towns and villages.
Each local authority will identify and develop plans for one 'Decarbonising Zone.'

This was further supported by the Climate Action Plan 2021 with the following:

Action 80 Support, monitor and assess Local Authority Climate Action.
Each Local Authority will identify and develop plans for one 'Decarbonising Zone.'

While not specified in the Climate Action Plan 2023, the requirement for the establishment of a decarbonising zone and associated plans is established through the earlier Climate Action Plans and details of the decarbonising zone are presented in this chapter of this Plan.

[Technical Annex D](#) of the Local Authority Climate Action Plan Guidelines specifically relates to developing a plan for Decarbonising Zones (DZ) which has been applied to the development of this chapter. The guidelines define a DZ as follows:

A DZ is a spatial area identified by the local authority in which a range of climate mitigation, adaptation and biodiversity measures and action owners are identified to address local low carbon energy, greenhouse gas emissions, and climate needs to contribute to national climate action targets.

The aim of developing a DZ is to deliver outcomes capable of meeting the national emission reduction targets of 7% minimum per annum reduction in carbon emissions to 2030 to achieve a cumulative 51% reduction by 2030 and net zero by end of 2050 from the baseline year of 2018.

The successful delivery of actions in the DZ may then be rolled out to other 'Fast Follower' towns in the County for implementation under the CAP.

5.2 Maynooth Decarbonising Zone (DZ)

The identification of a DZ area was informed by the criteria set out in Circular Letter LGSMO1-2021 issued by the DHLGH in February 2021 and the Council has identified Maynooth as the DZ for the County and the spatial extent of the DZ is shown in **Figure 5-1**.

Maynooth town has a permanent population of 17,259 in 2022, up from 14,585 in 2016 (a 18% increase). In addition to this population growth, Maynooth University (MU) has a current student population of 18,500. Maynooth is also one of the fastest growing towns in the country with projections for significant further population growth in the future. This presents a significant challenge in decoupling emissions from population growth and economic activity in the town.

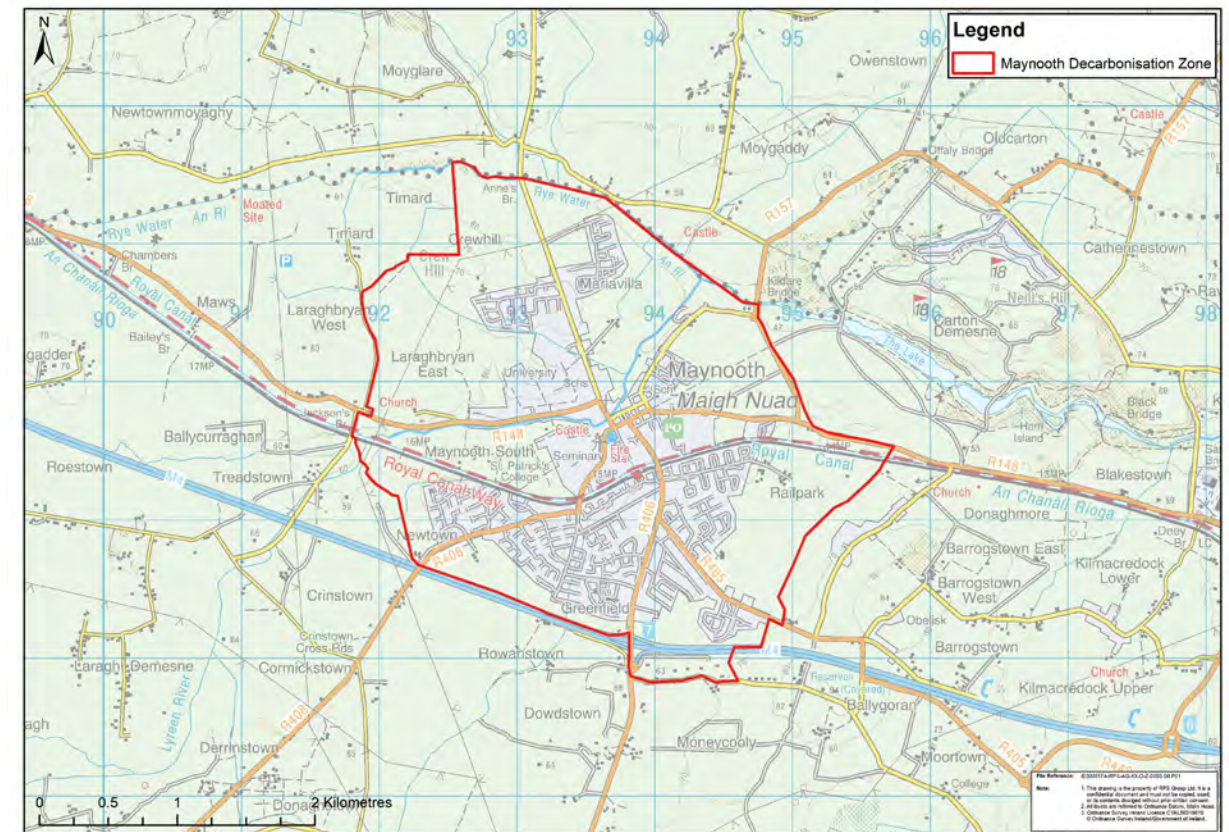


Figure 5-1: Spatial Extent of the Maynooth Decarbonisation Zone

Maynooth was chosen as the DZ for several reasons whereby the town is best placed to achieve the required levels of decarbonising including:

- There is an existing Active Travel Plan for cycling and walking in place;
- Potential for green measures in public development (e.g. Carton Avenue and Harbour Field) to maintain and enhance the open space;
- Potential to develop green infrastructure under the Outer Orbital Route (OOR);
- The opportunity to include these measures in the Local Area Plan 2024-2030 which is being drafted in tandem with this Plan;
- The presence of the university within the DZ as the climate research centre within the State; and
- The future potential development of enhanced rail service through the DART+ West project and the BusConnects project.

In short, Maynooth has several advantages that makes the town ideal as a DZ to act as a test bed for the County to assess the viability for wide roll out of measures to other large towns in the County termed 'Fast Followers'.

5.3 Summary of the Decarbonising Zone Emissions Profile

As per the guidelines, the Baseline Emissions Inventory for Maynooth was developed using a Tier 3 spatially led approach as per Annex C of the guidelines. Specifically, the methodology devised by SEAI and Codema ('Developing CO₂ Baselines – A Step by Step Guide for your Local Authority,' 2017) has been applied to determine the baseline. The relevant input data and emission factors applied for each of the sectors addressed in the BEI are as per those listed in for the CAP in **Table 3-3** but tailored for the Maynooth area only.

Based on this methodology the total Maynooth DZ Baseline Emissions Inventory for 2018 is calculated as **73,635 tCO_{2e}**. The sectoral breakdown of the BEI is shown in **Table 5-1** and illustrated in **Figure 5-2** and shows that the residential (**38.5%**) and transport (**36.7%**) sectors are the largest sources with the commercial sector third (**16.5%**). The remaining sectors equate to a combined figure of less than 10% of the total emissions.

These baseline results indicate that the actions in this Plan for Maynooth must primarily focus on the residential, transport and commercial sectors to manage these high emissions sources and achieve the levels of decarbonisation required. **Figure 5-3** shows an illustration of the levels of reductions required against each of the sectors if a 51% pro-rata reduction for all sectors was adopted and highlights the scale of the task under residential and transport.

The national 51% reduction target requires a minimum reduction of **37,544 tCO_{2e}** in the Maynooth DZ by 2030.

Sector	Maynooth Baseline Emissions Inventory 2018 (tCO _{2e})	Share of BEI (%)
Residential	28,370	38.5%
Transport	27,046	36.7%
Commercial	12,120	16.5%
Agriculture	3,611	4.9%
Municipal	1,046	1.4%
Social Housing	744	1.0%
Wastewater	427	0.6%
Waste	271	0.4%
Total	73,635	100%

