NET ZERO CITIES

EU MISSION PLATFORM | CLIMATE NEUTRAL AND SMART CITIES

Climate City Contract

2030 Climate Neutrality Action Plan

2030 Climate Neutrality Action Plan of the City of Dublin

Comhairle Cathrach Bhaile Átha Cliath
Dublin City Council

NetZeroCities has received funding from the H2020 Research and Innovation Programme under the grant agreement n°101036519.

Document history			
Date	**Version**	**Author**	**Changes**
January 2023	V1	ICLEI	/
June 2023	V2	ICLEI	The template was amended to include a front-page note "The Action Plan template is for guidance only. Cities are encouraged to adapt it to their circumstances, while remaining mindful of the CCC Checklist and guidance documents". The description of Table A-1.3 was updated to include the distinction between sectors and actions. The description of Table A-1.5: Graphics and charts was updated to include ", e.g.,sankey diagrams)". The description of Table A-2.3: Emissions gap was updated by eliminating "percentage" in the Baseline emissions heading. Note 1 to Table A-2.3 was edited for clarity. The numbering in the Action Plan Guidance was amended to match the numbering in the Action Plan Template. Page numbers were updated.
November 2023	V2.1	ICLEI	The front-page note was amended to include the following text "The Action Plan template is for guidance only. Cities are encouraged to adapt it to their circumstances and are welcome to incorporate pre-existing documents that may already address their climate neutrality target (e.g., SECAP) to avoid a duplication of effort. Cities should refer to the CCC Checklist and CCC Action Plan guidance document to identify the essential information to be included in their submission". Each module was amended to open with a summary of expected information. Guiding questions were included for each template field (to be replaced with writer´s text). Footnotes were introduced throughout the template to provide definitions for uncommon terms and references to additional (external) guidance. The Introduction was amended to require the administrative territory/ies included in the city´s 2030 climate neutrality target and excluded districts or emission sources, key data on the administrative and political organisation of the city, its demographic and socio-economic characteristics, and climate-relevant sectors, and a description of the work process of developing the city's Action Plan Guidance. Module A-1 "Greenhouse Gas Emissions Baseline

			Inventory" was amended to require references to the boundary of the 2030 climate neutrality target, excluded sectors, sources, scopes, and plans for addressing them. Module A-1 "Greenhouse Gas Emissions Baseline Inventory" was edited to emphasize that the template should not prevail over keeping internal consistency, accuracy, and clarity of the emissions data intact. A note was added encouraging cities to submit the inventory that corresponds to the calculations in the plan together with the plan (including. available documentation on methodology and approaches). The order of the tables in Module A-1 "Greenhouse Gas Emissions Baseline Inventory" was changed to improve the flow of the information. Table A-1.3 "Emissions factors applied" was edited to include a line with the indication "Please mark all gases accounted for in the inventory". Table A-2.1 "List of relevant policies, strategies & regulations" and A2.2 "Description & assessment of policies" were replaced by text boxes to avoid redundancy. Table A-2.3 "Emissions Gap" was relabelled A-2.1 and edited to propose a simplified approach to calculating the emissions gap and residual emissions. Module A-3 "Systemic Barriers and Opportunities to 2030 Climate Neutrality was edited to include references to the evaluation of unexploited resources (e.g., renewable energy sources, digital technologies, etc). The terms referring to stakeholders, actors, citizens were streamlined and clarified. Table A-3.3: "Description or visualisation of participatory model for the city climate neutrality – textual and visual elements" – was eliminated for redundancy and its content is merged with C-1.1: "Description or visualisation of the participatory governance model for climate neutrality". Table A-3.3: "Description or visualisation of participatory model for the city climate neutrality – textual and visual elements" – was eliminated for redundancy and its content is merged with C-1.1: "Description or visualisation of the participatory governance model for climate neutrality". Description for Module B-2 was expanded to specify "The actions described here **should not repeat** the actions resulted from existing policies, and plans, outlined in Section A-2.1. Those actions are, by definition, not part of the proposed action portfolio".

			Description for B-2.3 "Summary strategy for residual emissions" was expanded to specify "Detail how residual emission will be compensated, if applicable. Include the expected breakdown of natural sinks, permanent sequestration, and offsets". Module C-1 “Organisational and Governance Innovation Intervention" was renamed “Module C-1 Governance Innovation Interventions” and edited to include additional guidance. Module C-2 “Social Innovation Interventions” was edited for clarity and concision and to include additional guidance. Module C-3 “Financing of Action Portfolio” was eliminated for redundancy.

The Action Plan template is for guidance only. Cities are encouraged to adapt it to their circumstances and are welcome to incorporate pre-existing documents that may already address their climate neutrality target (e.g., SECAP) to avoid a duplication of effort. Cities should refer to the CCC Checklist and CCC Action Plan guidance document to identify the essential information to be included in their submission.

Table of Contents

Summary

An abstract **summarizes the content** of the 2030 Climate Neutrality Action Plan (CCC Action Plan) that is developed jointly by local authorities, local businesses, and other stakeholders.

Textual element

Dublin is the capital city of the Republic of Ireland and is located on the east coast of the country. Once home to Vikings, the city has grown around the flood plains of the River Liffey and is now a home to 592,713 Dubliners (Census, 2022). Spread over its 117 km2 are markers of a rich history and culture that have been shaping the city's identity for over a millennium.

The city is characterised by its medieval core around which stunning Georgian neighbourhoods with public squares providing a space for social and economic activities grew. These spaces continue to thrive and provide Dubliners with spots to relax and enjoy a bit of nature in the city; many make up Dublin's network of parks. The Grand Canal and Royal Canal that envelop the inner city were once full of canal boats moving goods to and from the port to the city and to the rest of country. Today, you will still see boats, but you will also see citizens cycling next to the canals on segregated paths or simply lingering and enjoying a moment.

Dublin has a rich natural endowment, which has throughout its existence provided citizens of the city with opportunities to innovate and make Dublin the city it is today. A city that is leading in innovation, is thriving with culture, and is diverse. Moreover, in its 1000-year history, Dublin has defined itself as a city that is resilient; having experienced battles and struggles and in history that is more recent the impacts of the Great Recession, Dublin and its citizens always emerge stronger and more unified. Dublin brings out the best in its people, who make the city unique and give it its spirit.

As the city council responsible for the city, Dublin City Council develops and implements key statutory and non-statutory plans that shape life in the city. Dublin City Council's Corporate Plan puts forward our vision and mission for both the city, and Dublin City Council, as an organisation and the principles by which we will be guided in all elements of our work on climate action. Our vision and mission in the Corporate Plan for 2020-2024 are:

Our Vision: A dynamic, sustainable city, that is future-ready, built on thriving, inclusive neighbourhoods and communities, a strong economy, a vibrant cultural life, and compact, connected growth.
Our Mission: To drive the sustainable development of the City through strong civic leadership and delivery of effective services that promote the well-being and quality-of-life of citizens and communities.

Beyond the Corporate Plan, DCC has several other plans that are shaping the low carbon climate resilient future of the city, these are:

- Climate Action Plan 2024-2029 – Climate Neutral Dublin 2030: (Which was developed to meet our National Climate Objectives while serving as the first iteration of our Climate Neutrality Action Plan (CNAP) for the Climate City Contract as part of the Mission)
- Dublin City Development Plan 2022-2028
- Dublin City Local Economic & Community Plan 2023-2025 Forthcoming

Climate Neutral Dublin 2030 has three targets that are interdependent:

- A 51% reduction in greenhouse gas emissions in line with our National Climate Objective by

2030, and and neutrality by 2050. We will achieve and exceed this using our participation in the the EU Mission for 100 Climate Neutral and Smart Cities (Net Zero Cities) to accelerate this transition through collaborative partnerships and use systems innovation to realise opportunities, efficiencies and critically, co-benefits that improve health and well-being. Dublin City will achieve neutrality by 2030. (This means reducing anthropogenic emissions by 80% by 2030 through reducing consumption of fossil fuels and increasing sinks of carbon via green and blue spaces.)

- A Climate Resilient City prepared for the known and unknown impacts of climate change.
- A Just Transition meaning that the actions we take do not cause harm.

Beyond these targets recognising that climate change is the single biggest threat to health and well-being, we anticipate that our plan will realise co-benefits that we will monitor and capture namely we will see improvements in:

- Air Quality (currently measured through Dublin City Air and Noise)
- Water Quality (measured by various stakeholders)
- Soil Health (not currently available)
- Biodiversity (Flora and Fauna) (currently not consistently monitored)
- Noise Levels (currently measured through Dublin City Air and Noise)
- Population Health and Well-being (data is at the National level, and work is needed to understand local data)
- Social Cohesion (survey – Your Dublin, Your Voice)
- Economic indicators (quarterly – Dublin Economic Monitor)
- Traffic volumes (monitored daily via Traffic Asset Management System)
- Temperature comparisons across the city to better assess the urban heat island effect
- Measuring ground level Ozone
- Aero allergens
- Monitoring of disease vectors – mosquitos, flies, ticks, and invasive species.

We need to improve our data collection and capacity for analysis. This will require data harmonisation and collaboration. We have experience in collaborating on data collection. For example, some monitoring of key species undertaken by NGO's and ecologists on behalf of the LA's, Dublin Port, and NPWS - to create and maintain a comprehensive inventory of species and habitats in Ireland; to undertake scientific surveys and research, and compile monitoring data, to assist in the provision of specialist advice in relation to public policy, designations, and the protection and management of wildlife habitats and species. Also, voluntary reporting via the Biodiversity Data Centre which has a database and maps for most/all native species. This is strong demonstration of how partnerships with public sector, academia and communities can deliver

Ultimately, for DCC participation in the Mission is an opportunity to improve quality of life for all people who live, work, study and visit the city. We know that this is achieved by engaging deeply with citizens, businesses, the private and public sector, and understanding how by working together we can improve the lives of all as parents, business owners etc. Importantly, as we are part of the EU Mission for 100 Climate Neutral and Smart Cities, this action plan will evolve as we work with citizens, businesses and academia to exchange knowledge and ideas to develop innovative solutions to increase our city, our home's resilience.

List of figures

The list of figures **identifies the titles and locations** (page numbers) of **all visual elements:** figures, drawings, photos, maps, etc. used in the CCC Action Plan.

List of tables

The list of tables **identifies the titles and locations** (page numbers) of **all tables** used in the CCC Action Plan.

Abbreviations and acronyms

The list of abbreviations and acronyms **identifies the abbreviations** (a shortened form of a word used in place of the full word) **and acronyms** (a word formed from the first letters of each of the words in a phrase of name) used in the CCC Action Plan.

Abbreviations and acronyms	Definition
AFOLU	Agriculture, Forestry and Other Land Use
BER	Building Energy Rating
CAP	Climate Action Plan
CCAP	Community Climate Action Programme and Cities Climate Action Plan
CCC	Climate City Contract
CIE	Córas Iompair Éireann
CoM	Covenant of Mayors
CPD	Continuing Professional Development
CRU	Commission for Regulation of Utilities
CSO	Central Statistics Office
DBUB	Dublin Bay UNESCO Biosphere
DCC	Dublin City Council
DDHS	Dublin District Heating System
DoH	Department of Health
DTCAGSM	Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media
DWtE	Dublin Waste to Energy
EMWR	Eastern-Midlands Waste Region
EPA	Environment Protection Agency
ESB	Electricity Supply Board
EU	European Union
EOI	Expression of Interest
EV	Electric Vehicle
FAI	Football Association Ireland
FDI	Foreign Direct Investment
GHG	Greenhouse Gases
GNI	Gas Networks Ireland
HSE	Health Service Executive
ICE	Internal Combustion Engine
IPCC	Intergovernmental Panel on Climate Change

IPPU	Industrial Processes and Product Use
IGBC	Irish Green Building Council
LA's	Local Authorities
LAWPRO	Local Authorities Water programme
LECP	Local Economic and Community Plan
LEO	Local Enterprise Office
LEW	Local Enterprise Week
MODOS	Circular Economy Training Programme
NEIC	North East Inner City
LED	Light Emitting Diode
LULUCF	Land Use, Land Use Change and Forestry
NBS	National Bureau of Standards
NGO's	Non-Governmental Organisations
NPF	National Planning Framework
NPWS	National Parks and Wildlife Service
NTA	National Transport Authority
NZEB	Nearly Zero Energy Buildings
OECD	Organisation for Economic Cooperation and Development
OPW	Office of Public Works
PE	Primary Energy
PV	Photovoltaic
RIA	Royal Irish Academy
RSES	Regional Spatial Economic Strategy
SDCC	South Dublin County Council
SFI	Science Foundation Ireland
SDRA	Strategic Development and Regeneration Areas
SEAI	Sustainable Energy Authority Ireland
SECAP	Sustainable Energy Climate Action Plan
SME's	Small and Medium Enterprises
TFC	Total Final Consumption
TII	Transport Infrastructure Ireland
TPER	Total Primary Energy Requirements
TUD	Technology University Dublin
UNESCO	United Nations Education, Scientific and Cultural Organisation
UNWTO	United Nations World Tourism Organisation
URDF	Urban Regeneration and Development Fund
WERLA	Waste Enforcement Regional Lead Authority
WFD	Water Framework Directive
ZEVI	Zero Emissions Vehicles Ireland

1 Introduction

The introduction outlines the local geographic and policy context in which the city´s 2030 Climate Neutrality Action Plan is being developed and describes the gap it addresses in broad terms. It includes:

- The administrative territories included in the city´s 2030 climate neutrality target. Where applicable, any districts or emission sources within these administrative boundaries that are excluded from the target of climate neutrality by 2030[1]. Table I-1.1 summarizes this narrative in a snapshot.
- Key data on the administrative and political organisation of the city, its demographic and socio-economic characteristics, and climate-relevant sectors.
- A clear description of the relationship of this CCC Action Plan with existing climate policies and strategies (further detailed in Module A-2), and how it builds on them to address the gap (if any) to climate neutrality.
- Background information on the work process of developing the city's CCC Action Plan, highlighting its connection with the other Climate City Contract components (2030 Climate Neutrality Commitments and 2030 Climate Neutrality Investment Plan).
- A description of future steps, planned timeline and milestones for future iterations for the continuous development of the CCC Action Plan.

Introduction

[1] By default, the participating city would commit the whole city or entity to become climate-neutral. However, where duly justified, the city may propose to exclude one or more district(s) or sources of emissions from the 2030 deadline, but in this case should commit to a strategy of climate neutrality for these districts as soon as possible, and of course no later than 2050. In this context, districts will be considered as neighbourhoods or zones of special interest of a city administered or governed by some type of "district council".

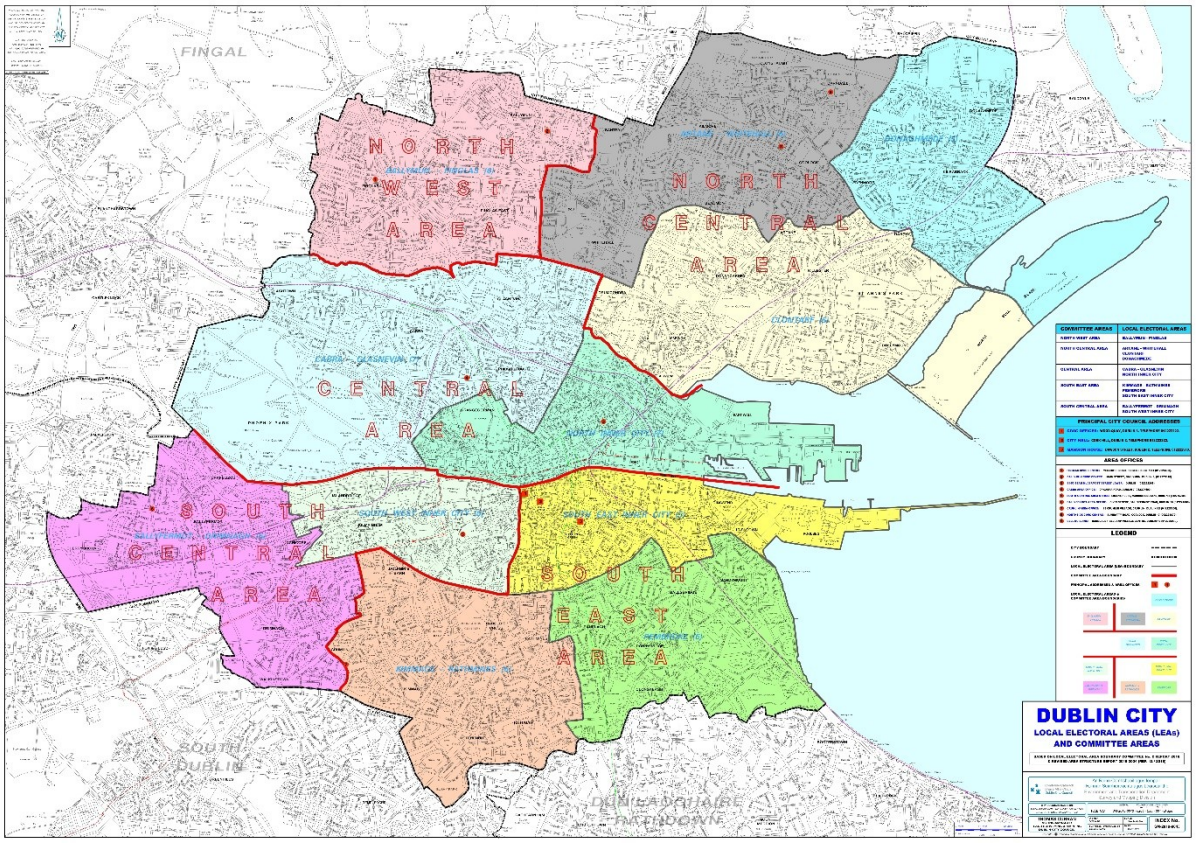

Figure 1 Administrative Area of Dublin City

Dublin is the capital city of the Republic of Ireland and is located on the east coast of the country. Once home to Vikings, the city has grown around the flood plains of the river Liffey and is now a home to 592,713 Dubliners. Spread over its 117 km2 are markers of a rich history and culture that have been shaping the city's identity for over a millennium.

The city is characterised by its medieval core around which stunning Georgian neighbourhoods with public squares providing a space for social and economic activities grew. These spaces continue to thrive and provide Dubliners with spots to relax and enjoy a bit of nature in the city; many make up Dublin's network of parks. The Grand Canal and Royal Canal that envelop the inner city were once full of canal boats moving goods to and from the port to the city and to the rest of country. Today, you will still see boats, but you will also see citizens cycling next to the canals on segregated paths or simply lingering and enjoying a moment.

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neighbourhoods and communities, a strong economy, a vibrant cultural life, and compact, connected growth.

Our Mission: To drive the sustainable development of the City through strong civic leadership and delivery of effective services that promote the well-being and quality-of-life of citizens and communities.

As the new Corporate Plan is being developed a revised vision (Figure 2) and mission are being agreed by the elected representatives and the executive.

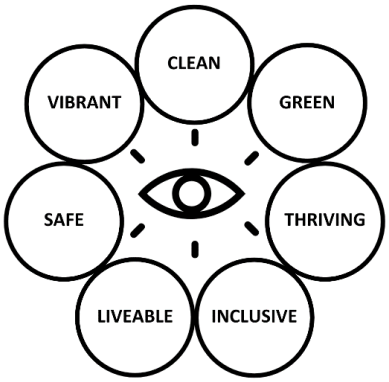

Figure 2 Vision for City 2025-2029

Beyond the Corporate Plan, DCC has several other plans that are shaping the low carbon climate resilient future of the city, these are:

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To support the delivery of these plans DCC has nurtured several programmes. Specifically, DCC has an award-winning Smart City Programme. Initiated in 2015 to experiment with new concepts and ideas, today Smart Dublin is facilitating over 100 live projects. Using the Quadruple Helix model, Smart Dublin has brought together citizens, government, academia and industry to facilitate the growth of our innovation ecosystem. We have developed new 'Smart Districts' across Dublin that facilitate experimentation as living labs. New processes have been developed and championed to help foster and scale up innovation in our business community, for example our Small Business Innovation Research Programme. We have worked with our local research community to identify cutting-edge solutions that respond to urban challenges – air quality (iScape), active travel (Dublin Cycling Buddy) and improve our service delivery (SBIR Gully Monitoring). Climate action is central to our smart cities' initiatives, and we are actively building our data sets to inform how we take action.