Table 5-1: Sectoral and Total 2018 Baseline for Maynooth DZ

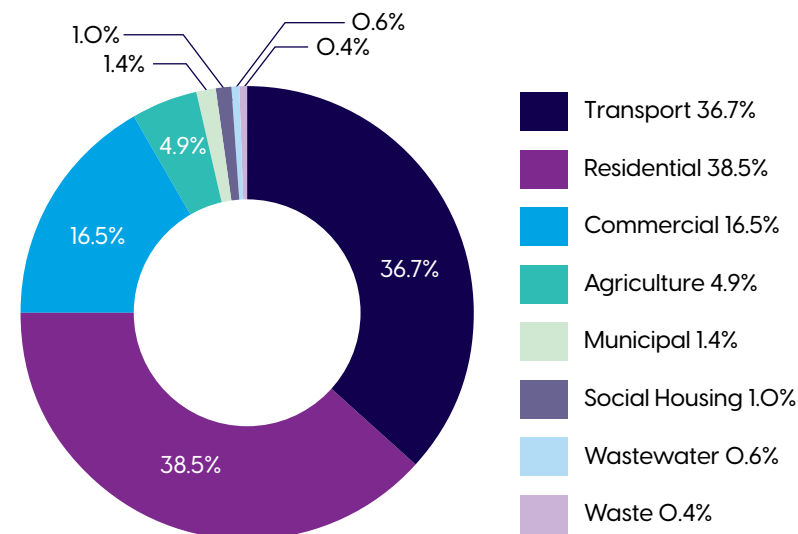


Figure 5-2: Sectoral and Total 2018 Baseline for Maynooth DZ

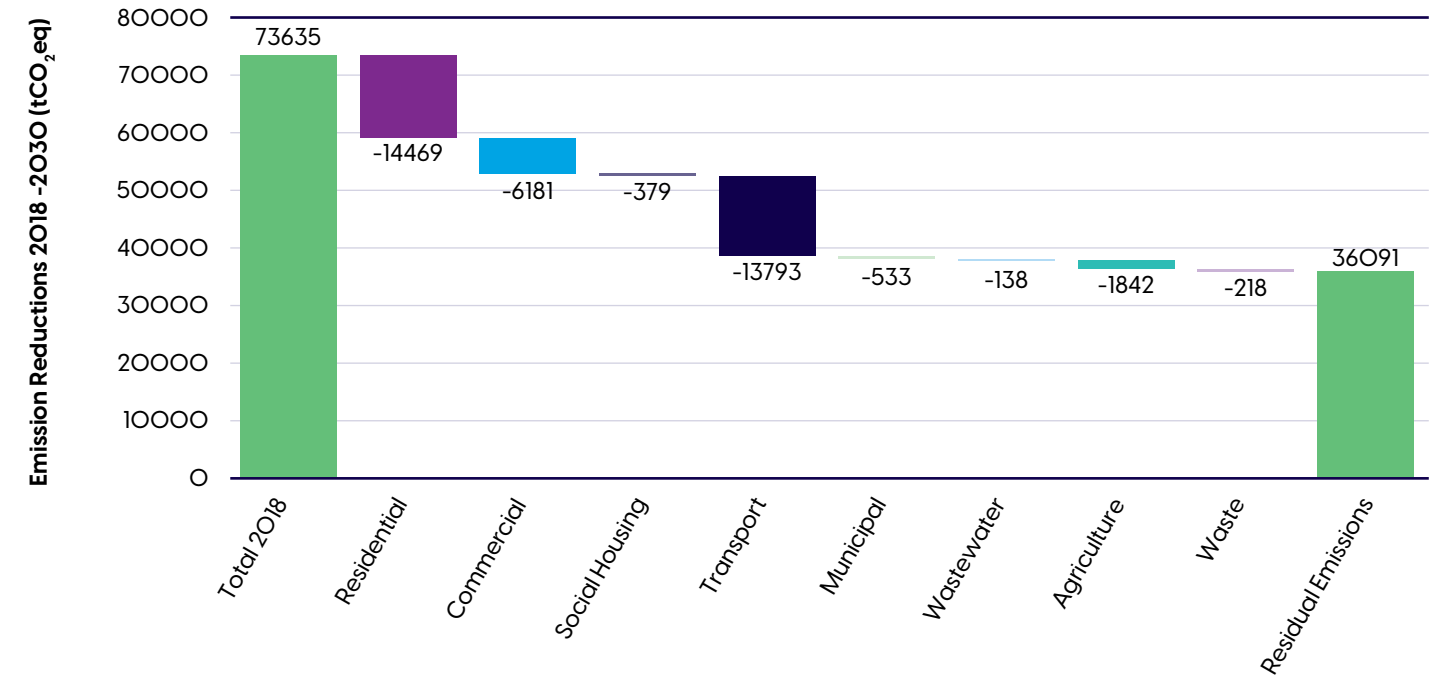


Figure 5-3: Scale of Sectoral Emissions Reduction for Maynooth DZ

5.4 Decarbonising Zone Vision and Mission

Setting a vision for the DZ is an opportunity to articulate the purpose of the DZ through an aspirational but realistic statement. To this end the vision for the implementation of the DZ in Maynooth is presented as follows:

Vision for Maynooth DZ

To make our Maynooth Decarbonising Zone climate neutral together by 2050 for a sustainable tomorrow.

As with the CAP vision, a supporting mission statement has been devised as an action-oriented focused statement that establishes the overarching priorities of the Council in delivering the vision for DZ implementation in Maynooth. This mission is stated as follows:

Mission for Maynooth DZ

To deliver a suite of ambitious sectoral actions that can reduce emissions in the DZ in line with the prescribed targets for each sector and achieve a 51% reduction in emissions within Maynooth by 2030 and to employ these proven actions in other 'Fast Follower' towns in the County.

5.5 Register of Opportunities

While developing the baseline emissions inventory for the DZ a series of simultaneous actions were undertaken to support the development of actions as follows:

- **Policy Review** – a detailed policy review was undertaken to consider both existing and pending policy and legislation that may shape the sectors and actions under consideration. This review included EU and national climate policy, other environmental, energy and transport policy as well as national and local land use policy such as the County Development Plan.
- **Best Practice Review** – entailing a review of best climate action practice within other local authorities within the State and within other EU Member States to identify novel or emerging issues of relevance to Maynooth;
- **Stakeholder Engagement** – entailing significant engagement with local councillors, the citizens of Maynooth, university representatives, local business leaders and farming groups. Each of these engagements sought to explore opportunities and constraints around climate action and to elicit the broad-spectrum views on the key considerations for delivering the DZ actions.

The above exercises, in conjunction with the baseline, were then used to develop the Register of Opportunities for Maynooth. The Register of Opportunities is the portfolio and pipeline of interventions, projects and actions that include mitigation, adaptation and biodiversity measures, to deliver the targets set for energy and emission reductions. A review of the Register of Opportunities has informed the development and quantification of the impact of DZ actions presented within this Plan. This quantification has been undertaken based on the 2018 baseline data and has excluded the following influencing factors that are relevant to the future decarbonisation of Maynooth:

- Population growth – as part of the Metropolitan Area Strategic Plan contained in the Regional Spatial and Economic Strategy 2019-2031 for the Eastern and Midland Region, Maynooth has been allocated a population increase of up to 10,000 persons over the period to 2031. Such a significant population growth will potentially increase Residential, Transport and other sources of emissions within the town.
- Renewable electricity – for the 2018 baseline the share of renewable electricity was 38% while CAP23 includes a target to increase the share of electricity generated from renewable sources to 80%. During this transition, the carbon intensity of the electricity generating sector will continue to reduce thereby leading to a natural reduction in electricity based emissions from the Residential, Social Housing, Commercial, Wastewater and other sectors even in the absence of the actions in this Plan.

In short, potential increases in population and potential decreases associated with decarbonising the electricity generating sector have not been factored into the Register of Opportunities.

The results of the Register of Opportunities are summarised **Table 5-2** which outlines the following:

- The sectoral 2018 baseline emissions;
- The target emissions reduction based on a standard 51% emissions reduction across all sectors;
- The projected emissions reductions based on the implementation of the opportunities identified as potential actions for this Plan; and
- A summary of the opportunities considered to have the potential for greatest action.

The result of this analysis indicates that with the 'hard' actions listed (i.e. those that may be readily quantified such as retrofitting dwellings or shift to electric vehicles), there is a potential to decrease 2018 baseline emissions by up to 46% by 2030 if all actions are fully implemented. With the implementation of further 'soft' measures which are more difficult to quantify (e.g. behaviour change on modal shift to public transport or use of remote office hubs) there is potential for the town to achieve the 51% reduction by 2030. Again, these projections exclude the concepts of population growth and decarbonising the electricity grid and the results presented should be considered in this regard.

These considered opportunities are used to inform the actions presented for implementation for each of the strategic priorities in **Section 5.6**.

Sector	2018 BEI (tCO _{2e})	2030 Reduction Target (tCO _{2e})	2030 Reduction Target (% of 2018 BEI)	Projected Reduction 2030 (tCO _{2e})	Projected Reduction 2030 (% of 2018 BEI)	Based on the Following Actions
Residential	28,370	-14,469	51%	-16,626	59%	This reduction is based on 80% of private residential building with a D2 BER rating or higher retrofitting to a B2 BER rating.
Commercial	12,120	-6,181	51%	-5,301	44%	The baseline data shows that 75% of the emissions from the commercial sector comes from electricity and this trajectory assumes a 30% energy efficiency targets along with PV potential offsets.
Social Housing	744	-379	51%	-537	72%	This reduction is based on 100% social housing under control of the Council having fabric first retrofitting to a B2 BER rating.
Transport	27,046	-13,793	51%	-11,204	41%	This analysis is based on achieving a target of 30% EVs + 10% BEVs as well as a 10% decrease in carbon emissions due to increased Active Travel.
Municipal	1,046	-533	51%	-586	56%	Based on the proposed actions for public lighting, PV at schools, retrofit of municipal buildings and decarbonising the Council fleet.
Agriculture	3,513	-1,842	51%	0	0%	Limited impact on decarbonising farming without more significant measures.
Wastewater	427	-218	51%	0	0%	Limited impact on decarbonising the treatment of municipal waste waters.
Waste	271	-138	51%	-64	24%	Diversion of biodegradable organic waste away from black bin residual waste streams to brown bins for recycling in AD and composting plants.
Total	74,491	-37,554	51%	-34,660	46%	

Table 5-2: Projected Reduction Targets with DZ Implementation

5.6 Decarbonising Zone Priority Areas, Objectives and Actions

The more ambitious suite of actions devised for the DZ have been devised following an analogous approach to that presented for the CAP in this Plan. The framework for actions included the following elements:

- A set of five Strategic Priority Areas which have been adopted as the five Strategic Goals for the CAP in **Section 4.3**;
- A set of high-level Objectives that support the delivery of the Strategic Priority Areas whilst framing the appropriate emphasis of the actions; and
- A suite of individual Actions that are specific, action-focused, time-bound and measurable reflecting a scaling up of ambitious local level climate action.

The framework of Objectives and Actions for the Decarbonising Zone are presented in the following tables with each one devised for a Strategic Priority Area:

Table 5-3: Actions for Governance & Leadership;

Table 5-4: Actions for Built Environment and Transport;

Table 5-5: Actions for Natural Environment & Green Infrastructure;

Table 5-6: Actions for Communities: Resilience & Transition; and

Table 5-7: Actions for Sustainability & Resource Management.

The layout of the tables in relation to Strategic Priority Areas, Objectives, Actions and the assigned responsibility are analogous to that presented for the CAP actions in **Section 4.3**.

Table 5-3: DZ Actions for Governance & Leadership



Maynooth DZ Strategic Priority Area 1: Governance & Leadership Kildare County Council will show leadership in mitigating climate emissions to achieve our 51% target by 2030, enabling a climate resilient County by mainstreaming climate action, governance change and awareness across all of our services.									
 Governance & Leadership		Objectives		1. Fund and resource the implementation of the Maynooth Decarbonising actions. 2. Lead by example to inspire climate action. 3. Collaborate with the community to encourage climate action initiatives.					
SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
DZG1	Resource a dedicated and trained Green Business Officer within Maynooth to support the county Local Enterprise Office, the Community Climate Action Officer and Town Green Teams.	1	Comb.	Resource hours	CCEW	LEO	2024	None	13.3
DZG2	Create and support formal linkages between key community, business and education bodies to facilitate collaborative climate action.	3	Comb.	No. of linkages created.	CCEW	LEO	2024	None	13.3
DZG3	Ensure that all council spending in Maynooth is fully aligned with green procurement practices and promote these practices in the private sector.	2	Comb.	% GPP Spend	FDSIG	CCEW	Annually to 2029	None	12.7
DZG4	Undertake a study to assess the use of financial instruments to stimulate climate action in the business and community.	1	Comb.	Study Delivered	FDSIG	CCEW	2024	Supporting Regulation	13.3
DZG5	Promote best practice climate action case studies within the town.	2	Comb.	No. of Studies	CCEW	None	2024	None	13.3
DZG6	Fund the actions listed for the implementation of the Maynooth Decarbonising Zone.	1	Comb.	€ annual spend	FDSIG	CCEW	Annually to 2029	Central Funding	13.3
DZG7	Collaborate with Maynooth University to align climate action initiatives within the town, having due regard to opportunities to promote climate action co-benefits and environmental protection requirements.	3	Comb.	No. of initiatives	CCEW	MU, Arts Section	2024	MU Climate Plan	13.3
DZG8	Implement a monitoring regime and report annually on the implementation of these actions and revise accordingly to tackle emerging climate action priorities.	1	Comb.	No. annual reports	CCEW	None	Annually to 2029	None	13.3

Table 5-4: DZ Actions for Built Environment and Transport

Maynooth DZ Strategic Priority Area 2: Built Environment and Transport The Council will deliver on obligations and targets to reduce emissions, in Council owned built environment, transport assets and promote the transition of private assets to deliver a climate resilient and low carbon County.									
 <p>Built Environment & Transport</p>		Objectives		<ol style="list-style-type: none"> Promote the retrofit of existing buildings and ensure all new buildings are zero energy buildings. Promote and enable a modal shift from private to public transport within Maynooth. Support active travel infrastructure and initiatives to facilitate more walking and cycling. Enable the transition of road vehicles to electric or other low-carbon transport options. 					
SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
DZB1	Undertake a feasibility study of the 10-minute town concept for the future development of the Maynooth area.	1	Miti.	Study Delivered	PEEDES	CCEW	2024	None	11.3
DZB2	Develop and promote a best practice case study on the Presentation Girls Primary School Energy Retrofit Pathfinder Project.	1	Miti.	Study Delivered	CCEW	None	2024	Project Delivery	7.2
DZB3	Engage with educational premises to promote the Climate Action Fund to provide photovoltaic panels (up to 6kW output) in all schools, where it is confirmed through a glint and glare assessment that such solar development will not have any potential glint and glare impact on sensitive receptors, or otherwise, where it is confirmed that such solar development constitutes exempted development under the Planning and Development Regulations by virtue of its size or location outside a Solar Safeguarding Zone, and having due regard to all other environmental sensitivities that could be impacted by such development.	1	Miti.	% Schools Committed	CCEW	None	Annual to 2029	None	7.2
DZB4	Deliver the retrofit of all social housing in the town to achieve a Building Energy Rating B2, 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.	1	Miti.	% Social Houses at BER B2	HR	PEEDES	Annual to 2029	None	11.3

SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
DZB5	Promote retrofit to Building Energy Rating B2 or Nearly Zero Energy Buildings for private properties in the commercial and community sector, 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.	1	Miti.	% Houses at BER B2	HR	PEEDES	Annual to 2029	Private Funding	11.3
DZB6	Support Maynooth University in the introduction of new-zero energy student accommodation within walking/cycling distance of the campus, 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.	1-4	Miti.	Accommodation Delivered in line with this Plan	MU	PEEDES	2024	None	11.3
DZB7	Support remote working through the development of office hubs and co-working spaces in Maynooth to aid in reduced daily commuter travel outside the town, ensuring such hubs are located and planned in a manner that does not cause unintended, negative local traffic and transport related impacts.	4	Miti.	No. of Office Spaces Delivered	PEEDES	FDSIG	Annual to 2029	None	11.3
DZB8	Prioritise transport policy in Maynooth to support safe active travel (pedestrians and cyclists) and public transport and to discourage private car use within the town (e.g., through car parking charges or car free days), ensuring policy has appropriate regard to all planning and environmental protection requirements, including the need to protect biodiversity, flora, fauna, important habitats and European sites.	2 & 3	Miti.	Kilometres Active Travel Delivered or Enhanced	TMOS	PEEDES	Annual to 2029	None	11.2

SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
DZB9	Promote active travel initiatives in the town to enable greater uptake of walking and cycling with a focus on strategic hubs such as the train station, the university and the town centre, having due regard to environmental sensitivities such as the receiving water environment, biodiversity, European sites local air quality, cultural heritage.	3	Miti.	No. of Daily Active Travel Journeys	TMOS	PEEDES	Annual to 2029	None	11.2
DZB10	Enable enhanced access to Maynooth train station, such as through improved footpaths, safe cycle lanes, local bus services, Park and Ride, etc., to maximise the modal shift potential of the local rail network, having due regard to environmental sensitivities such as the receiving water environment, biodiversity, European sites local air quality, cultural heritage.	2	Miti.	No. of Daily Train Passengers	TMOS	PEEDES	Annual to 2029	DART Project Approval	11.2
DZB11	Engage with bus companies to enhance the local bus services through delivery of an appropriately designated bus terminal in the town as well as associated infrastructure for improved bus services both in the town for linkages to other urban centres, having due regard to environmental sensitivities such as the receiving water environment, biodiversity, European sites local air quality, cultural heritage.	2	Miti.	No. of Daily Bus Passengers	TMOS	Bus Companies	2024	None	11.2
DZB12	Support the development of electric vehicle charging points at strategic points in the town and supercharge points and incentives for electric vehicle users, having due regard to ensuring disabled access to EV charging, and environmental sensitivities such as the receiving water environment, biodiversity, European sites, local air quality, cultural heritage.	4	Miti.	No. of EV Charging Points	TMOS	Private Developers, ZEVI	Annual to 2029	None	11.2
DZB13	Work with businesses to promote and implement climate friendly transport options such as last kilometre delivery in the town or HGV ban/ restrictions in the town centre.	4	Miti.	% Reduction in Road Traffic in Town Centre	TMOS	LEO and Commercial Operators	Annual to 2029	None	11.2

SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
DZB14	Undertake a feasibility study to assess the potential for a Park and Ride facility outside of the town centre that would support the reduction of road traffic volumes through the town centre and promote active travel or public transport options as an alternative. Ensure such development promotes climate action co-benefits, including SuDS and nature based solutions, and does not contravene relevant environmental protection criteria or cause significant negative environmental effects.	2-4	Miti.	Study Completed	TMOS	PEEDES	2024	None	11.2

Table 5-5: DZ Actions for Natural Environment & Green Infrastructure


Maynooth DZ Strategic Priority Area 3: Natural Environment & Green Infrastructure									
Protect and enhance the natural environment and green infrastructure within the County to support biodiversity and natural water systems, reduce the risk of negative impacts of climate change and enhance health and well-being for all citizens.									
 <p>Natural Environment & Green Infrastructure</p>		Objectives		<ol style="list-style-type: none"> 1. Protect and enhance the natural environment and biodiversity in Maynooth. 2. Build natural climate resilience through green infrastructure. 3. Create shared green spaces for citizens. 					
SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
DZN1	Support the creation of shared and connected green spaces in Maynooth town centre.	3	Comb.	Hectares Green Space	TMOS	CCEW	Annual to 2029	None	11.7
DZN2	Support green infrastructure projects such as those providing linkages to open spaces for biodiversity such as the Carton Avenue Masterplan, the Harbour Field Improvement Works, the Lyreen River, the Rye River, the Royal Canal Greenway or via the Outer Orbital Route, having due regard to environmental sensitivities such as archaeology, European sites, biodiversity and amenity value, and the potential to enhance ecological connectivity.	3	Comb.	Kilometres Green Linkages	TMOS	CCEW NPWS	Annual to 2029	None	13.1
DZN3	Explore the feasibility of the development of allotments and community gardens in Maynooth to support sustainable food production.	3	Miti.	Study Delivered	TMOS	CCEW	2024	None	13.1
DZN4	Promote and support a flagship farmers market for local growers of sustainable products.	3	Miti.	No. of Markets	CPCS	CCEW	2024	None	13.1

Table 5-6: DZ Actions for Communities: Resilience & Transition

SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
DZN5	Develop a landscaping plan for the town to enable the Council, citizens and businesses to coordinate the enhancement of biodiversity, ecological connectivity and any future native planting in the town.	1	Comb.	Plan Delivered	TMOS	CCEW	2024	None	13.1
DZN6	Support carbon sequestration through strategic planting of native provenance species for all new developments, underutilised lands or farms to promote biodiversity gain and ecological connectivity within Maynooth.	1 & 2	Adapt.	No. of Native Trees Planted	TMOS	CCEW	Annual to 2029	None	13.1
DZN7	Enhance green infrastructure in the town to support the development of sustainable urban drainage systems/ swales/rain gardens to improve climate resilience. Ensure all SuDS related construction works are designed and implemented in a manner that does not result in the occurrence of significant adverse environmental effects and does not result in adverse effects to European sites and biodiversity.	1 & 2	Adapt.	% Hectares served by Sustainable Drainage Schemes	PEEDES	CCEW	Annual to 2029	None	13.1
DZN8	Promote harvesting of rainwater, reuse of grey water and green/blue roofs and walls on all new developments in the town and support retrofits that include these measures.	2	Adapt.	No. of Projects	PEEDES	CCEW	Annual to 2029	None	13.1
DZN9	Support the agriculture sector in diversifying to sustainable agriculture practices such as the Signpost Programme as well as agritourism and agroforestry practices.	1	Miti.	% Hectares for Sust. Faming	CPCS	Agri Sector and agents CCEW	Annual to 2029	None	13.1
DZN10	Undertake an assessment to determine the feasibility of allowing the water courses in the town to revert to natural form to mitigate flood risk. Soft-Engineering	2	Adapt.	Assessment Delivered	CCEW IFI	PEEDES	2024	None	13.1