Our Commitment for Climate Neutral Dublin 2030 ;

As with our Expression of Interest (EOI) to join the Mission our targets are focused on the administrative boundary of Dublin City Council. In the EU NUTS system Dublin is considered to include our neighbouring local authorities of Fingal County Council, Dun Laoghaire-Rathdown County Council and South Dublin County Council, it is anticipated that as the four Dublin Local Authorities work together through the Dublin Metropolitan Region Climate Action Regional Office (CARO), that the territory will expand. Notably our neighbour local authorities face the same challenges, yet are

determined to lead and achieve neutrality, well in advance of our national targets.

The administrative area of the city includes Dublin Port, with whom we work to deliver the Dublin Bay Biopshere Programme

Being part of a community of 112 Cities determined to lead in the journey to climate neutrality, to achieve neutrality in manner that does no harm compliments and strengthens our vision and mission. The Mission provides a unifying narrative to bring stakeholders out of their silos to create systems change.

We achieved change with our first plan. We understood that we needed to build bridges between our silos; necessary and essential to achieving neutrality. Now we need to make sure that we use the bridges every day, and build new ones to create as many opportunities as possible for connections to be made that allow us to exchange knowledge, ideas and to build skills and capacity.

The Mission will enable this through the Climate City Contract process which will be key to bringing harmonisation to the of statutory and non-statutory plans, programmes and projects that shape the City by providing a shared narrative for co-creation and collaboration with citizens, academia, business and national government to achieve climate neutrality, and more importantly improving life for people.

The EU Mission for Dublin City Council and the city is an opportunity to accelerate our ambition and transition to neutrality; critically ensuring we achieve our vision for the city (Figure 2), which is emerging with the development of our forthcoming Corporate Plan 2024-2029

Climate Policy Context

Ireland's success in contributing to Europe's climate objectives, as per the EU Green Deal is intimately interconnected with the success of its major cities - Dublin City and Cork City. Since the adoption of the Low Carbon Development and Climate Action Act in 2015 and its amendment in 2021 Ireland has produced four National Climate Action Plans, a National Adaptation Framework, 12 sectoral adaptation plans at the National level, 31 local authority climate change adaptation plans (now being revised to local authority climate action plans) and most recently Ireland's Long-term Climate Strategy – National Energy and Climate Plan (NECP), the National Planning Framework and National Development Plan - Project Ireland 2040 have sought to address sustainable land-use by requiring city and county development plans to consider how planning addresses climate change. Despite the volume of plans and actions, progress has been limited and Ireland as, a whole is off course.

Reviews of Ireland's progress on climate action by the Climate Change Advisory Council and academic researchers point to the need for systems change, as the current siloed approach is non-functional. Additionally, there has been a greater call for local authorities to play a significant role in Ireland's transition to a low carbon future. This is welcomed, however, the increased role for local authorities does not come with consideration for the knowledge and expertise that exists within each local authority that enables the delivery of programmes and projects that contribute to improved quality of life in Ireland's cities, towns, and villages and how this expertise can inform the journey to climate neutrality from the local to the national level. Specifically, the need for systems innovation that is enabled and empowered by collaboration achieved through adaptive governance.

We acknowledge that multilevel governance is viewed by the EU Commission as being critical to climate neutrality. Ireland currently employs a multi-level governance approach, with clearly delineated roles for various levels of government, and agencies, which has contributed to non-functional silos. Adaptive governance provides calls for the level of government, in this instance the city, to lead due to their knowledge and expertise, moving away from a hierarchy and non-functional silos. As such our approach is advocating for this shift in governance to enable delivery, and achieve the systems change and innovation necessary to building policy coherence to unlock the path to climate neutrality.

Greenhouse Gas Baseline

The overall emissions for the Dublin City Council area have been calculated for the baseline year of 2018 and are estimated to be **2,042,365.621 tonnes of Carbon Dioxide equivalent** (tCO_2e). (It is acknowledged that when converted to a per capita number this is below the per capita average at the national level, this highlights the need for an improved methodology). Of this 32% is commercial, 27% is residential, and 25% is transport. The baseline methodology was developed by the City's energy agency, Codema and details on the methodology are available here.

Our 2018 emissions baseline is provided in Appendix 3 of Climate Neutral Dublin 2030. We acknowledge that it is a starting point and we are taking action to address its completeness. A critical public service is ensuring that citizens are provided with accurate information and evidence, this is essential to building trust and relationships that are the backbone of collaboration and co-creation, necessary for climate action.

Our climate action plan – Climate Neutral Dublin 2030 is actively addressing the emission from these key sectors. Critically we are actively increasing vegetation in the city to sequester emissions and improve air quality, water quality, and noise levels. The recent State of Carbon Dioxide Removal (CDR) Report 2024, highlights the necessity and value of conventional CDR, specifically the role of land use in durable carbon dioxide removals.

The sequestration potential of our greening strategies is absent from our baseline inventory, and since 2018 we have been increasing green cover in the city and are aiming to increase this by more than 12 sq, adding to our existing 20 sq km. At present we also have 60,000 street trees and are aiming to plant 40,000 more. This also does not account for planting on private property which has increased and we are encouraging to reduce flood risk and urban heat island impacts.

Acknowledging the assumptions held in the current methodology applied for the baseline, DCC is moving towards projects using whole life carbon assessments (embodied and operational). Additionally, to overcome a longstanding issue related to project funding – value for money – projects will also be considering carbon avoided as part of their assessments. Recent publications by the Society of Chartered Surveyors of Ireland on the Real Cost of Retrofit and construction costs of new builds, shows that accounting for the carbon impacts and other co-benefits provides an additional rationale; as the costs of retrofit and new builds are almost at par on a per square meter basis. This will be discussed further in the IP.

Targets to 2030 and beyond

Ireland is off target even though there was a decrease in emissions of 1.9% in 2022 (EPA, 2023). In 2022, Ireland's GHG emissions were estimated to be 60.76 Mt CO2eq million tonnes carbon dioxide equivalent (Mt CO2eq). While the reduction is welcome, the latest report indicates that Ireland will not meet the National Climate Objective of 51% by 2030 (EPA, 2023). This is likely attributable to the siloed approach deployed to date, that has led to a focus on who is responsible for what, rather than an understanding of the interdependencies and interconnectedness of emissions.

Total Greenhouse Gas Emissions (including LULUCF) under the *With Existing Measures* and *With Additional Measures* scenarios out to the year 2030

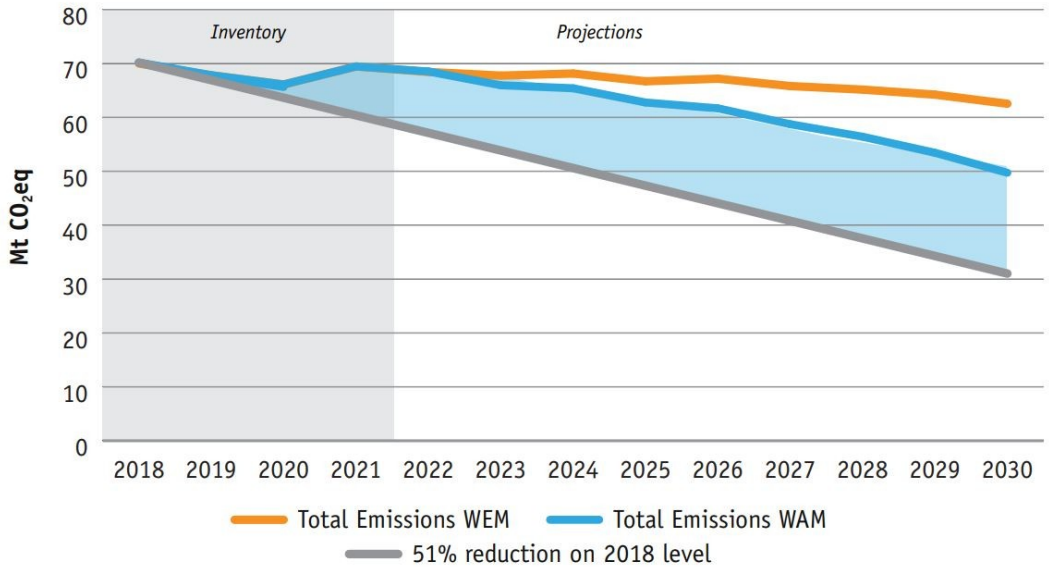

Figure 3 Ireland's Emissions (Source EPA)

We know we have to do our bit for all sectors – Built Environment, Transport, Electricity, Industry, and Agriculture, and Land Use, Land Use Change and Forestry, (LULUCF sector is made up of six land use categories (Forest Land, Cropland, Grassland, Wetlands, Settlements, and Other Land) and Harvested Wood Products), We now have an Amended Act that requires us to meet new targets - 51% by 2030 compared to 2018 and Neutrality by 2050. While there are sectoral ceilings there is no target for the public sector as was the case in 2020. It is as a whole. In other words, our plan must enable all sectors to reduce emissions. Emissions from one sector are inextricably linked to another - Farmers need roads to bring food to the businesses that occupy buildings, which use energy transmitted and distributed by utilities under the roads, to cook the food that feeds you.

We know that as climate science advances and the understanding of the impacts of human activity on the planet deepens, targets will shift. Already the IPCC (2023) has stated we need to accelerate action to limit warming to 1.5 degrees.

While 592,713 people live in the city, our daytime population is 1.5 times this (CSO, 2022). The emissions from their commute, the goods and services they consume, and their activities cannot be spatially constrained. Like people, emissions do not stop at county borders.

Similarly, the impacts of climate change such as flooding, storms, heat waves, and drought are not limited by geography. In 2023, the need to act has never been more evident both globally and locally. From record breaking rainfall in July for Ireland that resulted in multiple flood events across Dublin, to wildfires engulfing Canada and Southern Europe, our climate has and is changing, yet we can still act. DCC will lead by decarbonising our building stock and changing the way we work, to demonstrate what is possible and needed for a climate resilient city, prepared for a future with climate change.

Our first climate change action plan covered the years 2019 to 2024. In the lifetime of our first plan, we met and exceeded our emissions and energy efficiency targets for 2020. In 2021, it is estimated that DCC consumed over **161 GWh** of Total Primary Energy, emitted over **30,500 tonnes of CO_2** at an estimated cost of **€11.4 million.** While this is positive, a large proportion of the reduction is attributable to the increasing percentage of renewables on the national grid. An ongoing challenge is the thermal element, which has only recorded a marginal reduction in the same period

We aim to build on our first plan's successes and learnings. As with the first, this plan is a living document that will respond to the science (IPCC) and to changes in National and EU policy. The EU Mission for Dublin City Council and the city's is an opportunity to accelerate our ambition and transition to neutrality

This plan covers the period 2024 to 2029. In this time, we will reduce our emissions by over 51% (80%) from the 2018 baseline ahead of the 2030 target and make Dublin City resilient without causing harm. We will use our status as an EU Mission City to accelerate our ambition and transition to climate neutrality (80% reduction) by 2030. An ambitious goal that together with Cork City and over 100 cities across Europe we will work towards, by engaging our citizens and other stakeholders. As will be highlighted in the next section and in the action plan we are building capacity to link actions to net zero target. For us, a strategic priority is building our capacity for data collection, management and analysis, and using data as an opportunity for collaborative partnerships.

Our plan has three targets that are interdependent:

- A 51% reduction in greenhouse gas emissions in line with our National Climate Objective by 2030, and neutrality by 2050. We will achieve and exceed this using our participation in the EU Mission for 100 Climate Neutral and Smart Cities (Net Zero Cities) to accelerate this transition through collaborative partnerships and use systems innovation to realise opportunities, efficiencies and critically, co-benefits. Dublin City will achieve neutrality by 2030. (This means reducing anthropogenic emissions by 80% by 2030 through reducing consumption of fossil fuels and increasing sinks of carbon via green and blue spaces.)
- A Climate Resilient City prepared for the known and unknown impacts of climate change
- A Just Transition meaning that the actions we take do not cause harm.

The plan was developed to meet both the National Climate Objective and the EU Mission targets. Beyond these targets recognising that climate change is the single biggest threat to health and well-being, we anticipate that our plan will realise co-benefits that we will monitor and capture namely we will see improvements in:

- Air Quality (currently measured through Dublin City Air and Noise)
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- Temperature comparisons across the city to better assess the urban heat island effect
- Measuring ground level Ozone
- Aero allergens
- Monitoring of disease vectors – mosquitos, flies, ticks, and invasive species.

Challenge into an Opportunity

We need to improve our data collection and capacity for analysis. This will require data harmonisation and collaboration. We have experience in collaborating on data collection. For example, some monitoring of key species undertaken by NGO's and ecologists on behalf of the LA's, Dublin Port, and NPWS - to create and maintain a comprehensive inventory of species and habitats in Ireland; to undertake scientific surveys and research, and compile monitoring data, to assist in the provision of specialist advice in relation to public policy, designations, and the protection and management of wildlife habitats and species. Also, voluntary reporting via the Biodiversity Data Centre which has a

database and maps for most/all native species. This is strong demonstration of how partnerships with public sector, academia and communities can deliver.

Changing Engagement: More than a Formality.

Ultimately, for DCC, participation in the Mission is an opportunity to improve quality of life for all people who live, work, study and visit the city. We know that this is achieved by engaging deeply with citizens, businesses, the private and public sector, and understanding how by working together we can improve the lives of all as parents, business owners etc

While we must engage in formal processes that are set out in legislation for public consultation, as detailed and demonstrated here, with our most recent city development plan:

> *The plan included pre-draft consultation with the elected members, the general public, key stakeholders, infrastructure providers, sectoral groups, statutory agencies and adjoining local authorities. The pre-draft public consultation extended over a ten-week period with the launch of an issues paper in February 2021.*
>
> *The consultation strategy included a number of public information events including five online webinars to encourage as much public engagement as possible. There was also active use of social media including an information video. Over 750 written submissions, together with the opinions and comments arising from the public consultation webinars, were taken into account when formulating the draft development plan. The number of submissions and contributions reflects a high level of interest in the future of the city.*
>
> *In considering the views expressed by the public at the pre-draft stage, the elected representatives proposed over 1,000 strategic directions to include in the draft development plan. Following consideration of the draft development plan prepared by the Chief Executive, the elected members proposed further motions for amendments to the draft plan. All changes agreed by the City Council were incorporated into the draft plan which went on public display from 25th November 2021 for a period of 12 weeks.*
>
> *Over 4,300 submissions/observations were received in response to this stage of the public consultation process and the Members, having considered the views expressed by the public proposed over 500 motions giving direction to the Chief Executive regarding strategic and policy issues to amend in the Draft Development Plan. The Members resolved to amend the Draft Plan at Special Council Meetings in July 2022 following consideration of the Chief Executive's Report on submissions received and the Chief Executive's Report on motions received. As these amendments constituted a material alteration to the Draft Dublin City Development Plan, the Council resolved to place the proposed material alterations on statutory public display for a period of five weeks from the 27th of July 2022.*
>
> *In addition to the public display which took place in locations throughout the city including all public libraries and area offices, all public documents were placed on the website specially designed for consultation on the Draft Plan – www.dublincitydevelopmentplan.ie and the City Council's dedicated social media sites were used to publicise the material alteration display period. Over 1,000 submissions/observations were received on the proposed material amendments and 120 motions were received from Councillors. The Members of Dublin City Council then considered the material amendments to the Draft City Development Plan 2022-2028 and the Chief Executive's Report on submissions received and the Chief Executive's Report on motions received at Special Council Meetings held on 1st and 2nd of November 2022 and resolved to adopt the Draft Plan.*
>
> *The adoption of the plan is a reserved function of the elected members under the*

Planning and Development Act 2000 (as amended). The adopted Dublin City Development Plan 2022 - 2028 takes effect from 14th December 2022.

We know that people are busy and may not have the time to participate in a statutory process, as such we need to engage in novel ways that will encourage participation in formal consultation, but also identify how we might improve statutory processes, as society is changing and we need to evolve in how we engage, and this begins with implementation.

Towards the Implementation of a Transformative Climate Action Plan

Dublin City's participation in the EU Mission is an opportunity to unlock the barriers to systems transformation needed to achieve neutrality.

To support our participation in the EU Mission our statutory local Climate Action Plans – was developed to respond to the bold objectives of the EU Mission. From our experience with our first CAP we have learned that successful implementation of our climate action plan cannot be achieved without systems change.

More critically, that the "change as usual" approach is not sufficient, we need whole systems change. To achieve systems change we need to fully understand the systems that shape our cities and the factors that allow the current systems to persist, such as behaviour, siloed working, incoherent policies, lack of resources (time and finance) and fear. Then to take that knowledge and understanding to develop new solutions that are rooted in interdisciplinary collaboration. We know that this process will not be simple, we still have a city to run, to maintain, that requires functioning roads, waste collection systems, and other services. We cannot shut down; therefore, transformation must be an active and deliberate process, using planned initiatives as catalysts for transformation.

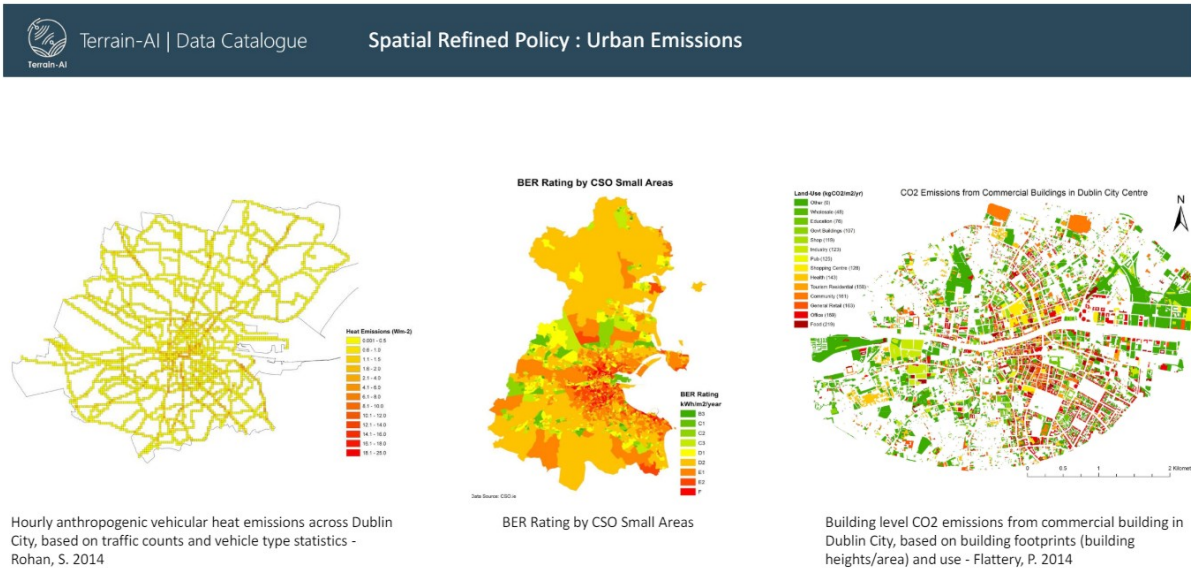
In recent years, it has become clear that siloed work is unfit for purpose. Triggering systems change requires, instead, an interdisciplinary and collaborative approach. While DCC staff in charge of the Plan see climate action as an opportunity for more interdisciplinary and proactive ways of working, DCC staff identified several challenges to embracing such an approach. These include:

- Climate action is recognized as a responsibility of the City Council, however, greater clarity is needed on how to weave in to day-to-day tasks and responsibilities.
- Staff are pre-occupied with 'firefighting' and with the public acceptance of transformative policies, they feel time is poor, and feel overwhelmed by the magnitude of the changes that the net-zero transition entails.
- Day-to-day work practices and organization may hinder the staff's capacity to contribute to the Plan as needed, e.g. very specific key performance indicators leading to a narrow focus and trade-offs between teams' efforts.

The OECD will contribute to enable and build the capacity of DCC to embrace a challenge-led and systemic approach to the CAP implementation, as part of the organisations' efforts to support Governments across the OECD in their transition towards net-zero.

Building our capacity in this space will play an essential role in future iterations of the CCC which are anticipated to be revised fully every two years, enabling us to co–create with external stakeholders solutions to the challenges we identify together.

Table I- I Climate Neutrality Target by 2030			
Sectors	Scope 1	Scope 2	Scope 3
Stationary energy	Included	Included	Optional information
Transport	Included	Included	Optional information
Waste/wastewater	Included	Not applicable	Included/excluded/to be defined
IPPU	Not Applicable	Included	Optional information
AFOLU	To be defined in future iterations, city is 17% green space and this has increased since 2018 with new parks, bio swales, street trees, North Bull Island National Nature Reserve. Further there is work ongoing to understand sea grass extent and identify opportunities to strengthen blue carbon capture.	Not applicable	Optional information
Geographical boundary	Same as city administrative boundary	Smaller than city administrative boundary	Smaller than city administrative boundary
(Tick correct option)	X		
Specify excluded/additional areas	Not applicable	Required information	Required information
Map			



Hourly anthropogenic vehicular heat emissions across Dublin City, based on traffic counts and vehicle type statistics - Rohan, S. 2014

BER Rating by CSO Small Areas

Building level CO2 emissions from commercial building in Dublin City, based on building footprints (building heights/area) and use - Flattery, P. 2014

Accounting based procedures to calculate anthropogenic heat and CO2 emissions across urban locations

Figure 4 Data Visualisation in 2014 (Source: Mills, Terrain AI, 2024)

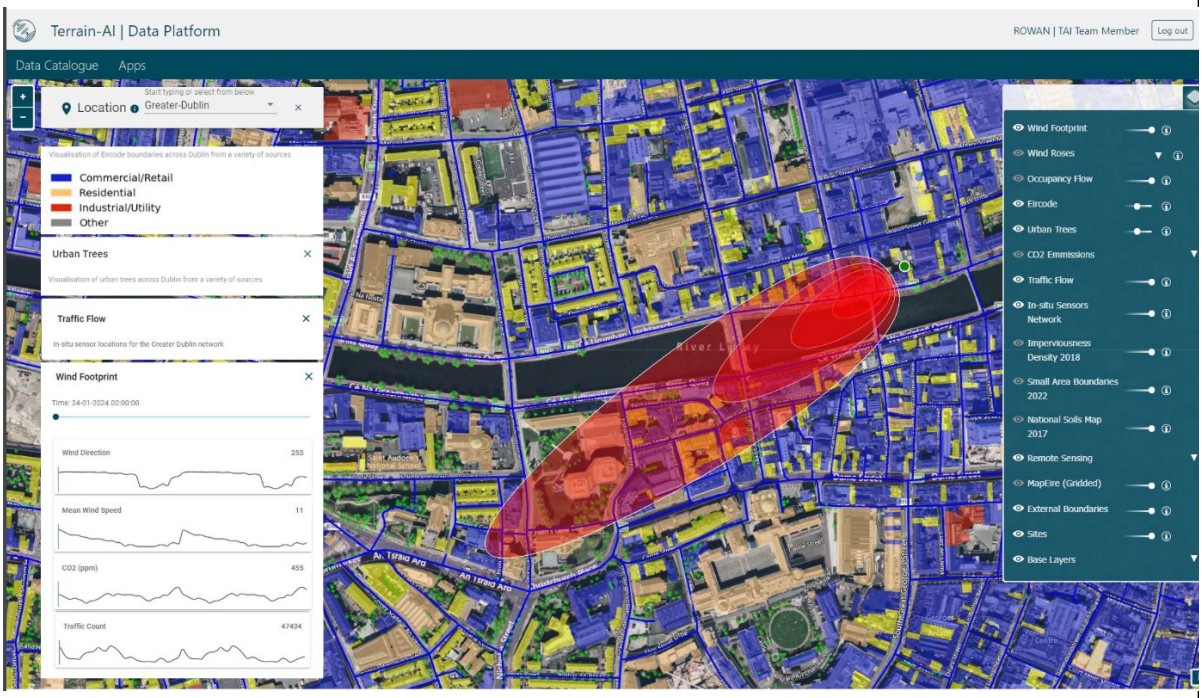
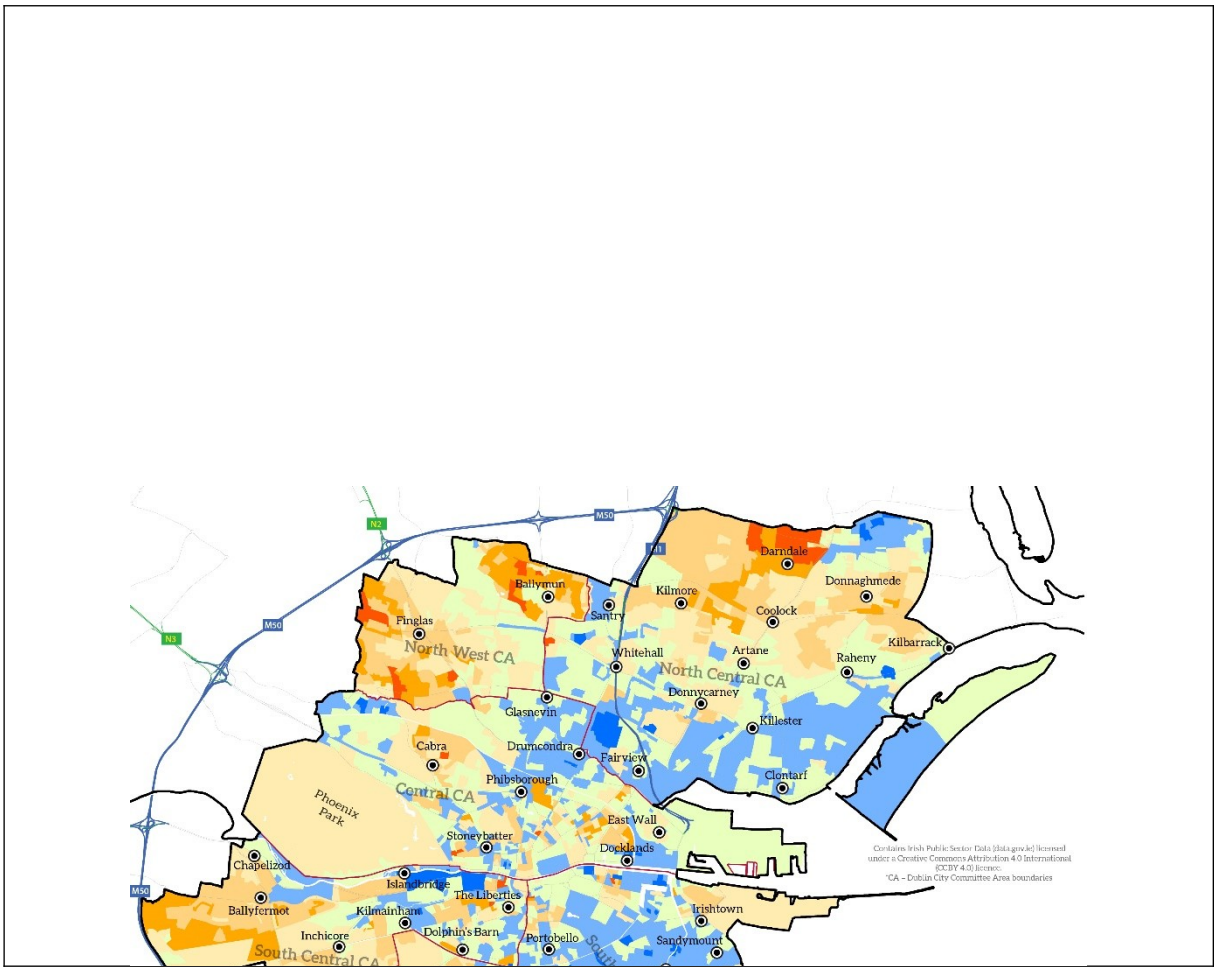


Figure 5. Urban Sense Real Time CO2 Monitoring at Civic Offices (Source: Terrain AI, 2024)



2 Part A – Current State of Climate Action

Part A "Current State of Climate Action" describes the point of departure of the city towards climate neutrality, including commitments and strategies of key local businesses, and informs the subsequent modules and the outlined pathways to accelerated climate action.

2.1 Module A-1 Greenhouse Gas Emissions Baseline Inventory

Module A-1 "Greenhouse Gas Emissions Baseline Inventory" details and describes the latest GHG inventory, where available from 2018 or more recent, referring to a clearly stated geographic boundary. The aim of this section is to establish the emission baseline and to establish the emissions gap to 2030 climate neutrality according to the inventory specifications defined in the Cities Mission's *Info Kit for Cities*[2] and the process outlined in the CCC Action Plan Guidance and Explanations. It includes:

- Definition of geographic boundary of the GHG inventory and, if applicable, excluded areas, sectors, scopes, sources, gases.
- An explanation of any (current) mismatch between the boundary of the GHG inventory and the climate-neutrality target, including actions planned to address the mismatch.

[2] European Commission, 2021, *Info Kit for Cities*, European Commission. Further guidance is available also in: NZC, 2023, *Guidance on target setting and emissions inventories for the Climate-neutral and Smart Cities Mission*, NetZeroCities https://netzerocities.app/resource-3814

- Key data and visualisation of the latest GHG inventory (ideally not older than 2018), according to the coverage (source sectors, scopes, and gases) specified in the Mission's "Info Kit for Cities" to establish the emission baseline. If additional inventories are used in the CNAP, the same information should be provided for all inventories.
- Descriptive assessment of current GHG inventory, including a description of the current state of each emitting sector.
- Where a BAU scenario is used as baseline, a description of methodology and assumptions (for instance, which sectors/sources/gases are actually modelled; locally specific input variables vs. national or default data, etc.).

GHG Emissions Baseline inventory

The baselines provided here are for the administrative boundary of Dublin City Council, excluded from this baseline is the AFOLU sector.

Baseline for 2018: Context

Mitigation

As part of our submission, we have uploaded our baseline as provided to us by our energy agency following a bespoke methodology that has been submitted to Covenant of Mayors via My Covenant. The methodology and a report "Dublin Regional Energy Master Plan" has been uploaded to provide context for our baseline.

The inventory has been produced using data that is publicly available. A key challenge with the methodology is that it deploys a synthetic methodology to estimate energy use from which to calculate emissions in the residential and commercial sectors. The methodology relies on building energy ratings, year of build and typology to estimate the energy use and in turn the emissions. A key challenge is that a BER is an estimate of potential energy use not actual energy use. This is further compounded by the requirement for a building to have a BER in order to be rented or sold. A BER certificate is valid for 10 years, and if not renewed it defaults to the lowest energy rating. As such estimation for the built environment do not reflect actual energy use. Emerging research is unveiling challenges with the BER rating system highlighting the underperformance of high rated BER buildings. This points to issues with an absence of rigorous verification, and a need for accompanying behaviour campaigns.

A gap in our emissions inventory is the AFOLU sector. Within Dublin City there are large swathes of green space that are not accounted for, approximately 17% of the city's area is green space. Further our measures undertaken to increase green cover are not captured. Although not covered by AFOLU as a coastal city, work is ongoing to understand, with a view to expand, the seagrass coverage, which is noted for its ability to capture carbon and reduce the energy of ocean waves. As a coastal city with a UNESCO Biosphere designation, there is a valuable understudy carbon sink that needs to be conserved to ensure its long-term contribution to carbon dioxide remove at a global scale.

Dublin City Council's Energy and Emissions Profile

Dublin is capital city of Ireland and Dublin City Council (DCC) is the municipality responsible for administering a wide range of public services across the city area. Codema, Dublin's Energy Agency, calculated the overall emissions for the area served by DCC to be 2,183,270 tonnes of Carbon Dioxide equivalent (tCO_2e) in 2018. (It is acknowledged that when converted to a per capita number this is below the per capita average at the national level, this highlights the need for an improved methodology). Data collected as part of the Dublin Region Energy Masterplan (DREM) project, including 2016 census data, was used in Codema's methodology for the *'Baseline Emissions Inventory'* (BEI). *Figure 7* below illustrates the percentage of greenhouse gas (GHG) emissions attributable to each sector, including the proportion directly controlled by DCC as 1.8% for the municipality and 4.5% by tenants of social housing.

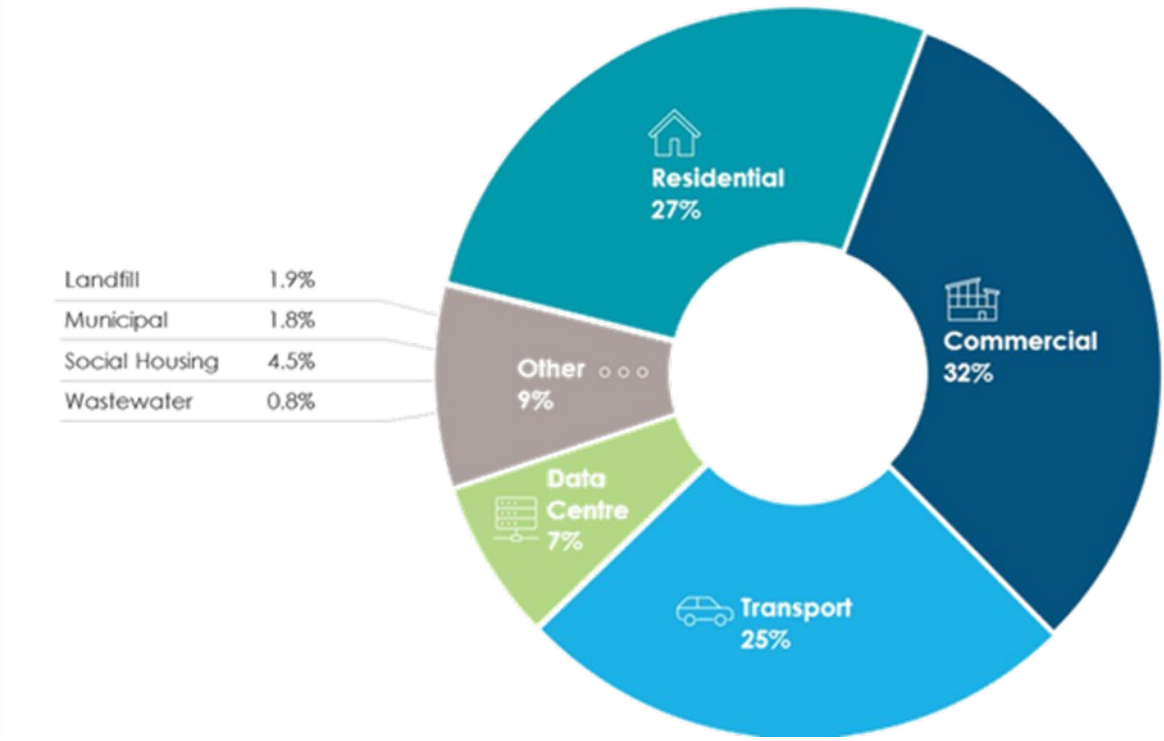


Figure 7 – Total GHG Emissions per Sector for Dublin City (Source: Codema)

This section outlines the types and quantities of energy consumed by DCC's operations, as well as the energy performance improvements achieved. As an Irish public body, DCC must report all attributable energy consumption to the Sustainable Energy Authority of Ireland's (SEAI) Monitoring and Reporting (M&R) system. The M&R systems show a total of nearly 111 gigawatt hours (GWh) of final energy consumption in 2022, which represents 160 GWh in primary energy requirement. The breakdown of across the significant energy users is shown in *Figure 8* below

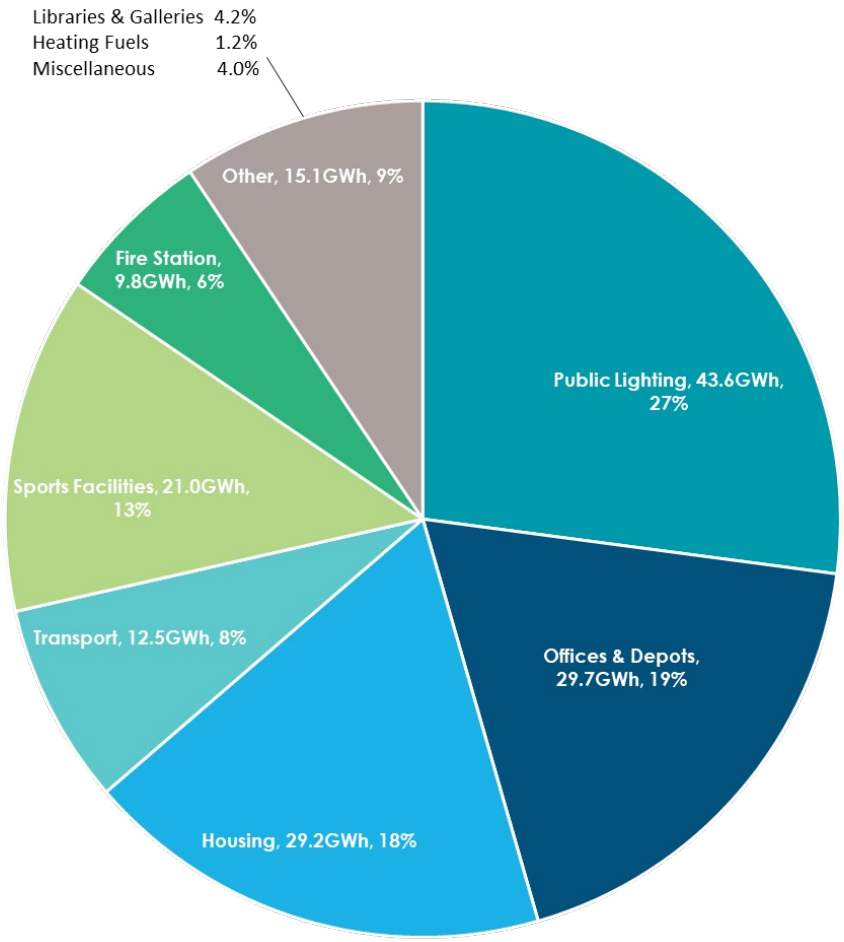


Figure 8 DCC Significant Energy User's TPER in 2022 (Primary Energy) (Source: Codema)

According to data submitted to the M&R system and shown in shown in *Figure 9* DCC has been making progress on energy performance improvement for more than a decade. The graph shows a 40% improvement in energy efficiency since the Baseline. DCC is currently engaged in preparatory work to attain ISO50001:2018 Energy Management System certification. Achieving and maintaining this internationally recognised standard will bring further impetus to these efforts and support the decarbonisation of DCC's operations.