Maynooth DZ Strategic Priority Area 4: Communities: Resilience & Transition Mobilise climate action in local communities through increasing climate literacy to build capacity for climate action and a just transition for citizens in the County.									
 <p>Communities Resilience & Transition</p>		Objectives		<ol style="list-style-type: none"> Engaging citizens to deliver climate action. Ensure that all climate action messaging and initiatives are accessible to all ages and socio-economic groups within Maynooth. 					
SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
DZR1	Develop annual communication plans with targeted campaigns and tools to engage citizens in local climate action.	1	Comb.	Delivery of Annual Campaigns	CCEW	All Depts.	Annual to 2029	None	13.3
DZR2	Provide all ages and socio-economic groups within the town with the appropriate knowledge and resources to transition to a low carbon economy.	2	Comb.	No. of Engagements	CCEW	All Depts.	Annual to 2029	None	13.3
DZR3	Identify, train, resource and promote community, education and sectoral business champions in climate action.	1	Comb.	No. of Champions	CCEW	PEEDES, LEO	2024	None	13.3
DZR4	Develop a central digital platform for climate action guidance for communities and businesses within Maynooth.	1	Comb.	Set Up of Platform	CCEW	FDSIG	2024	None	13.3
DZR5	Facilitate a drop-in information clinic or hub within Maynooth to support communications and raise climate action awareness.	2	Comb.	Set Up of Clinic	CCEW	All Depts.	2024	None	13.3
DZR6	Undertake a feasibility study to develop a low-energy community centre within the town as an information hub including feasibility of a local Energy Agency.	1	Comb.	Study Delivered	CCEW	PEEDES	2024	None	13.3
DZR7	Implement the relevant actions for Maynooth in the Local Just Transition Plan for West Kildare.	2	Comb.	% Actions Delivered	All KCC Departments	CCEW	Ongoing to 2029	None	13.3

Table 5-7: DZ Actions for Sustainability & Resource Management

Maynooth DZ Strategic Priority Area 2: Sustainability and Resource Management. Embed the principals of sustainability and the circular economy within all Council functions, empower citizens and businesses within the county to make informed sustainable, circular and climate positive choices.									
 Sustainability & Resource Management		Objectives		1. Promote awareness of energy demand and production of local renewable energy. 2. Reduce reliance on take-make-waste processes for households, commercial, communities, farmers and Kildare County Council to support the transition to a circular economy.					
SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
DZS1	Enable the replacement of fossil fuel through supports for the development of micro-generation, small-scale and community-owned renewable generation within Maynooth, where it is confirmed through appropriate environmental assessment that associated renewable energy development will not have any significant environmental effect.	1	Miti.	Renewable MWhrs/annum	PEEDES	CCEW, ESB	2024	ESB Networks grid capacity.	7.2
DZS2	Liaise with ESB Networks to ensure prioritisation of the upgrade of the Maynooth electricity grid network to enable the required renewable energy generation capacity in the town, having due regard to environmental sensitivities such as the receiving noise, soils and water environment, biodiversity, European sites, local air quality, cultural heritage.	1	Miti.	Length of 110kV network	PEEDES	CCEW, ESB	2024	ESB Networks grid capacity	7.2
DZS3	Undertake a feasibility study of the potential for district heating or energy in Maynooth, ensuring such a report as appropriate regard to planning and environmental protection considerations.	1	Miti.	Study Delivered	PEEDES	MU CCEW	2024	None	
DZS4	Upgrade all public lighting in Maynooth to energy-efficient light-emitting diode (LED) lights or equivalent, while ensuring the lumen levels and spectral range are maintained or reduced/ controlled to avoid effects to biodiversity.	1	Miti.	% of LED Lighting	TMOS	CCEW	2024	None	

SP No.	Action	Obj.	Adapt/ Miti./ Comb.	KPI	Lead Dept.	Partners	Time	Depend	UN SDG Target
DZS5	Ensure that all Kildare County Council procurement of products and services for Maynooth is fully aligned with the circular economy (e.g. prohibit single-use items) and green public procurement practices.	2	Miti.	% Procurement compliant with GPP	CPCS	All Depts.	Annual to 2029	None	12.7
DZS6	Promote the concept of a sharing, reuse and repair society including waste resource exchanges for key products (tools, toys, etc), ensuring all reuse and repair promotion activities are carried out in accordance with good waste management practices; and accord with, or support the public's accordance with the provisions of the Waste Management Act.	2	Miti.	Materials Reused (tonnes)	CCEW	CPCS	2024	None	12.5
DZS7	Regulate waste service providers to ensure the rollout of organic waste bins across household, commercial and public collections in Maynooth and explore the option of a community composting bank.	2	Miti.	% Organic Bin Use	CCEW	Waste Collectors	2024	Waste Collectors	12.5
DZS8	Support the development of sustainable and circular infrastructure to manage organic wastes such as anaerobic digestion or composting in the town at an appropriate location in the vicinity of the town; whilst ensuring: 1. Appropriate regard is given to planning and environmental protection constraints and considerations during the development planning process; 2. Such development does not cause unintended, significant, negative environmental effects in the area; and, 3. Such facilities operate in accordance with the provisions of the Waste Management Act.	2	Miti.	Organic Waste Managed in town (tonnes)	CCEW	Waste Industry	2024	None	12.5
DZS9	Pilot a mobile segregated recycling centre in Maynooth to allow for the collection of niche items that previously were unable to be recycled in the town. This service would align with other collection days with prior notification.	2	Miti.	Pilot Study Completed	CCEW	PEEDES	2024	None	12.5

6. Implementation and Reporting

Image: Kilkea Castle Grounds. Source: Mark McGuire

6. Implementation and Reporting

The implementation and reporting phase will commence immediately upon adaptation and publication of the final Plan and the key phases for implementation are presented in **Figure 6-1** and summarised in the following sections.

While the Council has limited direct control on current emission sources, the Council will play a key leadership role within the County as an advocate for positive climate action and through exerting influence to ensure co-benefits for climate action and the wider environment.

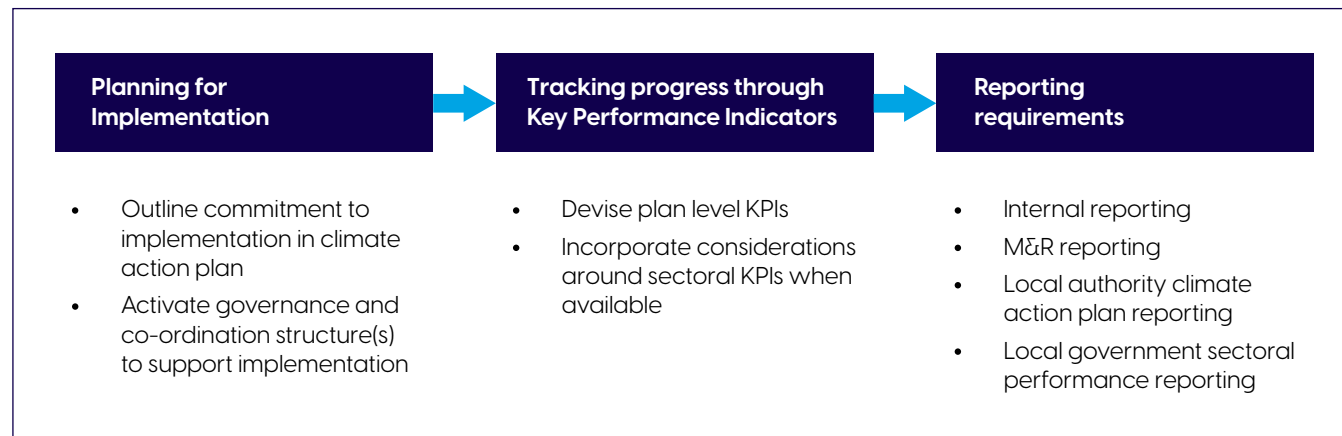


Figure 6-1: Implementing and Reporting Process

6.1 Planning for Implementation

This Plan will be implemented by the Council requiring a whole-of-Council approach but the ownership of the Plan is held within the Climate, Community, Environment and Water Directorate.

A Climate Action Office (CAO) was established in the Council in 2020 including:

- A Climate Action Coordinator;
- A Climate Action Officer;
- A Community Climate Action Officer; and
- An Energy Efficiency Officer.

The core CAO is supported by an administrative assistant and lead by a Director of Services. The role of this team is to mainstream climate action into the activities of the Council, monitor the implementation of the actions of this Plan and to coordinate the reporting and evaluation of the Plan, following approval by the Elected Members.

The core CAO is supported by the wider Climate Action subgroups and subcommittees across the organisation, that have ownership of particular actions in the Plan. These include the following Directorates:

- Finance, Digital Services, Innovation and Governance;
- Corporate, People and Cultural Services;
- Transport, Mobility and Open Spaces;
- Housing and Regeneration;
- Planning, Enterprise, Economic Development and Emergency Services.

These Directorate operate a number of relevant service areas including Library Services, Fire Services, Kildare Civil Defence, Local Community Development Committee (LCDC), Roads & Transportation (Sustainable Transport), Environment, Planning, Facilities, Water Services, Heritage & Biodiversity, Architectural Services, Parks, Local Enterprise and Finance. The core CAO will also be the point of contact to learn about climate action in the County.

The Council will work collaboratively and in partnership with a range of key stakeholders to support the delivery of this Plan. These stakeholders include but are not limited to the following – the Eastern and Midlands Climate Action Regional Office, the SEAI, the Local Authority Services National Training Group, the Eastern and Midlands Regional Assembly, the Local Government Management Agency, the City and County Management Agency, the Public Participation Network, Age Friendly Ireland and Comhairle na nÓg. These partnerships can provide opportunities for collaboration on projects, shared learnings, technical support and leveraging of funding opportunities during the implementation of actions in the Plan.

It is also clear that climate change is a transboundary challenge, and it does not stop at political and geographical borders. As such, a regional approach has been agreed by the local authorities in the Eastern and Midlands CARO, whereby they can collaborate closely on the implementation of the Climate Action Plans.