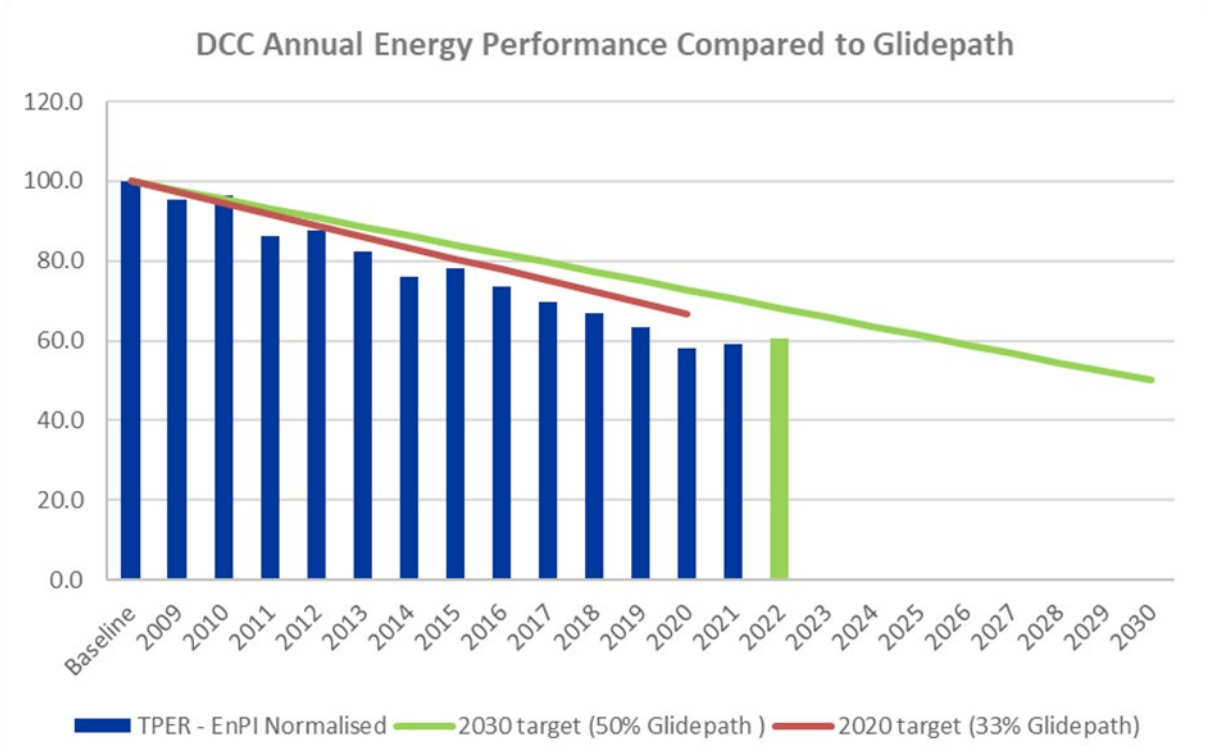


Figure 9 - DCC Annual Energy Performance (Source: Codema / SEAI)

The energy types consumed by DCC can be organised into three main categories of electricity, thermal (natural gas and heating fuels) and transport (diesel and petrol). The emissions associated with each of these categories are shown in *Figure 10* within the Gap-to-Target section. The total energy-related emissions in 2021 were 30,216 tonnes of carbon dioxide (tCO_2), with electricity responsible for the largest proportion with just over half, of which 25% was attributed to Public Lighting. DCC's Public Lighting Improvement Strategy will reduce the electricity demand from Public Lighting and these efforts are complimented by the decarbonisation of the national electricity grid. Natural gas consumption was responsible for 36% of DCC's energy-related emissions and the on-going programme of electrification of the thermal load will reduce this amount. With approximately 10% of the energy-related emissions, the diesel vehicles within the DCC account for the vast majority of the emissions within the transport category.

Closing the Gap to Target

Dublin City Council is subject to public sector energy efficiency and energy-related emissions targets (as are all public and civil organisations), with performance evaluated through the SEAI's Monitoring and Reporting Framework. A spreadsheet model called the Gap-to-Target (GTT) model is used to analyse progress to date and highlight remaining emissions reductions required by DCC to meet the 2030 targets. In order to maximise the benefits of national grid decarbonisation and on-site renewables, public sector emissions targets focus of reducing the emissions associated with the thermal and transport categories, these are referred to as non-electricity related emissions. Progress on emissions targets is measured against a baseline calculated from the average across 2016, 2017 and 2018. There was a reduction of 21% in energy related emissions by 2022, however the vast majority of this was attributed to grid decarbonisation. Non-electricity related emission fell by only 3% in the same period, leaving a Gap-to-Target of 48% to achieve the combined 51% by 2030 under public sector policy. Figure *below illustrates the* anticipated energy-related emissions reductions that Dublin City Council will achieve through successful implementation of proposed decarbonisation projects pipeline.

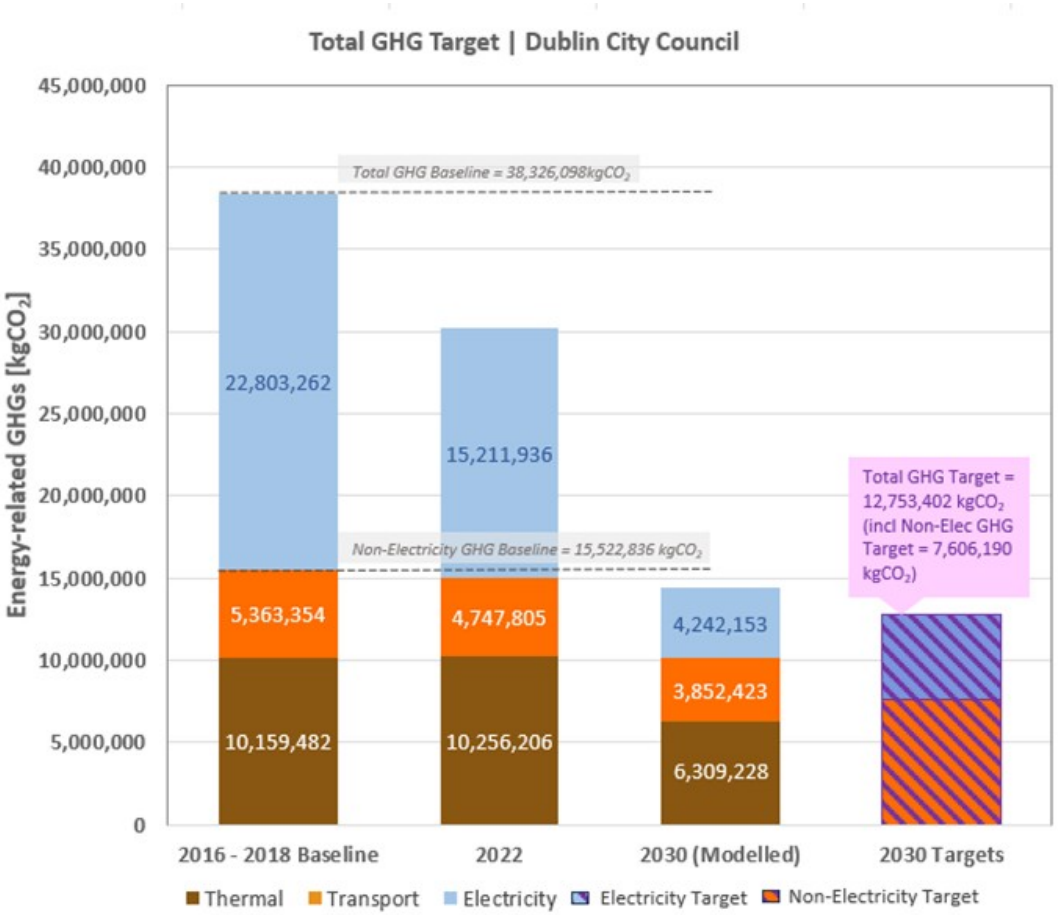


Figure 10 Gap-to-Target Tool, Total DCC Emissions Targets for 2030 and Current Emissions (Source: Codema)

Dublin City Council's Social Housing

Dublin City Council is responsible for the allocation, maintenance, and refurbishment of its social housing stock, but not for the day-to-day energy use of its tenants. Nevertheless, the Council can proactively address these emissions by implementing energy efficiency enhancements. To gather the most up-to-date insights into DCC's social housing, the Council's social housing data and reports from 2022, along with the Building Energy Rating (BER) Research Tool provided by the Sustainable Energy Authority of Ireland (SEAI), serve as the primary sources. The BER serves as a certification indicating the energy efficiency level of a property, with an 'A1' rating signifying the highest energy efficiency and a 'G' rating representing the lowest level of efficiency.

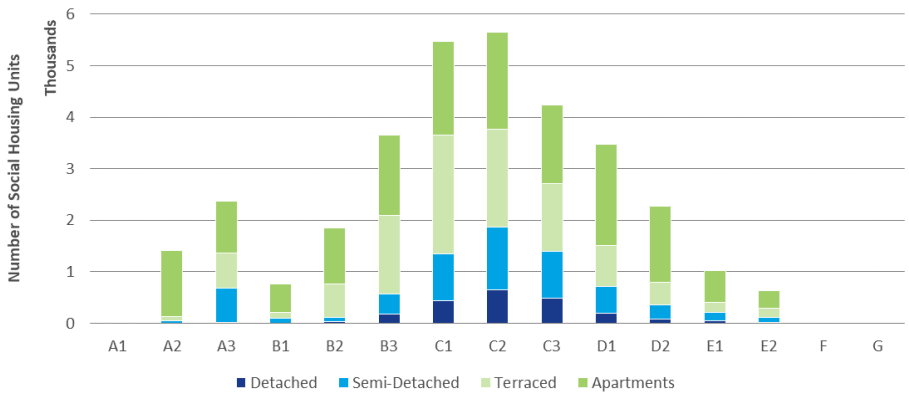


Figure 11 Distribution of BER by Dwelling Type for Total Housing Stock (Source: Codema)

The Distribution of BER by Dwelling Type for Total Housing Stock shows the breakdown of properties across different energy efficiency categories for four types of dwellings: Detached, Semi-Detached, Terraced, and Apartments.

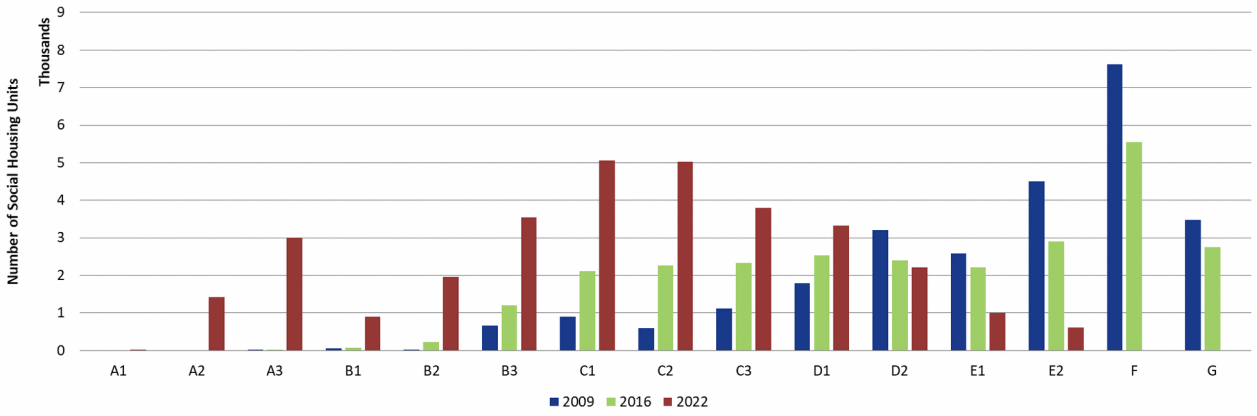


Figure 12 Building Energy Ratings for all the Dublin City Social Housing Stock in 2009, 2016 and 2022 (Source: Codema)

The data reveals a positive trend in the energy efficiency of buildings in Dublin City. From 2009 to 2022, there has been a significant decrease in lower-rated BERs, with a reduction of 72.1% for ratings D1, D2, E1, E2, F, and G. Additionally, there has been a significant increase in higher-rated BERs, specifically A1, A2, A3, B1, and B2 categories. Moderate efficiency ratings (C1, C2, and C3) remain dominant, representing 47.8% of buildings in 2022.

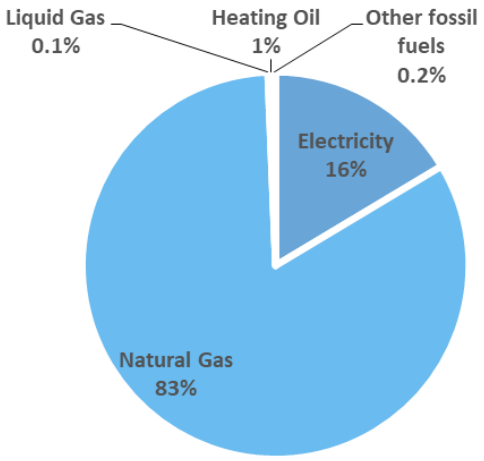


Figure 13 Share of Total Emissions from Social Housing by Fuel Type (Source: Codema)

The data reveals that social housing in DCC contributes with 114,574 tonnes of CO2 emissions, where natural gas alone accounts for 83% of CO2 emissions, electricity 16%, Liquid gas with 0.1%, Heating oil with 1% and other Fossil fuel usage with 0.2 %.

Adaptation Baseline

Making Dublin resilient to climate change is a target of the CAP, this calls for adapting the city and build residents' adaptive capacity for a future where we live with the impacts of climate change, such as flooding, extreme temperatures, and extreme weather events, that are locked in and are prepared for the unknown impacts.

Uncertainty adds to the challenge of implementing actions that contribute to the city's resilience. Despite this DCC has made progress in the implementation of actions that contribute to our overall resilience, particularly in the use of nature-based solutions to respond to flood risk in the city. However, we have not adequately responded to other known climate risks, such as heat. (Research through the CARO is planned for 2025 to address this)

Further, the long-term challenge is ensuring that the adaptation actions we implement are just. The implementation of city development plan is vital to making the city and residents resilient to climate change. The decisions we make about land-use and land-use change will determine our adaptive capacity. The location of housing, employment determines our vulnerability and exposure to climate risk.

We need to map our hazards, risks and vulnerability and use this to inform our decisions and investments. Critically this needs to be done regularly, as during the time that this plan has been written in 2023, Ireland experienced the driest June on record, followed by the wettest July and Storm Betty. This demonstrates that climate change is not only sudden events, but slower onset events with cascading and compounding impacts.

The Climate Change Risk Assessment that has been updated in the process of developing this plan, highlights that the frequency and intensity of events will increase in future, but that there are still unknowns.

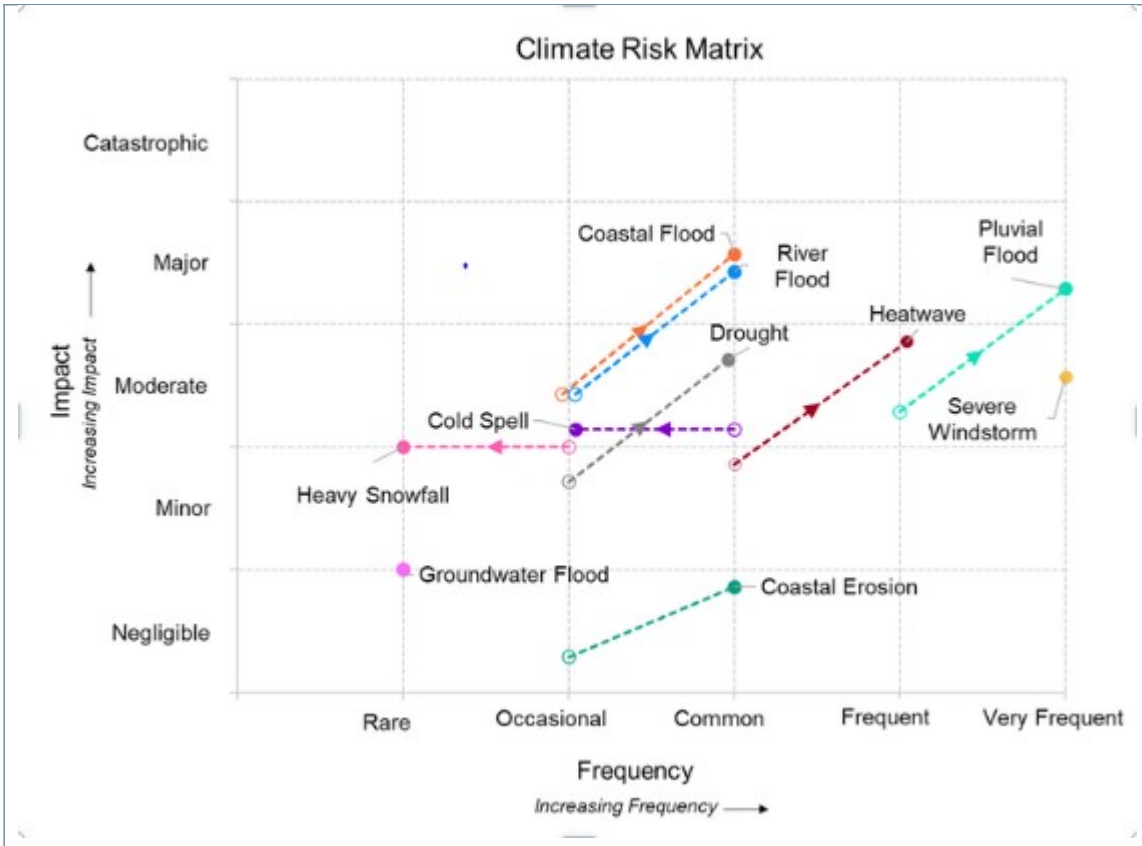


Figure 14 Climate Risks for Dublin City (Source : KPMG 2023)

As illustrated in the climate risk matrix above, projections indicate that the level of risk associated with some hazards (e.g., river and pluvial flooding, heatwaves and droughts) will increase while the level of risk will remain the same for others (e.g., severe windstorms and groundwater flooding). Risks associated with some hazards are expected to decrease due to projected reductions in hazard frequency, such as cold spells and heavy snowfalls.

- Pluvial flooding poses a relatively high risk for Dublin City and occurs on frequent basis with a moderate impact associated with the inundation of assets and road infrastructure. The risks associated with pluvial flooding are projected to increase in the future as a result of projected increases in the frequency of hazard events and also due to an increase in the areas, assets and populations exposed to these hazards.
- River flooding and coastal flooding occurs less often, but with a greater overall impact on Dublin City primarily due to direct and substantial damage to assets and infrastructure, disruption of transport networks and mobilisation of pollutants with detrimental impacts on bathing water areas. The risks associated with existing hazards such as river and coastal flooding are projected to increase in the future.
- Severe windstorms are currently experienced on a very frequent basis across Dublin city and result in wide-ranging impacts, including damages to power and communication infrastructure and disruption to transport networks. Projections indicate no significant change to this frequency.
- Dublin City experienced both a heatwave and drought in 2018, while a heatwave was also recorded in 2022. The most notable and costly impacts relate to the management of facilities at key recreational areas, and increased use of mechanical cooling. Projected increases in the frequency of heatwaves and drought conditions will mean that events currently experienced on an infrequent basis will become more frequent.
- Recent experiences of cold spells and heavy snowfall events in 2018 (e.g. Storm Emma) and 2022, demonstrated the wide range of impacts for Dublin City. These included, amongst others, road closures, disruption to public transport, power outages, an increase in the frequency of trips and falls, and impacts on water resources. Projected increases in average temperature and decreases in

the frequency of snowfall indicate a decrease in the frequency of cold spells, heavy snowfall, and their associated impacts.

- Groundwater flooding is currently experienced rarely in Dublin City and has limited impacts such as damages to roads and transport disruption. Groundwater flooding is also thought to be unchanged in the future.

Limitations and Key Recommendations:

This Climate Change Risk Assessment (CCRA) report has been developed on the basis of the most-up-to-date climate projection data available for Ireland at the time of writing. This data focuses on changes in average climatic conditions for a high emissions scenario (RCP8.5). Where risks have been identified as part of this initial qualitative CCRA, furthermore detailed assessment should be undertaken as part of semi-quantitative and/or quantitative site specific CCRAs which employ the full range of projected changes in climate parameters (including extremes) and more up-to-date climate projection information where available.

The CCRA report focuses on the direct risks posed by climate change for Dublin City and the implications of these for Dublin City Council. It is important to note that climate change will also pose indirect risks for Dublin City as a result of changes in climate conditions at international and global scales. These include amongst others forced migration of populations, increase in vector-borne disease and disruption of supply chains, Resulting in economic shocks with social consequences

Table II **A- 1.1: Final energy use by source sectors**			
Base year	2018		
Unit	MWh		
	Scope 1	Scope 2	Scope 3
Municipal Buildings	56732.421 MWh	50950.72 MWh	Will be reporting on by 2027
(Fuel type/ energy used)	Natural Gas - 55912.376 MWh Heating Oil – 433.715 MWh Diesel – 386.33 MWh	Electricity – 50950.72 MWh	
Non-Municipal Buildings	1149581.9 MWh	794197.51 MWh	NA
		Electricity – 794197.51 MWh	
Residential Buildings	2722139.7503	65982.5347	NA
	Natural Gas – 11810207.276 Heating Oil – 215078.5468 Coal – 109913.9275	Electricity – 652982.5347	
Transport	2024399	55983	
(Fuel type/ energy used)	Diesel – 1184568 Gasoline - 839832	Electricity 55983	
Waste	NA		
(Fuel type/ energy used)			
Industrial Process and		401238.95 MWh	

sensors, which measure greenhouse gases such as carbon dioxide and methane, as well as air quality parameters and weather variables, will provide a real-time visual pulse of the city, reflecting differences in land use, seasonal cycle in vegetation growth, weather events and even hourly patterns of traffic moving in and around the city streets. DCC is keen to see how this partnership will strengthen our capacity to communicate the impacts of our policies. The challenge here will be scaling and financing the project in a manner that ensures public good remains at the core.

Further, DCC is also actively supporting the continuation of Terrain AI, a multidisciplinary research collaboration to understand the impact of human activity on land use.

Recognising the compounding challenges of climate change and the demands that emerge with a growing global population. Terrain AI is exploring innovative AI and computational methodologies in how we collect, fuse and model multi-thematic data in order to develop a better understanding of GHG exchange across our farms, forests, peatlands and urban spaces. These improved GHG monitoring methodologies and standards will be adapted & scaled for other regions and countries across the globe.

Funded initially by Science Foundation Ireland (SFI) (now Research Ireland) and Microsoft Terrain AI develops new cloud-based, automated workflows and machine learning data toolsets for profiling and characterising environment types for more effective and precise carbon mitigation policies and practices.

Terrain-AI is advancing the standards of measurement, monitoring, verification and reporting of carbon stocks and emissions across complex environments. Researchers are developing innovative AI solutions and technologies, integrated with computational models, to provide more accurate estimates of carbon fluxes across scales, and a deeper understanding of the effects of human activities, to enable decision makers to develop more effective climate mitigation strategies.

Ultimately, Terrain AI is developing a rolodex of data sets, alongside a standardized cookbook for processing data that can be accessed by researchers and policy makers, to gain a deeper understanding of policy impacts.

For Dublin City, this presents an opportunity for delivering evidence-based policy enriched by data insights that can tell a rich picture of the impacts of projects, programmes and plan.

Further at the National level there are several initiatives that will contribute to an in depth understanding of emissions. Ireland has recently joined International Carbon Observatory System (I-COS, and the Irish Centre for High-end Computing is involved in Destin-E.

2.2 Module A-2 Current Policies and Strategies Assessment

Module A-2 “Current Policies and Strategies” lists and assesses existing policies, strategies, initiatives, or regulation from local, regional, and national level, relevant to the city’s climate neutrality transition. This assessment contributes to identifying the gap (if any) between the emissions reduction due to existing initiatives and the city´s 2030 climate neutrality target. Filling this gap by identifying additional actions and levers to achieve the city´s emission reduction target is the focus of this Action Plan. The assessment of current policies and strategies offers hence a starting point for exploring the impact pathways (See Part C). The module includes:

- Comprehensive list of local relevant policies, strategies, concepts, as well as of regional and national legislation that impact local climate action.
- Descriptive assessment of the current climate-relevant policy context, summarising the objectives and implementation concepts, addressing e.g., spatial planning, energy, local economy, circular/bioeconomy, waste, transport, housing, urban greening/nature-based solutions).

- Quantification of the emissions gap (i.e., emissions reduction target minus reductions already addressed through existing climate action plans).

Table VI-2.1.1 Summary Policy					
Policy Area	**Local**	**Regional**	**National**	**EU**	**International**
Planning	Land-use Planning: Dublin city Development Plan 2022-2028 Local Area Plans Strategic Development Zones	Metropolitan Area Spatial Plan; Greater Dublin Drainage Strategy;	Project Ireland 2040 National Planning Framework; National Adaptation Framework; National Development Plan 2021-2030	EU Mission Adaptation;	IPCC Special Report on Land Use and Climate Change
Energy		New Requirement in 2025 for Regional Energy Plans Dublin Regional Energy Masterplan (Not statutory)	National Energy and Climate Plan Critical Infrastructure Sectoral Adaptation Plan Energy Security in Ireland to 2030 ESB Strategy 2040: Driven to Make a Difference; National Plan for Non-Domestic Building Retrofit	EE Directive; EPB Directive; REPowerEU plan	UN SDGs
Economy	Local Economic and Community Plans	Regional Spatial Economic Strategy	Public Spending Code; National Investment Plan; Ireland's international Climate Finance Roadmap (2022); Green Public Procurement Strategy and Action Plan 2024-2027; National Recovery and Resilience Plan	EU Green Deal; EU Mission on Climate Neutral and Smart Cities;	UN SDGs
Waste	Litter Management Plan	Regional Waste Management Plan	National Waste Action Plan for a Circular Economy; National Policy		

			Statement on the Bioeconomy; Food Vision 2030		
Transport	Dublin City Transport Plan 2023	Greater Dublin Transport Study	Transport Sectoral Adaptation Plan; National Sustainable Mobility Policy; Moving Together: A strategic approach to the improved efficiency of the transport system in Ireland (DRAFT) Smarter Travel – A Sustainable Transport Future Vehicle Registration Tax	Biofuels Obligation Scheme	
Housing	Local Area Plans	Regional Spatial Economic Strategy	Housing for All; National Retrofit Plan	Energy Performance in Buildings Directive	
Biodiversity	Biodiversity Action Plan; Greening Strategies		National Biodiversity Action Plan All Island Pollinator Plan	Nature Restoration Law ; EU Soil Mission, EU Oceans Missions	UN CBD
Health	Active Cities – Sports Strategy	Regional Air Quality Plan; Regional Noise Plan	Health Sectoral Adaptation Plan	EU Cancer Mission	WHO Breath Life Campaign
Cross-Sectoral	DCC Corporate Plan		CAP24; Ireland's GHG Emissions Inventory 1990-2022; CCAC Annual Report; National Carbon Budget; LA CAP Guidelines; Ireland's Long-term Strategy on Greenhouse Gas Emission Reduction		IPCC AR6; Global Stocktake; UN SDGs, UNCRD

A-2.1: Description & assessment of policies

Ireland's climate policy ecosystem is complex and continually evolving. We aim to provide a high-level overview of the policies at various levels of government from EU and International to city level and their impact on climate governance at the city level (Figure 20). In this section we provide a summary of policies and where possible their relevance to and impact on the city's climate neutrality ambitions. The actions in the CNAP and Climate Neutral Dublin 2030, respond to these policies by applying a systems approach.

EU and International

IPCC AR6

The Intergovernmental Panel on Climate Change published AR6 Synthesis Report, which is based on the content of the three Working Group Assessment Reports: WGI – The Physical Science Basis, WGII – Impacts, Adaptation and Vulnerability, WGIII – Mitigation of Climate Change, and the three Special Reports: Global Warming of 1.5°C, Climate Change and Land, The Ocean and Cryosphere in a Changing Climate.

A message from AR6 Synthesis Report is that the current pace and scale of climate action are insufficient to tackle climate change. Adverse impacts from human-caused change will intensify and extremes become more widespread and pronounced with every increment of warming. The challenge ahead is to cut emissions quickly and sharply, scale up practices and infrastructure to enhance resilience and do both along numerous dimensions.

The report highlights the path forward; tried and tested options are available now, they need to be designed for diverse contexts, scaled up and widely applied. Mainstreaming effective and equitable climate action now via integrated adaption and mitigation in ways to provide wider benefits will reduce losses and damages for both nature and people, as well as improving health and livelihoods, reducing poverty and hunger and resulting in clean energy, water and air.

"Our choices will reverberate for hundreds, even thousands of years."

Global Stocktake

The Global Stocktake was established in the Paris Agreement as a process to assess the world's collective progress toward the goals of the Agreement. Each stocktake is a two-year process and occurs every five-years. The first stocktake began at the UN Climate Change Conference of the Parties in Glasgow (COP 26) in 2021 and will conclude at COP 28 in 2023.

The stocktake occurs in three phases. Phase 1 includes collecting and preparing information. This phase runs from November 2021 until June 2023, with phase 2, a technical assessment, started in June 2022 and will also conclude in June 2023. Phase 3 is a consideration of outputs, focusing on the implications of findings from phase 2, and will occur during COP 28 in November 2023.

The result of phase 3, and the purpose of the stocktake is to:

- Identify opportunities and challenges in enhancing action and support in collective progress
- Identify possible measures and good practices
- produce recommendations for strengthening action and enhancing support

Relevance & Impact

Since AR5 there has been increasing acknowledgement that cities are key stakeholders in delivering action on climate change. The Cities IPCC Conference held in Edmonton, Canada in March 2018, solidified the importance of cities for AR6 and AR7, resulting in the forthcoming Special Report on Cities and Climate change. Dublin City Council's first climate action plan was one of the 76 poster presentations in Edmonton, demonstrating our commitment to action. AR6's and the Global Stocktake at COP28 both call for accelerated action provides confirmation for our ambition to achieve neutrality, our hope is that the special report further confirms applying a systems approach to achieve action.

WHO Breathe Life Campaign

Breathe Life is a joint campaign led by the Climate and Clean Air Coalition, World Health Organisation, United Nations Environment Programme, and World Bank to mobilise cities and individuals to protect our health and our planet from the effects of air pollution.

BreatheLife combines public health and climate change expertise with guidance on implementing solutions to air pollution in support of global development goals. Key solutions for transport, waste management, household air pollution, energy supply, industry, and food and agriculture are the basis for the campaign.
BreatheLife connects governments by providing a platform for air quality managers and decisions makers from cities, regions and countries to share best practices and demonstrate progress in their journey to meeting WHO air quality targets by 2030. The campaign shares stories of success to empower individuals and governments to accelerate solutions.
The network of organisations and governments of different levels active in the campaign represents over 490 million people.

Relevance & Impact

Recognising the need to protect and improve our understanding of air quality in Dublin, DCC has committed to the WHO Breathe Life Campaign. In launching the Breathe Life Campaign with the Comhairle na nOg, (DCC's youth council) DCC has made a commitment to future generations to ensure that Dublin is a city with clean air, clean water and a high quality of life. As a signatory we have to date incorporated air quality and climate action into our City Development Plan and to continue incorporating both into all policies. As per national and regional policies decarbonisation zones, low emission zones, and strategic energy zones in the Development Plan will act to ensure future air quality, and further the progress made to date using quiet zones and lower speed limits. Further, we work at the regional level with neighbouring local authorities and the EPA to deliver a regional air quality management plan. A recent partnership with Google AirView has allowed us to gain hyperlocal insights into air quality and contribute to implementation of policy to protect air quality. Finally, Climate Neutral Dublin 2030 has embedded a health impact assessment to ensure that air quality is maintained.

UN Sustainable Development Goals

'The SDGs are a bold commitment to finish what we started, and tackle some of the more pressing challenges facing the world today. All 17 Goals interconnect, meaning success in one affects success for others. Dealing with the threat of climate change impacts how we manage our fragile natural resources, achieving gender equality or better health helps eradicate poverty, and fostering peace and inclusive societies will reduce inequalities and help economies prosper. In short, this is the greatest chance we have to improve life for future generations.' (United Nations Development Program, 2023)

Ireland had a key role in furthering 'Transforming our World', the 2030 agenda for sustainable development.
The 17 SDGs were brought about by the joint facilitation of the Irish and Kenyan UN ambassadors, who consulted with UN member states, civil society, the private sector and more, to commit to ending poverty and inequality, and to tackling climate change. (Flanagan and Kirwan, 2020).

Relevance & Impact: The SDGs and Local Authorities

'We recognize that sustainable urban development and management are crucial to the quality of life of our people. We will work with local authorities and communities to renew and plan our cities and human settlements so as to foster community cohesion and personal security and to stimulate innovation and employment. We will reduce the negative impacts of urban activities and of chemicals which are hazardous for human health and the environment, including through the environmentally sound management and safe use of chemicals, the reduction and recycling of waste and the more efficient use of water and energy. And we will work to minimize the impact of cities on the global climate system.' (United Nations, 2015)

The role of Local Authorities is key to implementation of the goals and the Dublin City Council's Climate Neutral Dublin 2030, brings together the dimensions of biosphere, economy and society.
In creating a vision of an open, social, resilient and resource-full city, we have the ideal opportunity to create connection and build on the Sustainable Development Goals by creating interconnected systems in the furtherance of reducing carbon emissions and creating a healthier and more sustainable Dublin.

Where possible we have used indicators that are part of the SDG framework to monitor the actions we are taking to address climate change and to capture co-benefits and align with national reporting.

UN Convention on Rights of Persons with Disability

Adhering to the UN Convention on the Rights of Persons with Disability is vital to ensuring that our transition is just and does not harm. The UNCRD requires that action be taken to promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities, and to promote respect for their inherent dignity. Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.

Relevance & Impact

In October 2024, the Irish Government approved ratification of the Optional Protocol to the UNCRPD, signalling a commitment to addressing inequalities for disabled people. The UN has highlighted that disabled people are among those most adversely affected by Climate Change and stresses the importance of including disabled people in mitigation and adaptation policy measures. This is critical to achieving a transition that is just, equitable and inclusive.

UN Convention on Biological Diversity (CBD)

The CBD was signed by 150 government leaders at the Rio Earth Summit and entered into force in December 1993 with three main objectives, 1) the conservation of biological diversity; 2) The sustainable use of components of biodiversity; 3) the fair and equitable sharing of the benefits arising out of utilization of genetic resources. During the fifteenth meeting of the conference of the parties (COP15) the Kunming-Montreal Global Biodiversity Framework was adopted and with it a significant milestone toward the achievement of the Sustainable Development Goals was reached.

EU Revision of Energy Efficiency Directive

In March 2023 the EU agreed to reform and strengthen the EU *Energy Efficiency Directive*. This is one of the proposals presented in the *Fit for 55* and a step further in delivering the *European Green Deal* (the EU's long-term growth strategy to make Europe climate-neutral by 2050) and the *REPowerEU Plan* (the EU strategy to stop dependency on Russian fossil fuel imports).

The revision to the *Energy Efficiency Directive* has given legal strength to the requirement for EU countries to take energy efficiency into account in policy, planning and major investment decisions both in the energy sector and beyond. It established an EU energy efficiency target of 11.7% for 2030, requiring EU Member States to collectively ensure an additional reduction of final and primary energy consumption. There is also greater responsibility placed on the public sector to increase energy efficiency; they must take energy efficiency requirements into account for procurement of products, services and works in addition to a new annual energy consumption reduction target of 1.9% (baseline 2021).

The revised directive includes the first ever EU definition of energy poverty, putting a stronger focus on alleviating energy poverty and empowering consumers. Member States are required to implement energy efficiency improvement measures as a priority among people affected by energy poverty, vulnerable customers, low-income households, and where applicable, people living in social housing.

Relevance & Impact

Public sector progress on energy efficiency is reported by the SEAI in the Annual Report on Public Sector Energy Performance and this regular monitoring and reporting has contributed to the overall improvement recorded across the sector. Dublin City Council, along with the other three Dublin Local Authorities, have all recorded improvements in energy efficiency (DCC -41%) and reductions in energy-related GHGs (DCC -19%), illustrating progress is being made however there is acknowledgement that the rate of improvement needs to be accelerated. With the greater responsibility being placed on public bodies, there is recognition that the level of support and resources made available to local authorities must be increased and rolling out

funding such as the SEAI's Pathfinder Programme will be important in this regard.

Energy Performance in Buildings Directive (recast)

The Energy Performance in Buildings Directive was recast in 2018 and the amended text has been approved and is to be transposed into national legislation by a date in 2026. The provisions of the recast EPB Directive seeks to act as a catalyst for the phasing out of fossil fuels, increase in renewable energy, support the deployment of electric vehicles and bicycle use, as well as improving the Minimum energy Performance Standards in buildings. The recast EPB Directive differentiates between residential and non-residential buildings and places an onus on the non-residential sector to lead the renovation of building stock.

Relevance & Impact

Within the Irish context, the National Climate Action Plan 2023 assigned the Sustainable Energy Authority of Ireland (SEAI) as the lead coordinator for the National Building Stock Plan of the public buildings portfolio and the SEAI has issued guidance to public bodies in this regard. This action was initiated in anticipation of the EPB Directive's transposition and seeks to facilitate a critical review of the portfolios of public bodies across the country and achievement of a reduction in final energy consumption of at least 1.9% per annum and the renovation of at least 3% of the floor area of public buildings per annum. Local Authorities like Cork City Council and Dublin City Council are designated as *National Portfolio Leads* under the SEAI's guidance to drive renovation in public buildings.

Nature Restoration Law

In July 2023 the EU passed the Nature Restoration Law. It is the first continent-wide and comprehensive law of its kind, covering wetlands, forests, grasslands, rivers, lakes, heath and scrub, rocky habitats, dunes, pollinating insects, forests, urban green spaces, agricultural ecosystems, marine ecosystems and river connectivity. Its objective is to restore ecosystems, habitats and species across the EU's land and sea areas. These actions will enable long-term and sustained recovery of biodiverse and resilient nature, contributing to achieving the EU's climate mitigation and adaptation objectives, as well as international commitments.

EU countries are expected to submit National Restoration Plans to the Commission and monitor and report on progress.

Relevance & Impact

Ireland voted in favour of adopting the law and 11 of Ireland's 13 MEPs voted in favour of the Nature Restoration Law earlier in the process in March 2024, with Ciaran Cuffe of Dublin constituency a key voice throughout its passage into law. In budget 2024, the Irish government set aside a €3.15bn Climate and Nature Fund to support implementation of nature restoration measures across the country. Under the Nature Restoration Law countries will have to develop a Nature Restoration Plan to achieve the objectives set out and a first step in that process has already been taking in Ireland with the establishment of a new Independent Advisory Committee on Nature Restoration. While the Committee will be taking a national perspective, having Dublin-based committee members may contribute towards nature in the city being appropriately recognised. The Chairperson of the Committee is Dr Aoibhinn Ní Shúilleabháin of UCD, who chaired the Citizen Assembly on Biodiversity and another UCD colleague on the Committee Professor Tasman Crowe, has undertaken research on the Dublin Bay Biosphere, as well as chairing the National Biodiversity Forum.