Following approval of this Plan an Implementation Plan/Summary will be developed for each action, which will set out in detail how the action will be delivered including, noting the responsible department and timescale. The Council will align the timing of internal implementation reporting intervals with that of sectoral progress reporting requirements.

6.2 Funding and Partnerships

To lead by example and drive the transition to a climate neutral society, the Council will need access to adequate funding for climate action projects towards achieving its 2030 and 2050 targets. Local authorities can access various types of funding such as government grants, European funds, private sector investment and community co-financing. It is recognised that while new climate action targeted funding calls may become available in the future, already established funding bodies will introduce or increase the level of funding streams to climate action focused categories.

The Council will continue to actively pursue new and existing funding opportunities from both European and National bodies that are aligned with its climate action objectives. Examples of projects that have already received external funding are listed below:

- Grass 2 Gas has received funding from Public Services Innovation Fund 2023 to the value of €50,000 to estimate the potential energy from converting biomass into green energy in Kildare before national roll out;
- Creative Ireland awarded €250,000 under the Creative Climate Action Fund II – Agents for Change to pilot a Climate Design Lab that aims to use design-thinking and behavioural economics to co-create solutions for Maynooth, the decarbonisation centre for the County; and
- The Council is included in a Science Foundation Ireland application with Maynooth University on the sequestration values for open space elements to evaluate carbon sources, sinks and sequestrators to design public spaces for biodiversity, biogas and sequestration of carbon.

Partnerships are also a key ingredient towards realising low carbon solutions for the sector. The private sector is already playing a role towards achieving the National Climate Objective and this type of collaboration can enhance the capabilities of the sector even further in achieving reductions in Ireland’s greenhouse gases by 51% by 2030 and becoming climate neutral by no later than 2050.

There are also benefits for the local government sector in partnering with the third level sector. The third level sector can provide research and development expertise to help local authorities, implement innovative solutions to reduce greenhouse gas emissions and adapt to climate change. These partnerships can also help local authorities access funding opportunities for climate action projects and initiatives. The Council will encourage and facilitate collaboration with the private and third level sectors where possible, significant engagement with Maynooth University has been undertaken in developing this Plan.

6.3 Tracking Progress through Key Performance Indicators

Performance by the Council on the delivery of energy efficiency and emissions reduction relating to the Council's infrastructure and assets, as prescribed by national climate obligations, will continue to be tracked through the established Monitoring and Reporting (M&R) system managed by the Sustainable Authority of Ireland (SEAI).

For actions outside of this, one of the reporting avenues that the Council engages with to communicate progress on the delivery of actions is through Sectoral Key Performance Indicators (KPIs). This informs the performance of the local government sector on climate action.

Strengthened climate action policy at national level inspired a determined response and commitment by local government, as a sector. This commitment is set out in the Country and City Management Association (CCMA) published strategy on behalf of local government entitled [Delivering Effective Climate Action 2030 \(DECA 2021\)](#).

A key consideration for the local government sector on 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.

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 in area of climate action;
- Energy efficiency;
- Emissions reduction;
- Active travel measures;
- Severe weather response.

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

6.4 Reporting Requirements and Arrangements

6.4.1 Internal Reporting

To ensure that delivery is timely, the implementation of the Plan will be monitored via an in-house monitoring system. The local authority will also facilitate reporting to Elected Members on an annual basis and the frequency of reporting may be increased where relevant data is made available on a more frequent basis.

6.4.2 Monitoring and Reporting (M&R)

The Council will continue to report on energy performance and emission targets annually to the SEAI. To track progress on the DZ implementation the Council will continue to engage with the An Taisce Green Communities Low Carbon Planning team to collaborate in the delivery of the DZ Register of Opportunities for Maynooth.

6.4.3 Sectoral Performance

The Council will report annually on their performance on climate action by way of KPIs (as outlined in **Section 6.2**) to inform the performance of the local government sector on climate action, as part of the local government DECA 2030 Strategy.

6.4.4 National Climate Action Plan

The Council will, in accordance with Part 3(w) of the Local Authority Climate Action Charter, report annually to the DECC 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.

6.4.5 Covenant of Mayors

The Council is a signatory to the Covenant of Mayors for Climate and Energy and as such commits to the completion and monitoring of a Sustainable Energy and Climate Action Plan (SECAP). The development of the SECAP will primarily draw on the findings from the Baseline Emission Inventory and the Climate Change Risk Assessment.

6.4.6 Sustainable Development Goals

The 2018-2020 Sustainable Development Goals (SDGs) National Implementation Plan acknowledged that local government 'has a crucial role to play in translating national policies into tangible practical actions that can help to concretise the SDG objectives into our individual and communities' behaviours and goals.' Ireland's Second National Implementation Plan for the Sustainable Development Goals 2022-2024, intends to build on the role of local government in Ireland and incorporates specific actions to do so which include:

- Showcasing, sharing and building on existing initiatives;
- Capacity building and awareness raising;
- Embedding the SDGs in Governance and reporting frameworks;
- Incorporating the SDGs within local planning frameworks; and
- Community Engagement.

Furthermore, local authorities are recognised as one of the Agenda 2030's nine 'Major Groups', which play a crucial role in sustainable development and Agenda 2030 also highlights the particular role of local authorities and communities in sustainable urban development. The Council is working to advance the SDGs, for example ;

- The incorporation of the SDGs into their Corporate and County Development Plans;
- Joining/establishing local and/or international partnerships;
- Development of a mapping tool to map SDG-related actions in the Council area;
- The provision of training; and
- The holding information events with external groups including universities, PPNs, Tidy Towns and Creative Ireland.

Each of the actions listed in this Plan for the County or for the Decarbonisation Zone are mapped against the relevant goals and targets in the SDG.

Appendix A: Glossary

6.5 Oversight

While the Council will implement and monitor the Plan, oversight of this implementation will be via a number of parties through a number of existing mechanisms such as:

- SEAI seek ongoing information on energy and emissions from the Council and this will continue through Plan implementation;
- Similarly, the CARO will seek annual data and information from the Council to inform the national emissions inventory; and
- DECC will have oversight of the Plan implementation and may issue guidelines in respect of the Plan with which the Council must comply.

6.6 Collaboration

As noted in this Plan, the sources of greenhouse gas emissions under the direct control of the Council equate to 2.6% of the total emissions for the County. While the Council will take the actions required to reduce these emissions, there is a clear need for collaborative community action from every citizen and organisation within the County to ensure that the Plan actions are delivered to help achieve national targets.

The Council will support all citizens in transitioning Kildare into a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy. The Council will facilitate and provide the necessary leadership where feasible.

°C	Degrees Celsius
AD	Anaerobic Digestion
AR6	IPCC Sixth Assessment Report
BER	Building Energy Rating
BIM	Building Information Modelling
CAP	Climate Action Plan
CAO	Climate Action Office
CARO	Climate Action Regional Office
CAU	Climate Action Unit
CCAC	Climate Change Advisory Council
CCEW	Climate, Community, Environment and Water
CH ₄	Methane
CO ₂	Carbon Dioxide
CO _{2e}	Carbon Dioxide Equivalent
COP27	27th Conference of the Parties
CPCS	Corporate, People and Cultural Services
CSO	Central Statistics Office
CWMF	Capital Works Management Framework
DAFM	Department of Agriculture, Food and Marine
DECC	Department of Environment, Climate and Communications
DETE	Department of Enterprise, Trade and Employment
DHLGH	Department of Housing, Local Government, and Heritage
DoT	Department of Transport
EED	Energy Efficiency Directive
ET	Enteric Fermentation
EPA	Environmental Protection Agency
ERDF	European Regional Development Fund
ESB	Electricity Supply Board
ESG	Environment, Social and Governance
ESRS	European Union Sustainability Reporting Standards
EU	European Union
EV	Electric Vehicle
FDSIG	Finance, Digital Services, Innovation and Governance
GHG	Green House Gas
GW	Gigawatt
GWh	Gigawatt-Hour
GWP	Global Warming Potential
Ha	Hectare
HEI	Higher Education Institutions
HR	Housing and Regeneration
IT	Information Technology
IPCC	Intergovernmental Panel on Climate Change
KCC	Kildare County Council
KPI	Key Performance Indicator
kW	Kilowatt
kWh	Kilowatt-Hour

LASNTG	Local Authority Services National Training Group
LAWPRO	Local Authority Waters Programme
LED	Light Emitting Diode
LEO	Local Enterprise Office
LULUCF	Land Use, Land Use Change and Forestry
M&R	Monitoring and Reporting
MD	Municipal District
MREP	Midlands Regional Enterprise Plan
MRTT	Midlands Regional Transition Team
MtCO ₂	Mega tonnes of Carbon Dioxide
MU	Maynooth University
MW	Megawatt
N ₂ O	Nitrous Oxide
NAF	National Adaptation Framework
NCCLA	National Climate Conversation on Climate Action
NDP	National Development Plan
NECP	National Energy and Climate Plan
NFCS	National Framework on Climate Services
NGO	Non-Governmental Organisation
NIR	National Inventory Report
NPWS	National Parks and Wildlife Service
NPF	National Planning Framework
NRRP	National Recovery and Resilience Plan
NTA	National Transport Authority
NZEB	Nearly Zero Energy Building
OECD	Organisation for Economic Cooperation and Development
OPW	Office of Public Works
PEEDAC	Planning Enterprise, Economic Development and Emergency Services
PPNs	Public Participation Networks
PSO	Public Service Obligation
PV	Photovoltaic
R&D	Research and Development
RED	Renewable Energy Directive
RESS	Renewable Electricity Support Scheme
RWMPO	Regional Waste Management Planning Offices
SDGs	Sustainable Development Goals
SEAI	Sustainable Energy Authority Ireland
SECAP	Sustainable Energy and Climate Action Plan
SME	Small and Medium-Sized Enterprise
SRTS	Safe Routes to School
STEM	Science, Technology, Engineering and Mathematics
SuDS	Sustainable Drainage
TMOS	Transport, Mobility and Open Spaces
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
WAP	Waste Action Plan
ZEB	Zero Energy Building
ZEVI	Zero Emission Vehicle Ireland

Appendix B: Abbreviations

Adaptation	Means any adjustment to— (a) any system designed or operated by human beings, including an economic, agricultural or technological system, or (b) any naturally occurring system, including an ecosystem, that is intended to counteract the effects (whether actual or anticipated) of climatic stimuli, prevent or moderate environmental damage resulting from climate change or confer environmental benefits.
Biodiversity	This refers to the variety of plant and animal life in an area and how they interact within habitats and ecosystems (like lakes and native forests).
Biogenic Methane Emissions	Biogenic methane is methane produced and released from living organisms like plants and animals. Methane significantly contributes to global warming (see definition of methane).
Biomethane	This is a naturally occurring gas that has been processed and can be used as a source of renewable energy. It is produced through matter like animal and plant material.
Building Energy Rating	BER stands for Building Energy Rating. A BER certificate shows you the energy performance of your home. It is a good indicator of how much you will spend on energy (like heat and light) and how much carbon you will produce to heat your home to a comfortable level. The BER rating goes from A to G. A-rated homes are the most energy efficient, comfortable and typically have the lowest energy bills. G-rated homes are the least energy efficient and require a lot of energy to heat the home.
Built Environment	This refers to structures we build and their surrounding environment such as bridges, roads and paths.
Carbon Budgets	A carbon budget is how some countries set a limit in policy or law on how much greenhouse gases they emit over a fixed time. In Ireland, the carbon budget will be set by law. The Climate Action and Low Carbon Development (Amendment) Bill sets out how carbon budgets will be set in Ireland. Government will put the carbon budget in place with advice from the Climate Change Advisory Council. A series of carbon budgets will be made and each one covers five years.
Carbon Dioxide (CO ₂)	Carbon dioxide is a powerful greenhouse gas. It is naturally part of the air we breathe. However, human activities like burning of fossil fuels and deforestation have led to an increase in CO ₂ in the air that contributes to climate change.
Carbon Emissions	Carbon emissions are created when particular gases are released into the air from activities like burning fossil fuels for energy. It includes gases like carbon dioxide and methane. This is because they both contain carbon. 'Carbon emissions' is sometimes used as a shorthand to describe all greenhouse gases.
Carbon Footprint	Carbon footprint measures the carbon emissions linked to a particular activity or product. It includes emissions involved in all stages of making and using a product or carrying out an activity. The lower the carbon footprint the less that a product or activity contributes to climate change
Carbon Neutral	This means that the amount of greenhouse gas released into the air equals the amount removed from the air.
Circular Economy	This type of economy uses a more efficient and low-carbon approach. It makes sure that we reduce and reuse products and materials so that less waste is produced.
Climate	Climate means the average weather conditions in a region over a long time – usually 30 years or more. The big difference between climate and weather is the length of time involved. Weather can change from minute-to-minute, day-to-day, but climate is the average of weather over a longer time in a specific area.
Climate Action Fund	The Government Climate Action Fund supports initiatives and projects that help to achieve Ireland's climate and energy targets in a cost-effective way. The fund supports projects that without it would not happen. It encourages innovative projects to develop climate change solutions.
Climate Action and Low Carbon Development (Amendment) Bill	This is a new law being developed that sets a target for Ireland to be a climate resilient and climate neutral economy by 2050. We call this the 'national 2050 climate objective'. It requires Government to set a series of carbon budgets and gives a new role to the Climate Change Advisory Council to help develop these budgets. It also sets out the processes for how we develop our climate plans and policies to help us meet our climate objectives. For example, the Climate Action Plan must be updated each year.
Climate Action Plan	This is Government's annual plan that sets out how we will meet our climate commitments and reach EU and international climate targets. The Climate Action Plan 2019 sets out 183 actions and more than 600 individual measures aimed at tackling climate change. Reports are published each quarter, and they show the progress we are making.
Climate Change	This is a change in long-term weather patterns due to natural forces, or human activity, or both.
Climate Resilience	The ability to cope with the negative impacts of climate change in a way that reduces these impacts on people and the environment and takes advantage of any positive opportunities.
Decarbonisation	This happens when we stop using fossil fuels throughout the whole country.

Electric Vehicle	This is a vehicle powered fully or mostly by electricity and not by fossil fuels like petrol or diesel.
Emissions	These are gases or particles released into the air that can contribute to global warming or poor air quality.
Emissions Projections	These are the expected estimates (projections) of the amount of greenhouse gases released every year up to 2040. The EPA prepares the official emissions projections for Ireland. The projections are based on current and planned Government policy, and they help us see how we are doing in terms of reducing greenhouse gas emissions.
Energy Efficiency	It is energy efficient when we use less energy to achieve the same result.
Enteric Fermentation	Enteric Fermentation is fermentation that takes place in the digestive system of animals, in particular ruminants (cattle, sheep, goats).
Environmental Protection Agency (EPA)	The Environmental Protection Agency is an independent state agency that is responsible for a wide range of functions to protect the environment.
European Green Deal (2019)	This Plan is a roadmap for making the EU's economy environmentally sustainable. It outlines the actions and targets needed to make Europe the first climate-neutral continent by 2050. The Green Deal was published by the EU Commission in December 2019.
Exposure	Refers to the presence of assets, infrastructure, property, people, livelihoods, species or ecosystems, environmental functions, services and resources in places or settings that could be affected by extreme weather events.
Fossil Fuels	Fuels – such as coal, gas, peat and oil – that are formed in the ground over many thousands or millions of years from dead plants and animals and are used up once they are burned for energy
Global Warming Potential (GWP)	A measure of how much heat a greenhouse gas traps in the atmosphere (called 'radiative forcing') over certain time periods. Governments have agreed to use this measure to add up the impact of emissions of different gases and how they contribute to global warming.
Green Economy	A green economy is low-carbon, resource efficient and socially inclusive.
Greenhouse Gas Emissions (GHGs)	Gases that trap heat from the Earth's surface causing warming in the lower atmosphere and slowing down loss of energy from Earth. The major greenhouse gases that cause climate change are carbon dioxide, methane and nitrous oxide.
Hazards	Refers to potential sources of harm. In this document the term refers to climate-related physical events or trends in relation to their physical impacts.
Heat Pumps	Heat pumps are mainly electrical devices which convert available heat for use in homes, offices and other suitable buildings. As they use renewable heat sources, they are more environmentally friendly than fossil fuel heating. Different types of heat pump systems draw heat from different sources including: <ul style="list-style-type: none"> · Air · Water · Ground
Intergovernmental Panel on Climate Change (IPCC)	This international body works with governments, or nations, or both, to assess the science of climate change. It is run by the United Nations and is made up of scientists nominated by each Government.
Methane (CH ₄)	This powerful greenhouse gas comes from sources like agriculture, fossil fuels and waste. It can be used as a fuel. For example, natural gas is mostly methane. It is the second most significant contributor to greenhouse gas emissions in Ireland.
Mitigation	Means any human intervention aimed at reducing harmful influences on the earth's climate system, including action aimed at reducing emissions and creating or enhancing sinks.
Net Zero Emissions	This refers to achieving an overall balance between greenhouse gas emissions produced by human activity and greenhouse gas emissions taken out of the atmosphere.
Nearly Zero Energy Buildings (NZEB)	A building that has a very high energy performance. This means they need a very low amount of energy, fuelled mainly by renewable energy sources, in these houses or nearby. NZEB homes will be 70% more energy efficient and emit 70% less carbon dioxide than those built under previous building rules.
Paris Agreement	This legally binding climate change agreement was adopted in Paris, France, in December 2016. It sets out a global framework to avoid dangerous climate change by limiting global warming to well below 2°C and trying to limit it to 1.5°C. It also aims to strengthen countries' ability to deal with the impacts of climate change and support them in their efforts. Ireland signed up to the Paris Agreement in 2016.
Renewable Electricity Support Scheme (RESS)	This Government scheme provides financial support to renewable electricity projects in Ireland to help us achieve our renewable electricity goals. It also aims to increase community participation in, and ownership of, renewable electricity projects. It aims to make sure electricity consumers get value for money and to improve security of our electricity supply.
Renewable Energy	Renewable energy comes from renewable resources like: <ul style="list-style-type: none"> · Wind Energy · Solar Energy · Biomass These resources can regenerate naturally and we can use them repeatedly without reducing their supply.

Resilience	Is the capacity of social, economic and ecosystems to cope with a hazardous event, trend, or disturbance, responding or reorganising in ways that maintain their essential function, identity and structure.
Retrofitting (Energy Retrofitting)	In relation to buildings, energy retrofitting is anything done to improve the energy efficiency of an existing building. This usually includes upgrading the roof and wall insulation to help keep the heat in and installing renewable energy systems like heat pumps.
Risk	Is composed of three interrelated components – Hazard, Exposure and Vulnerability.
Sectoral Adaptation Plans	These plans are prepared by government departments for sectors like agriculture, transport, and health to help ensure we are prepared for the impacts of climate change.
Sustainable Development Goals (SDGs)	These are goals (17 in all) developed by the United Nations to address the urgent environmental, political and economic challenges facing our world. Their ultimate goal is to end poverty, while protecting the planet and building economic growth.
Sustainable Energy Authority of Ireland (SEAI)	The Sustainable Energy Authority of Ireland is Ireland's national energy authority. SEAI works with Government, homeowners, businesses, and communities to help create a clean energy future.
UNFCCC	This stands for United Nations Framework Convention on Climate Change. It is an international treaty to address climate change. It came into force in 1994 and has almost universal membership (197 members). The Paris Agreement is made under this treaty.
UNFCCC COP	This stands for Conference of the Parties (states) to the UNFCCC. It is where decisions are made about climate change under the UNFCCC. All states that are members of the UNFCCC are represented at the COP. It meets most years. The last COP (COP 28) was held in Dubai in December 2023, and the next COP (COP 29) will take place in Azerbaijan in November 2024.
Vulnerability	Refers to the propensity or predisposition to be adversely affected. Vulnerability encompasses sensitivity (which refers to the degree to which an exposure will be adversely or beneficially affected by climate hazards) and adaptive capacity which refers to the ability of systems, institutions, humans, and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences.