The challenge that persists is the financing and funding to realise nature restoration. Dublin City Council is taking demonstrable steps towards engaging the public on the value of nature restoration through biodiversity centres.

EU Green Deal

The purpose of the EU Green Deal is to ensure at least 55% less net greenhouse gas emission by 2030 (compared to 1990 levels), no net emission of GHGs by 2050 and economic growth decoupled from

resource use, all under the principles of a just transition. To achieve these goals, the EU Green Deal encompasses transformational change across sectors: transport, industry, energy systems, built environment, nature restoration and circular economy.

EU Mission: Climate-Neutral and Smart Cities

European cities can substantially contribute to the EU Green Deal target of reducing emissions by 55% by 2030. Cities take up 4% of the EU's land area and are home to 75% of EU citizens. Globally, cities consume 65% of the world's energy and account for more than 70% of CO2 emissions. The aim of this EU mission is to deliver 100 climate-neutral and smart cities by 2030, acting as experimentation and innovation hubs to enable all European cities to follow suit by 2050. Using Climate City Contracts, portfolios of research and innovation projects and global knowledge exchanges, a network of national, local and regional authorities will support the cities transition to climate neutrality.

Relevance & Impact

Participation in the EU Mission provides the mechanisms by which Dublin City Council can accelerate partnerships to reach climate neutrality in a manner that is just and increases the city's resilience

EU Mission: Adaptation

The EU Adaptation Mission supports the EU Green Deal and contributes to putting the EU's Adaptation Strategy into practice. Its objective is to accompany 150 European regions and communities towards climate resilience by 2030. The mission will accomplish this by helping the regions and local authorities to better understand, prepare and manage climate risks. In addition to testing and deploying innovation solutions needed to build resilience.

Relevance & Impact

Participation in the Adaptation Mission provides Dublin City Council with an opportunity to share knowledge and experience to insure the resilience of the city to climate change impacts.

National Level Policy

Project Ireland 2040: National Planning Framework

National Planning Framework under Project Ireland 2040, the overarching policy and planning framework for the social, economic and cultural development of our country. The National Planning Framework (NPF) is the Government's high-level strategic vision for shaping future growth and development in the country. The NPF seeks more concentrated growth with 50% of overall national growth to be targeted towards the five main cities, including Dublin.

Relevance & Impact

The objectives of the NPF to which all planning must accord with are as follows:

- Guide the future development of Ireland, taking into account a projected 1 million increase in our population, the need to create 660,000 additional jobs to achieve full employment and a need for 550,000 more homes by 2040;
- Of the 1 million extra people, 25% is planned for Dublin, recognised as our key international and global city of scale and principal economic driver; 25% across the other four cities combined (Cork, Limerick, Galway and Waterford), enabling all four to grow their population and jobs by 50-60%, and become cities of greater scale, i.e. growing by twice as much as they did over the previous 25 years to 2016, and with the remaining 50% of growth to occur in key regional centres, towns, villages and rural areas, to be determined in the forthcoming regional plans – Regional Spatial and Economic Strategies (RSESs)
- Enable people to live closer to where they work, moving away from the current unsustainable trends of increased commuting;

- Regenerate rural Ireland by promoting environmentally sustainable growth patterns;
- Plan for and implement a better distribution of regional growth, in terms of jobs and prosperity;
- Transform settlements of all sizes through imaginative urban regeneration and bring life / jobs back into cities, towns and villages;
- Co-ordinate delivery of infrastructure and services in tandem with growth, through joined-up NPF/National Investment Plan and consistent sectoral plans, which will help to manage this growth and tackle congestion and quality of life issues in Dublin and elsewhere

National Development Plan 2021-2030 (National Investment Plan)

The National Development Plan sets out the Government's over-arching investment strategy and budget for the period 2021-2030. It is an ambitious plan that balances the significant demand for public investment across all sectors and regions of Ireland with a major focus on improving the delivery of infrastructure projects to ensure speed of delivery and value for money.

Relevance & Impact

In terms of climate action extensive efforts have been made to ensure that the NDP will support the Government's climate ambitions. For the first time in Ireland, climate and environmental assessment of the NDP measures has been undertaken, along with an assessment of the alignment of the plan as a whole with the ideals of a green recovery plan. Commitments are made to further reforms of the Public Spending Code and to the treatment of Energy Performance Contracts. Most significantly, €5 billion in additional carbon tax receipts over the period of the NDP have been allocated to increase capital investment levels in energy efficiency.

Public Spending Code

The Public Spending Code is the set of rules and procedures that apply to ensure that these standards are upheld across the Irish public service. The Code brings together in one place all of the elements of the value-for-money framework that has been in force up to now, updated and reformed in some respects.

Relevance & Impact

As a public body, Dublin City Council, needs to ensure that we are getting the best value for the resources available to us. Critically we must ensure that, climate change considerations are part decisions on expenditure of public monies.

National Energy and Climate Plan (Long term strategy)

National Energy and Climate Plans (NECPs) are the framework within which European Union Member States must plan their climate and energy objectives, targets, policies, and measures to the European Commission. Member States were required to develop NECPs on a ten-year rolling basis. Its aim is to outline our energy and climate policies in detail for the period from 2021 to 2030 and looks onwards to 2050. The NECP covers five dimensions of the EU Energy Union:

- Decarbonisation
- Energy efficiency
- Energy security
- Internal energy markets
- Research, innovation and competitiveness.

Relevance & Impact

The NECP brings together the policies, targets, tools and associated material from across Government bodies and departments in one document. It is an opportunity to 'lock-in' a systems approach for climate action and to achieve lasting systems change.

CAP24

Climate Action Plan 2024 was launched in December 2024 and is the third annual update to Ireland's Climate Action Plan 2019, and the first under the Climate Action and Low Carbon Development (Amendment) Act 2021. The plan will implement the carbon budgets and sectoral emission ceilings as well as setting a roadmap of action to halve our emissions by 2030 and reach net zero by 2050. Accompanying the plan is the Annex of Actions, containing specific actions that are required to meet the targets set out in the plan.

Relevance & Impact

CAP24 was the first national climate action plan to contain a chapter explicitly outlining the role of local authorities in climate action. This represents a recognition by the Irish Government of the importance of local authorities in climate action. Notably the actions in this chapter acknowledge Dublin City Council and Cork City Council's participation in the EU Mission and provide a commitment to supporting both through the creation of a national mirror group.

Ireland's Provisional Greenhouse Gas Emissions 1990 – 2022

Ireland is legally obliged to report data on greenhouse gas inventories to the relevant European and international institutions. The EPA is responsible for compiling and reporting this data for the period of 1990 – 2022 to the European Commission and the United Nations Framework Convention on Climate Change.

Due to the National Climate Objective and the associated carbon budgets, climate action plan review and sectoral reporting, the EPA published the provisional inventory data in July 2023 to facilitate the required monitoring and reporting processes.

These figures were based on the interim energy balances provided by the SEAI and the latest data from other data providers. The data is compiled using methodologies in line with UNFCCC reporting guidelines and include emission data from sources within the EU's Emission Trading Scheme.

The 2022 provisional total national greenhouse gas emissions (excluding LULUCF2) are estimated to be 60.76 million tonnes carbon dioxide equivalent (Mt CO2eq), which is 1.9% lower than emission in 2021. Emissions are over 0.5% lower than pre-pandemic figures in 2019. Including LULUCF, provisional national total emissions for 2022 decreased by 1.8% to 68.07 Mt CO2eq.

The provisional national total emissions including LULUCF for 2022 and latest emission estimates for 2021 are 137.36 Mt CO2eq. This accounts for 46.6% of the first five-year Carbon Budget of the 295 Mt CO2eq carbon budget for the period 2021-2025. This leaves 53.4% of the budget available, requiring a 12.4% average annual emission reduction from 2023-2025 to stay within budget.

CCAC Annual Reports

In the Annual Review 2023 the Climate Change Advisory Council stated that, "at the current rate of policy implementation, Ireland will not meet the targets set in the first and second carbon budget periods unless urgent action is taken immediately, and emissions begin to fall much more rapidly. Ireland's first task is to reduce and ultimately prevent emissions of greenhouse gases. To support this there must be effective and consistent engagement with communities, ensuring there is a fair and equitable transition, while building and maintaining public support and action."

The CCAC recommended the following:

- Government must address areas of uncertainty in how Ireland will reduce its emissions. The sectoral emissions ceiling for the Land Use, Land Use Change and Forestry sector must be set, and it must be clear by how much each sector must reduce its emissions.
- Government needs to identify and remove barriers to policy implementation by ensuring adequate funding and planning reform at scale and speed.
- Key actions need to be implemented now to prevent longer-term damage and increased costs to society and the economy.
- Government must adopt new approaches to address emission reductions, creating investment and enhancing skills across the economy, particularly in areas such as retrofitting and renewable

energy.

- The establishment of a Just Transition Commission is recommended to ensure that Ireland achieves its climate objectives in a way that is fair and equitable and protects vulnerable people and communities.
- The Government should support opportunities that reduce emissions and make Ireland better prepared for the impacts of climate change

Relevance & Impact

The CCAC under the legislation is tasked with monitoring Ireland's progress on climate action and providing recommendations on directions for achieving targets. Their assessment of local government performance is essential to understanding what actions need to be taken- the pace and scale.

Carbon Budgets

Under the Low Carbon Development and Climate Act Amendment (2021) the Climate Change Advisory Council is responsible the development of Ireland's three 5-year climate budgets.

The first three carbon budgets cover the following five-year periods: 2021 to 2025, 2026 to 2030, and 2031 to 2035 (although the budget for the third period is provisional). All greenhouse gas emissions and all relevant sectors are included in the carbon budgets.

They are as follows:
2021-2025: 295 Mt CO2 eq. an average of -4.8% for the first budget period.
2026-2030: 200 Mt CO2 eq. an average of -8.3% for the second budget period.
2031-2035: 151 Mt CO2 eq. an average of -3.5% for the third provisional budget.

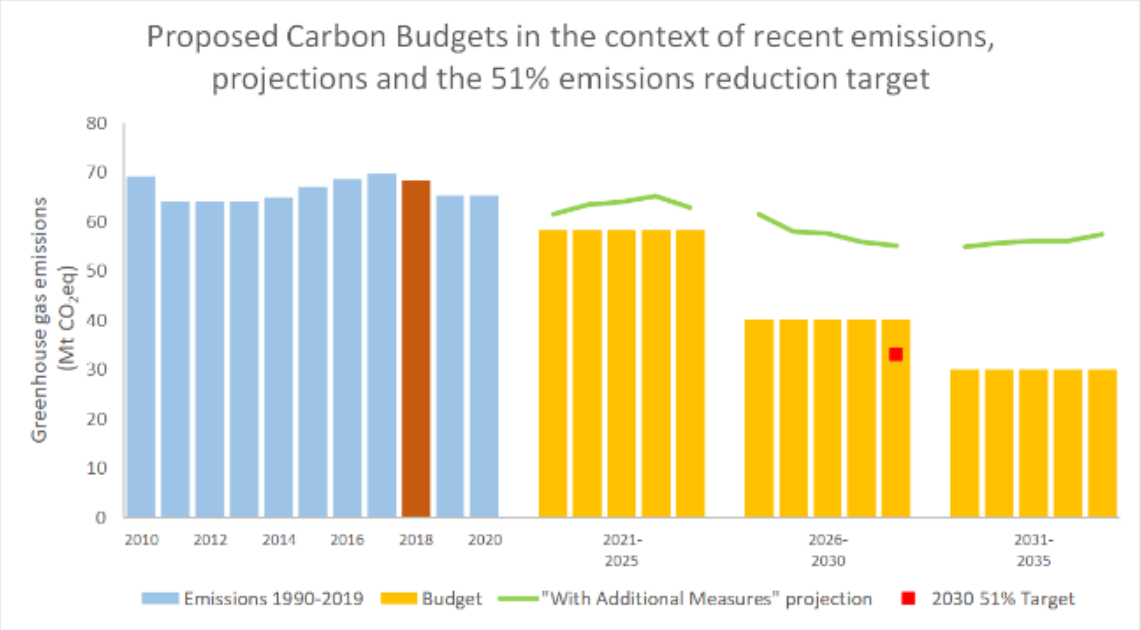


Figure 16 Carbon Budgets

The above graph represents the proposed carbon budgets in the context of recent historic emissions, and the EPA "With Additional Measures" projections of emissions based on the implementation of the 2019 Climate Action Plan.

In 2018, Ireland's emissions could be broken down by sector as follows:

SECTOR	IRELAND	EU

Energy	**54.2%**	**82.3%**
Industrial Processes	**4.7%**	**9.4%**
Agriculture	**32.6%**	**11.0%**
Land Use, Land Use Change and Forestry	**7.0%**	**-6.4%**
Waste	**1.4%**	**3.7%**

Relevance & Impact

Progress on staying within our carbon budgets will determine policy direction and actions needed.

LA CCAP Guidelines

Under the Climate Action and Low Carbon Development (Amendment) Act 2021, each local authority is required to prepare a local authority climate action plan for its administrative area. The plans are to be consistent with the most recent climate action plan and national adaptation framework. A set of statutory guidelines assist in the development of the local authority climate action plans, ensuring a consistent approach across local authorities while allowing for tailoring where required. The plans are to address, and integrate, mitigation of greenhouse gases, climate change adaptation and strengthened alignment with national climate policy, delivering effective local climate action.

Relevance & Impact

The guidelines provide direction for local authorities in the development and implementation of their climate action plans.

National Adaptation Framework

The National Adaptation Framework provides the policy context for a strategic national adaptation response to climate change in Ireland. Under the Framework, the relevant Government Departments, Agencies and local authorities prepare sectoral and local adaptation plans. A second iteration of plans will be prepared under a new NAF approved in June 2024. The National Adaptation Framework sets out the national strategy for the application of adaptation measures by a local authority in its administrative area to reduce the vulnerability of the State to the adverse effects of climate change and avail of any benefits that may occur.

Relevance & Impact

Local authorities need to engage in the development and implementation of the sectoral adaptation plans. This is essential to achieving a systems approach and coherence across the sectors.

National Waste Management Plan for a Circular Economy

The National Waste Management Plan for a Circular Economy has been prepared by the Local Government Sector arising from its obligations under the Waste Management Act. The Plan sets out a framework for the management of waste for the period 2024 – 2030 and adopts the Ambition of 0% Waste Growth for every individual each year for the lifetime of the plan. The Plan sets out targets for the reduction of waste from households, businesses, and the construction sector and includes targets for improved compliance on the segregation of waste and the reuse and repair of materials.

Core Policy 2 of the Plan relates to Climate Action and supports the delivery of the measures and actions prescribed in the Climate Action Plan to contribute to achieving the national climate targets. Circularity is a key driver of the National Waste Management Plan and is a common denominator across all sixteen focus areas in the Plan with associated targeted policies and priority actions for implementation.

Relevance & Impact

The National Waste Management Plan for a Circular Economy is where circularity meets climate action and where the benefits of improved practices on waste prevention and management will contribute to the achievement of Ireland's climate targets over the coming years. More work in this area is needed and progressing projects like A Connected Circular Economy, play a role in increasing the rate of circularity in all sectors to reduced "wasted" emissions.

Housing for All - a New Housing Plan for Ireland' (2021)

'Housing for All - a New Housing Plan for Ireland' is the government's housing plan to 2030. It is a multi-annual, multi-billion euro plan which will improve Ireland's housing system and deliver more homes of all types for people with different housing needs.

The government's overall objective is that every citizen in the State should have access to good quality homes:

- to purchase or rent at an affordable price
- built to a high standard and in the right place
- offering a high quality of life

The government's vision for the housing system over the longer term is to achieve a steady supply of housing in the right locations with economic, social and environmental sustainability built into the system. It is estimated that Ireland will need an average of 33,000 new homes to be provided each year from 2021 to 2030. The policy has four pathways to achieving housing for all:

- supporting home ownership and increasing affordability
- eradicating homelessness, increasing social housing delivery and supporting social inclusion
- increasing new housing supply
- addressing vacancy and efficient use of existing stock

The pathways contain actions to be taken by government departments, local authorities, State agencies and others. The pathways are supported by actions to enable a sustainable housing system.

Relevance & Impact

Dublin City Council is the largest landlord in the country and is simultaneously through the planning system a key stakeholder in the delivery of housing. Recognising that an existing building is the lowest carbon building DCC is prioritizing retrofit of existing social housing and adaptive re-use to meet the demand for housing, while insuring low carbon construction. Notably the primary industrial activity within the city's administrative area is cement production. Supporting this sector to shift to circularity, for example, ash from the Waste to Energy facility is provided to cement companies, and reduce energy use is critical.

Building Control Acts

The Regulatory Framework for Building Control includes the Building Control Acts 1990-2014, Construction Products Regulations, Market Surveillance and Energy Performance in Buildings Regulations. The purpose of regulation in a civilised society is for the health and safety of the citizen and the protection of the environment.

Relevance & Impact

In this context the purpose of the National Building Control and Market Surveillance Office (NBC&MSO) is to promote a culture of compliance with the building and construction products regulations through a five-pillar programme which includes:

- Education and training -31 building control authorities, professions and stakeholders involved in the building process.

- Inspections for Compliance and Enforcement of these regulations; the EU Energy Performance in Buildings Regulations and Construction Products Regulations EN standards system. We are using the latest innovative technology, i.e., Drones.
- Compliance Support through a customer relationship management system.
- Project managing the National Information System to administer building control in Ireland, i.e., the Building Control Management System, which is a bespoke system designed by this Office
- Market Surveillance of Construction products for which the Office is the national designated authority or regulator; and contact in Europe for coordinated enforcement and international cooperation; a member of the Union Product Compliance Network and a member of the EU administrative cooperation groups for CPR.

Dublin City Council is the host local authority of NBC&MSO

National Biodiversity Action Plan

Ireland is home to globally important populations of birds, fish, mammals, invertebrates, plants and fungi across a wide range of terrestrial, freshwater and marine habitats. The seas and coasts surrounding our island support vast colonies of seabirds, abundant fish and cold-water coral reefs, whales and dolphins, as well as rich algal and invertebrate communities. On land, there is a wealth of species in our mountains, peatlands, turloughs, woodlands, grasslands, lakes, rivers, and coastal habitats. Over 31,000 species have been recorded in Ireland and its surrounding seas and many more have yet to be discovered.

Relevance & Impact

Action for biodiversity has increased significantly in recent years, with a strong emphasis being placed on collaboration with landowners and local communities to enable a collective response to the challenge. A wide array of initiatives, projects and funding streams are delivering positive change for a range of habitats and species all across the country. Many actions for biodiversity are focussed on accelerating the restoration agenda and promoting the sustainable use of biodiversity. This will increase the resilience of biodiversity to climate change and support achieving the targets in the Biodiversity Climate Change Sectoral Adaptation Plan required under the National Adaptation Framework.

At EU level, the Multiannual Financial Framework (2021-2027) sets the ambition to provide a minimum of EU annual spending to biodiversity objectives, starting with 7.5% in 2024 and at least 10% in 2026 and 2027. It is recognised that biodiversity action within the EU requires at least €20 billion per year stemming from 'private and public funding at national and EU level', of which the EU budget will be a key enabler. This funding will be delivered through existing programmes such as the European Agricultural Fund for Rural Development (EAFRD), the Recovery and Resilience Facility (RRF), the European Regional and Development Fund (ERDF), the EU LIFE Fund and the Horizon Research and Innovation Fund

National Policy Statement on the Bioeconomy

As part of Project 2040, and following a public consultation process the government published the first National Policy Statement on the Bioeconomy in March 2018.

Through this commitment the government recognises that the bioeconomy is crucial for decarbonisation, sustainability and circularity, while also providing an impetus to competitiveness and rural and regional development and employment.