Sustainable Energy and Climate Action Plan Template

The Sustainable Energy and Climate Action Plan (SECAP) template and its monitoring fields constitute the reporting framework of the Covenant of Mayors initiative. It has been developed by the Covenant of Mayors and Mayors Adapt Offices - together with the Joint Research Centre of the European Commission - and in collaboration with a group of practitioners from local and regional authorities. This Excel-based template is an offline working version of the official online template which has to be completed in English and submitted online via "My Covenant": http://www.euromayors.eu/sign-in_en.html. The online version of this template should be available as of 2017. Please note that it is not possible to import the data entered in this Excel into the online platform.



[Reporting Guidelines](#)
[SEAP guidebook](#)
[Urban Adaptation Support Tool](#)

Commitments:

- 2020 CO₂ reduction
- 2030 CO₂ reduction
- Long-term CO₂ reduction
- Climate Adaptation

Colour codes:

- Mandatory input cells
- Optional input cells
- Output cells
- Pre-filled cells (for the online version)
- Definitions (visible when clicking)
- Monitoring fields

Template Structure & Minimum Reporting Requirements:

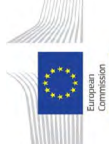
Template Structure	Minimum Reporting Requirements		Link to Tab
	At the registration stage	Within 2 years (and then every 2 years)	
Mitigation			
Strategy	optional	*	↔
Emission Inventories	optional	*	*
Mitigation Actions	optional	(BEI) (MEI every 4 years)	↔
Mitigation Report			
Monitoring Report		*	↔
Adaptation			
Adaptation Scoreboard	*	*	*
Risks and Vulnerabilities	optional	*	*
Adaptation Actions	optional	optional (min. 3 Benchmarks)	↔
Adaptation Report			↔

* mandatory

Objectives

- IDENTIFY & ASSESS local climate and energy challenges and priorities
- MONITOR & REPORT progress towards commitments
- INFORM & SUPPORT decision-makers
- COMMUNICATE results to general public
- ENABLE self-assessment & FACILITATE experience-sharing with peers
- DEMONSTRATE local achievements to policy-makers

Developed by: Covenant of Mayors & Mayors Adapt Offices, Joint Research Centre of the European Commission



Last update: July 2016

The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Communities. The European Commission is not responsible for any use that may be made of the information contained therein.

Emission Inventory

HOME

Baseline Emission Inventory

- Inventory year: 2016
- Number of inhabitants in the inventory year: 222504
- Emission factors:
 - IPCC
 - LCA (Life Cycle Assessment)
- Emission reporting unit:
 - tonnes CO₂
 - tonnes CO₂ equivalent
- Methodological notes

1000 chars left

A. Final energy consumption

Please note that for separating decimals dot (.) is used. No thousand separators are allowed.

Sector	FINAL ENERGY CONSUMPTION [MWh]											Total			
	Electricity	Heat/cold	Natural gas	Liquid gas	Heating oil	Diesel	Gasoline	Lignite	Coal	Other fossil fuels	Plant oil		Biofuel	Other biomass	Solar thermal
BUILDINGS, EQUIPMENT/FACILITIES AND INDUSTRIES															
Municipal buildings, equipment/facilities	1846.34653		4521.418	3.622	19.642				5.152						6386.79883
Tertiary (non-municipal) buildings, equipment/facilities	156313.277		481342.956	15071.4707	755443.2			4043.982083	76207.1316		4650.05132				1493072.11
Residential buildings	12891.053		279138.953	32655.3857	26425.33			11891.03403			14687.635	8365.99488			12891.053
Public lighting	450748.516														450748.516
Industry															
Subtotal	621759.192	0	765003.327	47730.4784	781885.2	55220.88	0	15935.02611	76212.2836	0	19337.6863	8365.99488	0	5540.340052	2407033.41
TRANSPORT															
Municipal fleet															1311.058
Public transport															0
Private and commercial transport															0
Subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1311.058
OTHER															
Agriculture, Forestry, Fisheries	10148.139				4772.022										108011.56
TOTAL	631947.331	0	765003.327	47730.4784	786660.2	159606.2	17.115	0	15935.02611	76212.2836	0	19337.6863	8365.99488	0	2516356.03

Covenant Key Sectors

B. Energy supply

Hide sections or rows as appropriate to your emission inventory.

B1. Municipal purchases of certified green electricity

Municipal purchases of certified green electricity	Renewable electricity purchased [MWh]	CO ₂ / CO ₂ eq. Emission factor [t/MWh]
Certified green electricity purchased		

B2. Local/distributed electricity production (Renewable energy only)

Local renewable electricity plants (ETS and large-scale plants > 20 MWe not recommended)	Renewable electricity produced [MWh]	Emission factor [t/MWh produced]	CO ₂ / CO ₂ eq. emissions [t]
Wind			0
Hydroelectric			0
Photovoltaics			0
Geothermal			0
TOTAL	0		0

B3. Local/distributed electricity production

Local electricity production plants (ETS and large-scale plants > 20 MW not recommended)	Electricity produced [MWh]		Energy carrier input [MWh]						CO ₂ / CO ₂ eq. emissions [t]					
	from renewable sources	from non-renewable sources	Natural gas	Liquid gas	Heating oil	Lignite	Coal	Waste	Plant oil	Other biomass	Other renewable	Other	Fossil sources	Renewable sources
Combined Heat and Power														
Other														
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0

B4. Local heat/cold production

Local heat/cold production plants	Heat/cold produced [MWh]		Energy carrier input [MWh]						CO ₂ / CO ₂ eq. emissions [t]					
	from renewable sources	from non-renewable sources	Natural gas	Liquid gas	Heating oil	Lignite	Coal	Waste	Plant oil	Other biomass	Other renewable	Other	Fossil sources	Renewable sources
Combined Heat and Power														
District heating (heat-only)														
Other														
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0

C. CO₂ emissions

Please insert the CO₂ emission factors adopted [t/MWh]:

[Click here to visualise fuel emission factors](#)

Electricity	Heat/cold		Fossil fuels				Renewable energies								
	National	Local	Natural gas	Liquid gas	Heating oil	Diesel	Gasoline	Lignite	Coal	Other fossil	Biofuel	Plant oil	Other biomass	Solar thermal	Geothermal
0.494	0.494	0.205	0.229	0.257	0.264	0.252	0.340	0.340	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Please complete in case non-energy related sectors are included:

Non-energy related sectors	CO ₂ eq. emissions [t]
Waste management	10620
Waste water management	5117.592
Other non-energy related	

Emission Inventory










Sector	Electricity	Methane	CO ₂ emissions [t] / CO ₂ eq. emissions [t]										Total					
			Natural gas	Liquid gas	Heating Oil	Diesel	Gasoline	Lignite	Coal	Other fossil fuels	Biofuel	Plant oil		Other biomass	Solar thermal	Geothermal		
BUILDINGS, EQUIPMENT/FACILITIES AND INDUSTRIES	912	0	927	1	5	0	0	0	0	0	0	0	2	0	0	0	0	1847
Municipal buildings, equipment/facilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tertiary (non-municipal) buildings, equipment/facilities	77219	0	98675	3451	194149	0	0	0	0	1375	25910	0	0	0	0	0	0	400780
Residential buildings	6368	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6368
Public lighting	222670	0	57223	7478	6791	17218	0	0	4043	0	0	0	0	0	3058	0	0	318482
Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	307169	0	156826	10930	200945	17218	0	0	5418	25912	0	0	0	0	3058	0	0	727476
TRANSPORT	0	0	0	0	0	342	4	0	0	0	0	0	0	0	0	0	0	346
Municipal fleet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Public transport	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Private and commercial transport	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	632380
Agriculture, Forestry, Fisheries	5013	201381	0	0	1226	24576	0	0	0	0	0	0	0	0	0	0	0	232197
Other non-energy related																		
Waste water management																		10820
Other non-energy related																		5118
TOTAL	312182	201381	156826	10930	202172	41794	0	0	5418	25912	0	0	0	3058	0	0	0	1607991

Covenant Key Sectors

Additional comments

Appendix D: Mapping of Actions with UN SDG, CAP23 Chapters and DECA2030 Goals

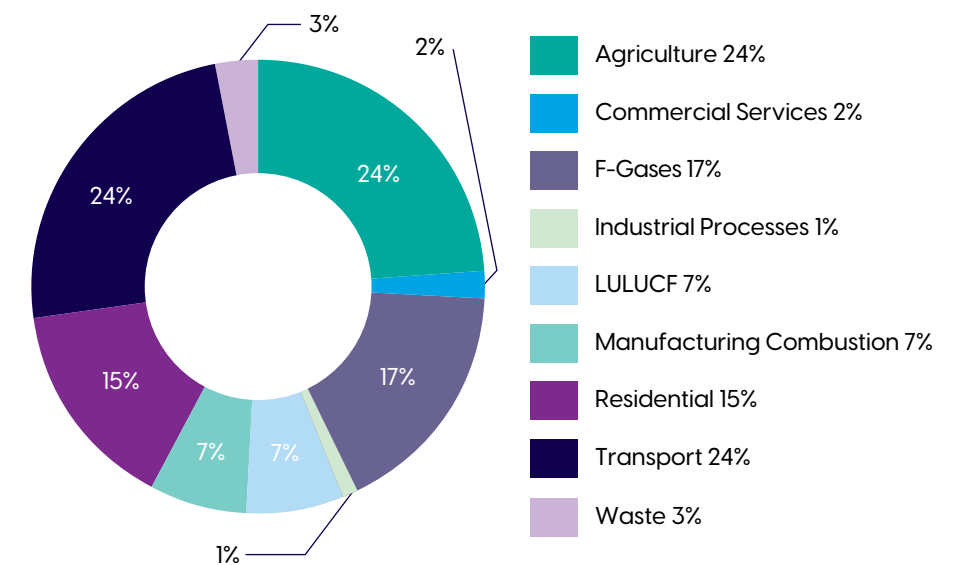
Climate Action Plan Themes					
					
	G2, G4,	B1 B2 B3 B9 B10	N10 N11 N13 N14 N15 N16 N17 N18 N19 N20 N21 N22 N23 N24 N25 N26 N27	R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11 R12 R13 R14 R15 R16 R17 R18 R19 R20 R21 R22 R23	S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 S13 S14 S15 S16 S17
					