Relevance & Impact

The key actions needed to expand the bioeconomy, as set out in the National Policy Statement, include:
promoting greater coherence between the many sectors of the bioeconomy
strengthening the development of promising bio-based products and growing the relevant markets for them
accessing funding available at EU level as well as leveraging private investment

Food Vision 2030

The Food Vision 2030 Strategy is a new ten-year Strategy for the Irish agri-food sector (taken to include primary agriculture, food and drink processing and manufacturing, fisheries, aquaculture and fish processing, forestry and forestry processing and the equine sector).

Its vision is that Ireland will become a world leader in Sustainable Food Systems (SFS) over the next decade. This will deliver significant benefits for the Irish agri-food sector itself, for Irish society and the environment. In demonstrating the Irish agri-food sector meets the highest standards of sustainability – economic, environmental, and social – this will also provide the basis for the future competitive advantage of the sector.

By adopting an integrated food systems approach, Ireland will seek to become a global leader of innovation for sustainable food and agriculture systems, producing safe, nutritious, and high-value food that tastes great, while protecting and enhancing our natural and cultural resources and contributing to vibrant rural and coastal communities and the national economy.

The Strategy consists of 22 Goals, grouped into four high-level Missions for the sector to work toward:

A Climate Smart, Environmentally Sustainable Agri-Food Sector
Viable and Resilient Primary Producers with Enhanced Well-Being
Food Which is Safe, Nutritious And Appealing, Trusted And Valued at Home and Abroad
An Innovative, Competitive and Resilient Agri-Food Sector, Driven by Technology And Talent

Relevance & Impact

The city plays a role in the food system and has developed a food strategy, Edible Dublin, with consideration to Food Vision 2030.

Ireland's International Climate Finance Roadmap (2022)

Ireland's International Climate Finance Roadmap is an integral aspect of Ireland's climate policy, foreign policy and development cooperation. It forms part of Ireland's contribution to the implementation of the Paris Agreement, Agenda 2030 and the 17 Sustainable Development Goals (SDGs) as we seek to deepen our partnerships towards an effective and concerted response to the global climate crisis. Ireland's climate finance contributes to the primary objective of Ireland's International Development Policy, A Better World, to reach the furthest behind first and to channel support to those most at risk of being left behind.

Ireland's International Climate Finance is primarily grant-based and targets developing countries that are most vulnerable to the impacts of climate change, mainly through supporting climate adaptation actions. It is chiefly provided by the following Government Departments: Department of Foreign Affairs; Department of Finance; Department of the Environment, Climate and Communications; and Department of Agriculture, Food and the Marine. Ireland's international climate finance is provided through the following primary channels: bilateral, via Irish Aid programmes at Embassy level; multilateral, via international climate and environment funds, Multilateral Development Banks (MDBs) and International Financial Institutions (IFIs); and via Civil Society Organisations (CSOs) working in developing countries.

Relevance & Impact

Understanding the landscape of finance in Ireland is necessary to identifying the levers needed for insuring adequate finance to achieve climate action. There is potential to learn from our development aid policies to apply within Ireland.

Smarter Travel – A Sustainable Transport Future

Published in 2009, Smarter Travel – A Sustainable Transport Future set out a vision for transport to 2020 centred on the following key goals: (1) to reduce overall travel demand; (2) to maximise the efficiency of the transport network; (3) to reduce reliance on fossil fuels; (4) to reduce transport emissions; and (5) to improve accessibility to transport. Policy instruments in the sector can be divided into the categories of regulation, economic and fiscal instruments, information and education, and investment.

Relevance & Impact

Smarter Travel plays a key role in reducing emissions associated with the transport sector, specifically in relation to behaviour.

Regional Level Policy

Greater Dublin Area Transport Strategy

The Transport Strategy for the Greater Dublin Area, 2022-2042 has been prepared and published by the National Transport Authority in accordance with Section 12 of the Dublin Transport Authority Act, 2008.
It sets out how transport will be developed across the region, covering Dublin, Meath, Wicklow and Kildare, over the period of the strategy and has been approved by the Minister for Transport in accordance with the relevant legislation.

Relevance & Impact

The Transport Strategy plays a key role in reducing emissions associated with the transport sector.

Greater Dublin Drainage Strategy

Greater Dublin Drainage (GDD) is a project to develop a new regional wastewater treatment facility and associated infrastructure to serve north Dublin and parts of the surrounding counties of Kildare and Meath.
As our population and economy grows, so too does the volume of wastewater. The amount of wastewater generated in greater Dublin is projected to increase by over 50% in the period to 2050. We must collect and treat this wastewater so that the treated water can be safely returned to the environment.

Relevance & Impact

GDD represents the next major step in the development of our wastewater infrastructure for Dublin and the surrounding counties. Once operational, the GDD project will have the capacity to provide wastewater treatment for the equivalent of half a million people living and working in this area.

GDD is a key part of Uisce Éireann's investment in new wastewater infrastructure in greater Dublin and will protect public health, safeguard our environment and facilitate growth to 2050.

Regional Spatial Economic Strategy

The primary statutory objective of the Strategy is to support implementation of Project Ireland 2040 – which links planning and investment through the National Planning Framework (NPF) and ten- year National Development Plan (NDP) – and the economic and climate policies of the Government by providing a long-term strategic planning and investment framework for the Region.

Relevance & Impact

The RSES has been implemented in policy by way of review by local authorities in the region of all City and County Development Plans and Local Economic and Community Plans (LECPs), to ensure their consistency with national and regional policy. Key state agencies and sectoral bodies are also required to consider their strategies and investment plans in light of the adoption of the RSES.

Dublin Region Air Quality Plan 2021

The four Dublin Local Authorities – Dublin City Council, Dún Laoghaire-Rathdown County Council, Fingal County Council and South Dublin County Council are committed to protecting and enhancing air quality across the Dublin region. The exceedance of the EU limit value for nitrogen dioxide in the Dublin region in 2019 necessitated the preparation of the Dublin Region Air Quality Plan 2021 -Air Quality Plan to improve Nitrogen Dioxide levels in Dublin Region.

Relevance & Impact

This air quality plan sets out 14 broad measures and a number of associated actions to address the exceedance of the nitrogen dioxide annual limit value. In summary these are as follows:

- Measure 1 Integrate "15 Minute Neighbourhoods" concept in City and County Development Plans Action: Dublin local authorities to adopt as appropriate
- Measure 2 Public Parking Controls Action
- Measure 3 Residential Parking Standards Action:
- Measure 4 Workplace Parking Standards
- Measure 5 Continued Delivery of the Active Travel Programme Action:
- Measure 6 Electrical Vehicle (EV) Charging Strategy Action:
- Measure 7 Publication of National Clean Air Strategy Action:
- Measure 8 Air Quality Enabling legislation Action: The Dublin local authorities will advocate to the relevant government department for enhanced legal powers in respect of air quality management be delegated to them.
- Measure 9 Introduction of Clean Air Zones/ Low Emission Zones Action:
- Measure 10 Remote/Flexible Working Action: Implementation of National Remote Work Strategy.
- Measure 11 Enhanced Air Quality Monitoring and Modelling Action:
- Measure 12 Air Quality - Citizen Engagement Action: Dublin City Council to establish public dashboard on Airview study results for Dublin City Action: Dublin local authorities to explore with other stakeholders such as An Taisce, or the Asthma Society on the establishment of a public consultative process or forum on air quality.
- Measure 13 Air Quality and Health Research Action: Dublin local authorities to formally engage with research teams on their emerging findings and to collaborate on the formulation of practical measures and guidelines from this research.
- Measure 14 Behavioural Change Campaigns to cleaner fleets Action: Commuter/Travel surveys carried out by public bodies to include determining public attitudes towards air quality measures and commuting behaviour.

Noise Action Plan for the Agglomeration of Dublin

The plans set out how the Council deals with local noise nuisances and complaints along with planning, development and traffic management issues in addition to the identification of priority areas and measures to help mitigate and manage noise from the relevant human activities contributing to the noise levels at those locations. In addition, the noise action plan also assesses the impact of noise on Quiet Areas [existing or new] and considers the measures that may be required to maintain sound quality at these sites. The plans do not, however, cover noise in relation to health and safety in the workplace, noise inside any means of transport, noise caused by military activities in military areas or noise from natural environmental sources, i.e. wind, waves, wildlife.

City Level Policy

There are a range of plans, projects and initiatives that are interconnected and will contribute to our climate neutrality objectives. The relationship between these plans is illustrated by Figure 17 here at a high level the statutory plans must align with each other and inform the non-statutory plans. Statutory plans are required to go through a public consultation process. Going beyond the requirements DCC holds workshops and webinars to engage people and elicit their views.

Figure 17 Relationship between statutory and non-statutory plans

Cross Sectoral:

DCC Corporate Plan

Dublin City's Corporate Plan puts forward our vision and mission for both the City, and Dublin City Council, as an organisation and the principles by which we will be guided in all elements of our work on climate action. Our vision and mission in the Corporate Plan for 2020-2024 were:

> Our Vision: A dynamic, sustainable city, that is future-ready, built on thriving, inclusive neighbourhoods and communities, a strong economy, a vibrant cultural life, and compact, connected growth.
> Our Mission: To drive the sustainable development of the City through strong civic leadership and delivery of effective services that promote the well-being and quality-of-life of citizens and communities.

The Corporate Plan for 2025-2029 is currently being developed.

Land- Use Planning: City Development Plan 2022-2028

The Dublin City Development Plan (2022-2028) is a plan which sets out how the city will develop to meet the needs of all residents, workers and visitors. The aim of the plan is to improve the quality of life for its citizens, and make sure that Dublin City is an attractive place to live, work and visit. The plan's policies and objectives:

- guide growth and development,
- provide a strategy to achieve proper planning, and
- Show how we will achieve sustainable development that is development that meets our needs now and won't comprise future generations meeting their needs.

Sustainable land use and compact growth are at the core of current national and regional planning policy in Ireland. The National Planning Framework (NPF) is the Government's high-level strategic vision for shaping future growth and development in the country. The NPF seeks more concentrated growth with 50% of overall national growth to be targeted towards the five main cities, including Dublin.

The NPF Strategy aims to support the future growth and success of Dublin as Ireland's leading global city of scale, by managing growth. The NPF projects that Ireland's population will increase by 1 million by 2040, of this approximately 25% will be in Dublin City and its suburbs. Managing this requires compact, smart, sustainable growth with 50% of new city housing constructed within the existing footprint of the city.

In response to this the Dublin City Development Plan 2022-2028 sets out key policies and objectives to:

- promote the ongoing development of key undeveloped urban sites within the city
- Reduce urban sprawl to outlying counties.
- consolidate and regenerate key sites identified as Strategic Development and Regeneration Areas (SDRA)
- Manage growth through the ongoing consolidation of existing urban lands and infill development
- Target development of key regeneration sites and lands served by existing and planned public transport.

Specifically, our strategic approach to land use is based on the following principles:

- To ensure that land-use zoning across the city spatially facilitates the aims of the core strategy and the objective to develop a compact, connected, low carbon, and climatically resilient city.
- To ensure that land is appropriately zoned in order to accommodate the expected growth needs of Dublin City within the lifetime of the plan and to ensure the protection of community and social infrastructure, and critical ecosystems services, through the application of appropriate land-use zoning designations in order to provide adequate facilities and amenities to meet the growing needs of the city.
- To provide for balanced and sustainable development by promoting, in particular, a mixed-use pattern of development with a move away from more traditional forms of single mono-use zoning.
- To ensure that the most efficient use is being made of the city's land in line with the principles of the 15-minute city, and that the redevelopment of under-utilised and brownfield land is promoted in order to consolidate and add vitality to existing centres.
- To promote the intensification of development adjacent and close to public transport nodes and corridors in order to minimise trip generation and distribution and to promote sustainable compact urban form.
- To ensure that the city's zoned enterprise and employment lands are integrated with key supporting infrastructure to provide for more intensive forms of employment.

The Dublin City Development Plan 2022-2028 can be found here:

Critically a new requirement of planning permissions is the provision of Climate and Energy Statements:

Climate Action Energy Statements: In order to ensure that all future development integrates the principles of energy efficiency in the built environment and the use of efficient and renewable sources of energy, all applications for significant new developments, or for significant refurbishment projects, shall be required to submit a Climate Action Energy Statement as part of any overall design statement for a proposed development. This statement shall also provide outline information relating to the anticipated energy performance and CO2 emissions associated with the development as well as information outlining how the potential of district heating and other low carbon energy solutions have been considered in relation to the development.

This is facing challenges due to our GHG baseline lacking detail. This is the reason a detailed baseline is a priority. A detailed picture of emissions across the city, will enable us to assess the climate and energy statement received in a manner that ensures land use decisions align with our emissions targets and ensure that developers use renewable sources, follow circular economy principles, and sequester carbon through appropriate planting.

Supported within the city development plan are strategies that strive to increase the green cover of the city. The Greening Strategies for the Liberties, Stoneybatter, the North East Inner City (NEIC), and the Grafton Street Quarter (Heart of Dublin Public Realm); were specifically developed as these are areas where there are significant deficits of green space, for example in the Liberties, there is 0.7m2 per person, in Stoneybatter, there is 1.6m2, and in the North East Inner City, there is 1.89m2. The recommended amount is 20 to 25 m2. As such, increasing the amount of green space in these areas is essential. Works are ongoing in these areas and have been well accepted by the public. Two strategies are in the process of being implemented in the last 5 years, namely the Liberties Greening Strategy, which was published in 2015, and the NEIC Greening Strategy in 2018.

On foot of these strategies in the last four years, four new parks have been introduced into the city centre: Bridge foot Street Park, Wolfe Tone Square, Diamond Park, and James's Walk linear park. During this time upgrades have been undertaken in existing parks in line with the city's play strategy.

It is notable that our emissions baseline does not account for the increase in green cover across. As such we are working with academic partners to better understand not only the carbon sequestration potential but the improvements in air quality and water quality.

RELATED ACTIONS IN CND 2030:

R1-R4

Key co-creators:

Citizens, developers, Department of Housing, Local Government and Heritage, Eastern Midlands Regional Authority,

Edible Dublin Food Strategy:

Growing from Eat the Streets Festival, Edible Dublin is an initiative by Dublin City Council that will set out how we feed a City in a time of climate change. This strategy will follow the principles of a just transition; enabling us to work towards a city where all residents of the City have equitable access to nutritious food for their health and well-being, now and in the future.

Through this strategy we aim to: 1. Enable knowledge exchange between rural and urban areas, and between generations; 2. Work to improve food skills and knowledge, in addition to building a greater understanding amongst the public and businesses of food production, preparation, distribution and waste prevention; 3. Improve the health and wellbeing of the City's residents through better access. All of which will contribute to making the City and its residents resilient to climate change impacts on the food system.

To accomplish this, the strategy has developed four action areas:

- Healthy Citizens, Healthy City
- Growing Food Around Us
- Cooking, Creating, Discovering
- Farm to Fork and Back – Stopping Food Waste

FROM EAT THE STREETS *TO* EDIBLE DUBLIN

Comhairle Cathrach Bhaile Átha Cliath
Dublin City Council

SUMMARY:

Growing from Eat the Streets, the Edible Dublin Food Strategy is a key action in Dublin City's climate action plan - Climate Neutral Dublin 2030. To nurture knowledge exchange, Edible Dublin's actions are based on four pillars:

1) Healthy citizens, Healthy City
2) Growing Food at Home
3) Cooking and Creating
4) Farm to Fork and Back

ACTORS:

Dublin City Council is collaborating with: Safe Food, the Health Service Executive, the Eastern Midlands Regional Waste Management Office, chefs, businesses, academia, Fáilte Ireland, Community Roots, Spade Enterprise Centre, Dublin Food Chain, Bee8, Grow It Yourself, Airfield Estate, Pocket Forests, Comhairle na nÓg, Environmental Protection Agency, Food Cloud to realise a climate resilient food system that supports health and well-being.

SUCCESS & IMPACT:

Edible Dublin is the first food strategy to be adopted by Dublin City Council. Recognising that we all need to eat, Eat the Streets and Edible Dublin, have taken a creative approach to strengthen our relationship with food, that has nurtured a greater understanding and appreciation of where our food comes from, the impacts of our food waste and our dependence on the natural world around us.

CHALLENGES & OPPORTUNITIES:

Realising the Edible Dublin Food Strategy was possible because of opportunities that emerged from Eat the Streets. Dublin City is part of Milan Urban Food Policy Pact, UAEU (Urban Agenda for EU) Thematic Partnership on Food and CULTIVATE, participation in these initiatives provided the City Council with opportunities to exchange knowledge and share cultural stories and practices, that allowed the City Council to move forward and include food resilience as an essential climate action.

NEXT STEPS:

The Eat the Streets Festival is an important part of Edible Dublin's development process and its ongoing implementation by providing an opportunity for local food enterprises and thought leaders to connect with the community and grow, cook, create and discover together. The City needs to continue to the grow Eat the Streets beyond the festival, into a year round programme to provide opportunities in every season.

Figure 18 Eat the Streets to Edible Dublin

Community Climate Action Programme

Our Community Climate Action Programme demonstrates carbon reduction, community cohesion, enhanced climate resistance and better use of resources at the community level. The programme also demonstrates how knowledge support can strengthen the capacity for climate action and belief amongst our most disadvantaged communities that they can deliver positive changes in their own community.

With funds received from the Department of Climate and Communications, Dublin City Council will help community groups develop bespoke climate action projects which aim to reduce greenhouse gas emissions, build climate resilience and transition to a lower carbon economy. Communities receive 100% funding for projects up to €100k in value, with communities encouraged to take a holistic approach to their actions by focusing on five thematic areas; Community Energy, Travel, Food and Waste, Shopping and Recycling (circular economy) and Local Climate and Environmental Actions (nature-based solutions).

Citizen's challenges with CCAP

There is no 'one size fits all' when working with community groups. They can have different structures, knowledge base, experience, ambition and capacity to deliver projects.

Groups also have very different motivations; in respect of the Community Climate Action Programme these emerged as either a desire to save money, an opportunity to enhance community services or forward climate/nature related interests. Occasionally groups were driven by two and very rarely all three motivations.
In order to deliver the best possible outcomes, it is essential to have a complete understanding of each community group, their motivations, limitations, ambitions and their ability to deliver on their action projects. It may also be necessary to provide additional supports to help them achieve their aims.

Dublin City Council is committed to ensuring a just transition; we provided a grant writer with knowledge of the climate challenge and experience of community needs/desires and their limitations and who had the ability to communicate effectively. This was in addition to the services offered by the Community Climate Action Officer. The grant writer helped communities translate their ambition and desires into climate related actions and advised how these actions would support local and national targets.

Upon the successful awarding of funding specific community groups were offered additional supports in the form of a community champion with past experience in delivering projects, who would meet regularly with the community to help strengthen their understanding of climate change and provide advice and support to effectively manage their projects.

In delivering the Community Climate Action Programme we have identified barriers that led to groups failing to make an application or questioning their ability to deliver a project. These include but are not limited to the following; technology, primarily setting up an online account, saving or uploading information and not being able to view the application in full, confusion over what the application form was seeking, a lack of understanding of the climate challenge and how their proposed actions contribute to adaptation or mitigation, English as a second language or poor literacy skills, time availability due to other commitments, lack of strategic thinking when planning project delivery, limited mentoring support, funding challenges, primarily based on the model presented by the funding body which did not support the delivery of many of the actions or required volunteer groups to secure bridging loans and the ability or perceived ability of groups to deliver what can be a complex set of actions.