	G7, G10, G11	B10, B13, B14, B15, B17, B18, B19, B20, B24, B25	N3, N6, N21, N27	R5, R6	
	G4, G5, G6, G9	B25	N5, N12		
	G10				
	G4, G5, G10	B10,	N3, N6, N7		
	G4, G5, G7, G9, G10	B2, B3, B4, B7, B8, B12, B13, B24		R19	S1, S2, S3, S4, S5, S6, S8, S9, S10
	G1, G2, G4, G5, G7, G9, G10, G11	B2, B3, B5, B6, B10, B12, B14, B15, B16, B17, B19, B20, B21, B22, B24, B25, B26, B27	N21	R21, R22	

	G4, G5, G7, G8, G9, G10	B2, B3, B4, B5, B6, B7, B8, B9, B10, B11, B12, B13, B14, B15, B16, B17, B18, B19, B21, B23, B24, B25, B27	N4, N8, N19, N20, N21, N23, N24	R2, R4, R8, R9, R10, R11, R12, R14, R17, R18, R22, R23	S1, S2, S3, S4, S5, S6, S7, S9, S10, S11, S12, S17
	G4, G10	B1, B3, B9, B14, B16			
	G1, G3, G4, G5, G7, G8, G9, G10, G11	B1, B2, B3, B4, B5, B6, B8, B9, B10, B11, B12, B13, B14, B15, B16, B17, B18, B19, B20, B21, B22, B23, B25, B27	N1, N4, N8, N15, N27	R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R18, R19, R20	S3, S5, S6, S9, S10
	G3, G4, G5, G7, G8, G10	B5, B11, B13, B15, B20, B26	N4, N22, N26	R7, R22	S8, S13, S14, S15, S16
	G1, G3, G4, G5, G7, G10, G11	B2, B3, B5, B6, B8, B9, B11, B12, B13, B14, B16, B17, B18, B19, B20, B21, B22, B23, B25, B26, B27	N1, N2, N4, N5, N7, N8, N12, N13, N14, N15, N16, N17, N18, N19, N20, N21, N22, N23, N24, N25, N27, N28	R1, R2, R3, R4, R5, R15, R16, R17	S1, S2, S3, S9, S11, S12
	G5, G10	B3, B10	N1, N2, N3, N4, N6, N7, N12, N13, N14	R8, R9, R10	
	G5, G10	B3, B6	N1, N2, N3, N4, N5, N7, N9, N11, N12, N13, N14, N15, N16, N17, N18, N19, N21, N22, N25	R5, R7, R14, R15	S7
	G1, G2, G4, G5, G9	B1, B16	N5		
	G1, G4, G5, G7, G8, G9, G11	B6, B12, B16, B18, B20, B21, B22, B23	N5	R1, R19, R20, R21	

Appendix E: MapEire Baseline Data

Climate Action Plan Themes					
					
Foster governance, leadership, and partnerships for climate action	G1, G3, G4, G5, G6, G7, G8, G9, G11	B6, B12, B16, B18, B20, B21, B22, B23	N1, N3, N4, N5,	R19, R20, R21	
Achieve our carbon emissions and energy efficiency targets for 2030 and 2050	G4, G5, G7, G9, G10	B2, B3, B4, B7, B8, B12, B13, B24	N2, N3, N7, N15, N16, N17, N19, N24	R19	S1, S2, S3, S4, S5, S6, S8, S9, S10
Deliver on climate adaptation and climate resilience	G10, G11		N16, N17	R8, R9, R10, R11, R12, R13, R14, R16, R17	
Mobilise climate action in local communities	G2, G4, G6	B22, B23, B25	N6, N12, N27	R1, R3, R5, R6, R7, R22, R23	S3, S13, S14
Mobilise climate action in enterprise and support the transition to an inclusive, net zero and circular economy	G4, G5, G10	B5, B11, B13, B15, B20, B26	N4, N22, N26	R2, R3, R7, R22	S8, S13, S14, S15, S16
Achieve a 'just transition' particularly for communities that may be economically disadvantaged by decarbonising projects	G2, G4	B1, B2, B3, B9, B10	N10, N11, N13, N14, N15, N16, N17, N18, N19, N20, N21, N22, N23, N24, N25, N26, N27	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23	S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, S13, S14, S15, S16, S17

Row Labels	CH ₄ (CO _{2e})	CO ₂ (CO _{2e})	N ₂ O (CO _{2e})	NF ₃ (CO _{2e})	PFCs mix (CO _{2e})	SF ₆ (CO _{2e})	Total (CO _{2e})
Agriculture	236,203	29,599	166,172	-	-	-	431,974
Commercial Services	135	26,224	42	-	-	-	26,401
F-Gases	-	-	-	11,881	31,526	263,376	306,782
Industrial Processes	-	5,930	2,047	-	-	7,478	15,454
LULUCF	8,030	106,704	9,135	-	-	-	123,869
Manufacturing Combustion	443	113,945	729	-	-	-	115,118
Residential	4,321	262,372	670	-	-	-	267,363
Transport	341	428,565	5,690	-	-	-	434,595
Waste	54,038	154	4,697	-	-	-	58,889
Total (CO_{2e})	303,512	973,492	189,181	11,881	31,526	270,853	1,780,444



MapEire CO_{2e} Sectorial Breakdown

Appendix F: Supplementary Details on the Baseline Emissions Inventory

Sector	Data Sources	Methodology
Residential	<ul style="list-style-type: none"> Calculations as per Codema methodology – total private housing stock (housing types) Kildare Geodirectory iHouse database (2018). Average energy use calculated from SEAI BER tool for County Kildare. A combination SEAI 2015/2022 Emissions Factors were used to convert energy usage to carbon footprint. 	<p>Redistribution of 'Not Stated' properties by a weighted average (%)</p> <p>Match dwelling type to building categories from BER Tool</p> <p>Match dwelling type to building regulation periods from BER Tool</p> <p>Calculate average energy use for each dwelling type and period in which built</p> <p>Total residential energy use by fuel and dwelling type</p> <p>Total residential CO₂ emissions.</p>
Commercial	<ul style="list-style-type: none"> Commercial Data received using the API tool from KCC Valuations Office (VO). Benchmarks for commercial properties from CIBSE (Guide F – Energy Efficiency in Buildings 2012) employed. All energy benchmarks are assumed as 'typical practice' unless stated otherwise. National breakdown of fuel mix for commercial and industrial energy use downloaded from SEAI on 25/02/2023 – https://www.seai.ie/data-and-insights/seai-statistics/key-statistics/energy-data/. An average floor area was provided for public houses in the town as this information was protected by confidentiality concerns by the VO. 	<p>Assigning energy benchmarks to commercial buildings from the CIBSE Document</p> <p>Aggregate by Building Category</p> <p>Estimate energy use by fuel type</p> <p>Calculate carbon footprint by using conversion factors</p>
Social Housing	<ul style="list-style-type: none"> Total number of social housing units received from The Councils iHouse database (2018). Dwelling units marked 'Vacant' have been excluded from calculations, as it is assumed that no energy is used. Average energy use per dwelling type uses same data as calculated for Residential category (i.e. from SEAI BER tool). 	<p>Same methodology for Social Housing as it was for the residential sector</p> <p>Redistribution of 'Not Stated' properties by a weighted average (%)</p> <p>Match dwelling type to building categories from BER Tool</p> <p>Match dwelling type to building regulation periods from BER Tool</p> <p>Calculate average energy use for each dwelling type and period in which built</p> <p>Total residential energy use by fuel and dwelling type</p> <p>Total residential CO₂ emissions.</p>
Transport	<ul style="list-style-type: none"> All transport links within the county received from the National Transport Authority (NTA), data specific for Kildare. CO₂ equivalent factors taken from Table 48 of Codema methodology. 	<p>Import the filtered data from the ENEVAL model following request to the TII</p> <p>Isolation of the Greenhouse Gases from the multiple outputs from the model (CO₂/CH₄/N₂O)</p> <p>Total Greenhouse Gas emissions calculated and converted to tonnes</p> <p>Greenhouse Gases in total tonnes is converted to Carbon Dioxide Equivalent (tCO_{2e})</p>

Sector	Data Sources	Methodology
Municipal	<ul style="list-style-type: none"> County Kildare SEAI M&R data - 2018. FOI request sent to SEAI for additional inputs from facilities not covered in the Kildare M&R data. 	<p>Energy usage for 2018 imported from M&R database - Detailed energy data field MPRN electricity consumption was isolated and broken down in order to isolate public lighting from municipal buildings and the electricity total.</p> <p>Energy data was aggregated and SEAI conversion factors were applied to calculate municipal emissions (tCO_{2e})</p>
Agriculture	<ul style="list-style-type: none"> Livestock Units (LU) data was imported from the CSO Census of Agriculture 2020 database. Crop data in hectares was requested and supplied by DAFM through the Land Parcel Identification System (LPIS) database. GHG emissions from livestock (manure management and enteric fermentation) was calculated using emission factors from the IPCC and the National Inventory Report (EPA, 2020). Energy usage CO₂ and methane emissions combined for a final overall agriculture baseline figure. 	
Wastewater	<ul style="list-style-type: none"> As no wastewater treatment plant is currently operational in Maynooth, data from Leixlip WWTP used with a factor applied for population. 	<p>An overall estimate for the county was derived from the data that was received from the Leixlip wastewater treatment plant (WWTP)</p> <p>The application of a per capita emission was used to get the total Wastewater emission for the county.</p>
Waste	<ul style="list-style-type: none"> National Waste Statistics Summary Report (2018) used for Kildare waste streams tonnages. Considers different waste treatment options (recycling, composting, combustion, and landfill) and applies DEFRA conversion factors. 	

Notes

Notes

Notes



Image: Bog Cotton. Source: Midlands National Park Group

Back Cover Image

Source: Lullymore Heritage and Discovery Park.
Photographer: Michael Anderton



Kildare
Climate
Action
Office

Contact Email: climateactionoffice@kildarecoco.ie
#climateactionkildare