The Community Climate Action Programme is a strong model for engaging community groups and allowing them the opportunity, with support where necessary, to design bespoke climate action projects. For many this is the first time they have considered engaging in a climate action project and with the right model we can build their understanding of climate change and the actions needed to adapt to and mitigate against the likely impacts. In addition to implementing essential actions we will also strengthen our communities and by saving money these communities will be inspired to explore more opportunities to take climate action and in

time and with the right funding opportunities, we can help lead our 'Climate Blind' communities towards becoming low carbon climate neutral communities.

Transport

Dublin City Centre Transport Plan 2023

Recognising that transport patterns are intertwined with land use patterns, and there is a need to ensure that places of employment, education, leisure and housing are well connected by high quality active travel routes and public transport to reduce emissions; DCC in partnership with the National Transport Authority, have published the draft Dublin City Centre Transport Plan 2023. The publication of this plan meets an objective of the Dublin City Development Plan 2022 -2028 which was adopted by the elected members in November 2022, and of the Transport Strategy for the Greater Dublin Area, as approved by the Minister for Transport in December 2022.

For transport DCC has set out very challenging and ambitious targets to be achieved, including a 40% reduction in general traffic and significant increases in walking, cycling and public transport. This will be achieved through reducing traffic in the city centre and shifting the design of the city centre so that public transport, walking and cycling being prioritised. The plan draws lessons from the response to the Covid pandemic whereby low traffic volumes allowed very ambitious changes to be undertaken in areas such as Capel Street, Nassau Street and along the North and South Quays. The traffic management changes envisaged as part of this plan aim to significantly reduce volumes of car traffic in the city centre, opening up space for the sustainable modes, and significantly improving the public realm by allowing greening and the development of new public spaces for residents, workers and visitors to the city centre.

RELATED ACTIONS IN CND 2030:

S1 – S4

Key co-creators:

Citizens, developers, Department of Housing, Local Government and Heritage, Eastern Midlands Regional Authority, National Transport Authority, advocacy groups

Public Realm Plans

In addition to our city centre transport plan, Dublin city has a number of public realm plans to College Green Plaza that will support active travel plans and greening strategies across the city.

Greenway – Dublin Port

In 2024 a cycle and pedestrian greenway was created in the Northern Part of Dublin Port which offers viewing points overlooking the Tolka Estuary. Mature pine, willow and sycamore trees have been retained along the route and 200 specimen trees and over 5000 smaller trees and wildflowers plants added to create a new linear park with the intention of connecting visitors to our natural heritage, another 800m section will be added by 2026 and plans are in place to continue the green to link with a similar feature on the Southern end of the port.

DART+ Programme Update

DART+ is the transformative programme that will ensure train travel is at the heart of Ireland's sustainable transport network. Funded under the National Development Plan by the National Transport Authority, DART+ is an investment that will double the capacity and treble the electrification of the Greater Dublin Area network, facilitating sustainable mobility and development to enhance quality of life in our capital and its surrounding counties. The overall programme will provide electrification of lines on DART+ West to Maynooth/M3 Parkway, on DART+ South-West to Hazelhatch and DART+ Coastal North to Drogheda. DART+ Coastal South will also see key infrastructure works as far as Greystones to allow more trains to operate.

The first new electric/battery DART trains are set for service in late 2024. These trains will use electrical charge as far as Malahide at which point they will convert to battery power as they continue as far as Drogheda where they will be recharged ready for the return journey. These trains will replace the diesel trains currently operating on this route.

Freight access from the hinterland is primarily achieved via road transport. With Irish Rail seeking to electrify its fleet which will reduce noise as well as pollution opportunities may exist to transport more goods via rail.

The Dublin Coastal Trail encourages visitors to explore the unique coastal towns and villages and engage with the wide variety of experiences on offer such as taking a boat tour on the bay, sampling local food or discovering a new location with a guided tour. The trail takes in a wide range of scenic features we have bordering our beautiful Dublin Bay; whether it be the Bull Island Nature Reserve, a haven of local and visiting wildlife, the cultivated charms of St. Anne's Park and Rose Gardens, or the historically rich treasure trove of Sandymount Strand, the Great South Wall and the Poolbeg Lighthouse all accessible to everyone from across the region by our DART and Commuter services.

Built Environment *:*

Local authorities in Ireland provide social housing to individuals and families based national policy, set by the Department of Housing, Local Government, and Heritage. Specifically, the National Planning Framework (NPF) and the Regional Spatial Economic Strategy (RSES) emphasise the importance of achieving compact sustainable growth and accelerated housing delivery while promoting people's quality of life through 'healthy place-making'. It is a National Policy Objective (NPO 4) to "ensure the creation of attractive, liveable, well designed, high quality urban places that are home to diverse and integrated communities that enjoy a high quality of life and well-being". The NPF focuses on the link between public health/ community wellbeing and the physical design of the environment, recognising that health can be influenced by decisions on land use and the layout of the built environment.

Further, fostering sustainable communities is also an objective of the government's 'Housing for All - a New Housing Plan for Ireland' (2021), through government reforms of Part V and developing new guidance on achieving the most appropriate tenure mix within communities and new guidelines for Local and Economic Community Plans. Additionally, the National Climate Action Plans has set an objective of retrofitting social housing stock to a BER B2 or cost optimal to meet our National Climate Objective

As the largest landlord in the country, with a stock of 214 flat complexes and 10,000 houses, Dublin City Council has acknowledged that while it will be challenging to meet housing targets and climate targets simultaneously, this is an opportunity to demonstrate and set the standard for sustainable living. We will build on our experience with energy retrofitting to prepare our housing for climate change. Our flagship project will be Lower Dominick Street West. The first phase of this project involved the creation of digital twin to assess how we could meet national ambitions. Specifically, the national ambition to achieve a retrofit of 500,000 homes, and 36,000 social housing homes by 2030 may have higher carbon emissions costs if we do not fully consider embodied carbon and life cycle carbon. Dublin City's social housing presents an opportunity to fully understand the options available to us to achieving this retrofitting target at the least cost to the state, while meeting the immediate and pressing demand of providing social housing. The results of the digital twin demonstrated that deep retrofit represents both the least cost terms of capital and carbon. Building on this work, the second phase of this project will demonstrate climate resilient housing retrofit that enables and encourages residents to live sustainably with ease through the provision of, for example: green spaces to grow, play and create; shared spaces to meet and innovate; segregated waste facilities, renewable energy generation (solar PV, geothermal and micro wind generation where feasible), and mobility options (shared bikes, micro mobility and EV charging).

Beyond our own buildings key public sector bodies such as the *Office of Public Works, Health Services Executive, and Third level institutions*, have buildings (and operations) in the city that they must decarbonise, under the public sector energy efficiency programme. Since 2010, public sector bodies are required to report their energy management and performance data annually to SEAI. This was formalised under SI 426 of 2014. Reporting energy use requires that public sector bodies report energy management and performance against a baseline year. Data is provided for an annual cycle and entered into the M&R, covering consumption by fuel type and drivers of demand. This information is then verified and validated by

SEAI assessors and used to produce a scorecard on savings performance for the year and for the 2020 target.

Dublin City Council's Building control team ensure that technical construction standards are applied and met, and as such are able to ensure that private residential and commercial buildings achieve meet building performance directives. Further, for existing buildings in need of retrofit Dublin City Council through Sustainable Energy Communities is able to drive private residential and commercial retrofit. Communities across the city are able to receive funding through Dublin City Council to development energy master plans that will help decarbonise their communities. Several of the city's SECs have gone beyond energy and have developed biodiversity plans and circular economy plans for their communities.

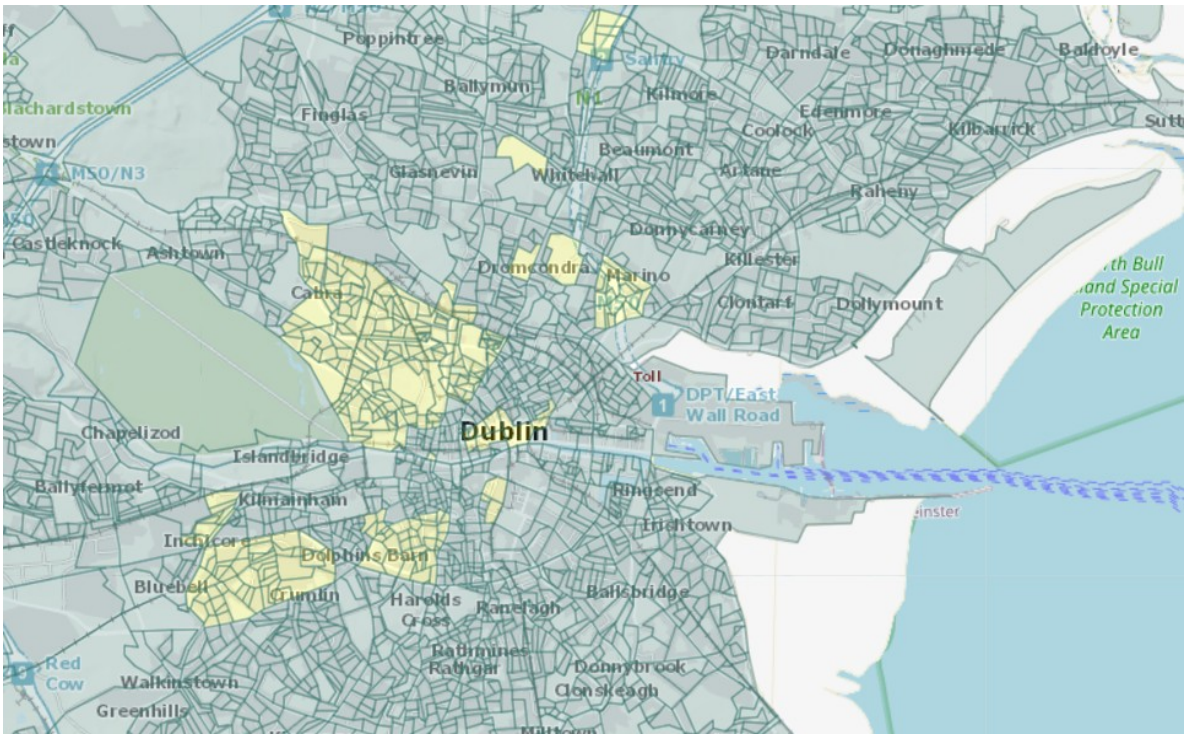


Figure 19 Sustainable Energy Communities in Dublin City

RELATED ACTIONS IN CND 2030:

R1-R2 – For the CCC R2 is all public buildings owned by other public sector bodies.
RF 3
S4

Key co-creators:

Citizens, developers, Department of Housing, Local Government and Heritage, Eastern Midlands Regional Authority, Irish Green Building Council, Royal Institute of the Architects of Ireland, Sustainable Energy Authority of Ireland (SEAI), Codema, Energy Supply Board (ESB), Office of Public Works, Health Services Executive, Trinity College Dublin, Dublin City University, Technical University of Dublin, University College Dublin.

Water Sector

Water Pollution Control, Drainage and Flood Alleviation

Since 2014 Uisce Eireann was established to address the disparities in water supply across the country.

The Environmental Protection Agency (EPA) is the regulator responsible for monitoring the quality of drinking water and enforcing drinking water quality regulations. Irish Water as the national utility is responsible for managing the delivery of water services to homes and businesses in Ireland. They are concerned with supply, quality and waste treatment. DCC is responsible for surface water drainage and flood management, and on the latter, we work with the Office of Public Works (OPW).

Water is supplied in Dublin on a Regional basis. The Region includes all of Dublin City and County and parts of Wicklow and Kildare. On a typical day, 540 million litres of water is collected from our rivers, cleaned, and made safe to drink at four main treatment plants. Three of these treatment plants are operated by Dublin City Council on behalf of Irish Water at Ballymore Eustace (Liffey), Roundwood (Vartry) and Ballyboden (Dodder). Treated water is delivered to the Region's 1.5 million customers through a series of service reservoirs and a network of 7,200km of underground pipes, of which over 2,400km are in the city. Most of our water is gravity fed however in some elevated areas pumping is required.

DCC continues to provide citizens with information on water and water conservation. Water conservation tips for domestic and commercial use are available on our website. Education on water treatment processes is also provided. The key message is that while Ireland may receive a high amount of rainfall, that water requires treatment before it can be consumed and there is a limited capacity. With climate change, our water supply is becoming more variable and as a result, DCC works closely with Uisce Eireann to ensure security of supply.

Ensuring security of supply requires maintaining water courses. To meet the Water Framework Directive (WFD) obligation of achieving 'good' status for all rivers, DCC has a number of ongoing projects to address both water quality and flood risk; these include a project to de-culvert the River Camac, restoring the river to a more natural state over time is beneficial. The project will also involve identifying and remedying urban pollution sources. This is also being done in conjunction with an existing Greenway proposal, in tandem with Urban Regeneration and Development Fund (URDF) funded projects in the area. There is another project to restore the River Santry to a more natural state that will increase carbon sequestration potential in the city, while protecting properties from flooding.

Climate change is impacting on rainfall patterns in Dublin, which were previously low intensity long duration type rainfall events but are now shorter and far more intensive. The existing drainage infrastructure was not designed to deal with this type of rainfall and, as a result, there have been a number of localised flood events in recent years.

In response to this, DCC Flood and WFD Division in liaison with the DCC Climate Action Team has agreed that a number of nature-based water retention measures will be used at different locations across the city. These will have the dual effect of reducing the rate of surface water runoff into sewers, thus reducing the risk of downstream and local flooding, as well as improving the water quality of that runoff. Additionally, all public realm projects will include nature-based solutions to mitigate flood risk. We have produced sustainable urban drainage guidance for developers and householders.

RELATED ACTIONS IN CND 2030:

R3
RF 2
S4

Key co-creators:

Citizens, Local Authority Water Programme, Uisce Eireann, Department of Housing, Local Government and Heritage, Regional Waste Prevention Office, Environmental Protection Agency

Waste:

Waste Policy is set by National Government and follows a polluter pays principle. Privatisation of waste removal occurred in 2012. In 2017, the Government announced a policy to discontinue the use of flat fees for household waste collection. The discontinuation of flat fees enables service providers to price services to

incentivize waste reduction and increased recycling. The government has established a Price Monitoring Group to monitor pricing throughout the implementation period and have agreed to an annual subvention payment to incontinence wear dependents.

The management and prevention of waste is undertaken by the EPA, regional offices, and local authorities. The EPA has a mandate through the Waste Management Act, 1996 to enforce laws related to environmental protection and to license waste facilities. The EPA collects and analyses waste data to monitor trends and inform policy. A recent national report on waste shows the following:

- Ireland generated 3.2 million tonnes of municipal waste in 2020, up 4 per cent from 3.1 million tonnes in 2019
- 1.3 million tonnes of municipal waste generated in Ireland was recycled in 2020, resulting in a recycling rate of 41%
- Of the municipal waste recycled in 2020, 959,100 tonnes went for material recycling (up 12 per cent on 2019) and 350,204 tonnes were composted (up 16 per cent in 2019)
- A rounded 1.4 million tonnes, or 42 per cent, of Ireland's municipal waste went for incineration with energy recovery in 2020.
- Ireland's landfill rate for municipal waste was 16 per cent in 2020, up slightly from 15 per cent in 2019.
- 39% of Ireland's municipal waste was exported for recycling or recovery in 2020.

It is evident that the reduction of waste is an ongoing challenge and DCC together with the EPA and its regional office, the Eastern-Midlands Waste Region (EMWR) must move towards a circular approach.

In this regard DCC has prioritized initiatives that promote the transition to circular economy through MODOS and is currently completing a feasibility study with Belfast City Council, investigating what is needed to create and support "A Connected Circular Economy" on the Island of Ireland that supports our collective transition to a zero waste and low carbon future.

DCC have developed specific programmes to support citizens in reducing their waste at the household and individual levels, for example:

- **Clothing Waste Prevention Pilot:** Waste Management Services have created a new textile waste project that aims to prevent good clothing from becoming waste and support the transition to a circular economy. A new guide on 'How to Organise a Clothes Swap' was written to assist anyone who wishes to plan their own clothes swapping event. Community groups are also invited to borrow a 'Clothes Swap Kit' containing the equipment, such as rails, signage boards and hangers, they may need to hold this type of event. The new guidebook can be viewed or downloaded at https://bit.ly/DCCClothesSwaps.
- **Bulky Household Waste Collection Service:** Dublin City Councils online bulky waste ordering system is now fully digital, and customers can now request and pay for a service collection 24/7 as the entire process is fully automated through the Citizen Hub Platform. Customers can now complete the ordering process from beginning to end including making secure payment without the need to go through our customer services department.

The City Development Plan also sets out the following in relation to constructions waste:

- **Waste Management Plans for Construction and Demolition Projects:** To have regard to existing Best Practice Guidance on Waste Management Plans for Construction and Demolition Projects as well as any future updates to these guidelines in order to ensure the consistent application of planning requirements.

RELATED ACTIONS IN CND 2030:

R3- R4
RF 3 – RF4
C1 – C2

Key co-creators:

Citizens, developers, Department of Housing, Local Government and Heritage, Eastern Midlands Regional Authority, Irish Green Building Council, Royal Institute of the Architects of Ireland, Regional Waste Prevention Office, Environmental Protection Agency, Rediscovery Centre

Economy and Society:

A core goal of the DCC corporate plan is 'To work towards achieving a green, low carbon city'. This aligns with national policy, Innovation 2020, which sets out Ireland's vision to become a Global Innovation Leader, driving a strong sustainable economy and a better society. DCC recognises that achieving this requires collaboration with citizens. There are several departments through which DCC promotes the growth of the green economy and innovation, namely the Transformation Unit, Economic Development Office and Local Enterprise Office (LEO), Smart Dublin and most recently the Community Climate Action Programme.

Local Economic and Community Plan 2024-2029

The LECP 2024 – 2029, for adoption in 2024, will set out the City's strategic goals for the City's local economy and community development, alongside yearly action-led implementation action plans. The focus of the LECP is on social and economic issues and goals that can be addressed by the City Council, local businesses, community and voluntary organisations and state bodies. The LECP is a key framework through which climate action interventions can be delivered.

DCC is in the midst of producing its statutory Local Economic and Community Plan (LECP). The LECP sets out high levels goals that drive the whole city's development. The LECP includes plans for the economic and community development of Dublin City. These two parts are interconnected and overlap in the high-level goals, objectives and actions. The overall aim of the LECP is to improve the quality of life and well-being of citizens and to develop and implement actions at a local level that will strengthen the community and economic dimensions of the City over a six-year period. The opportunity to have in-put into this early stage of the development of the Plan offers citizens and businesses the best chance of influencing the overall shape and outcomes of the Dublin City Local Economic and Community Plan and ultimately to ensure that Dublin City grows and develops in a manner that improves the quality of life for all who live, work, study in and visit the city now and in the future. The plan ensures effective utilisation of available resources, to support economic and community development initiatives in Dublin.

The Transformation Unit sits within DCC's Corporate Services and Transformation Department and is charged with the task of making DCC's services and operations more agile and responsive to a rapidly changing environment. The Transformation Unit oversees and drives a transformation programme for the organisation and works with departments who are implementing change. As part of its work, the Unit has undertaken a service mapping exercise which looks at how customers access services with a view to:

- Developing a corporate approach to service delivery.
- Standardising and simplifying processes.
- Reducing duplication and inefficiencies by clustering complimentary services.
- Prioritising services which should be delivered by the Customer Services Centre and,
- Prioritising services for online delivery.

Economic Development and LEO are focused on enabling businesses to thrive in Dublin. The LEO combines the expertise of Enterprise Ireland with the broad reach of the Local Authority. The LEO develops local enterprise plans putting micro and small business at the heart of job creation locally. New Protocols have been developed with key agencies, such as Revenue, Dept. of Social Protection, Education and Training Boards, Skillnets, Microfinance Ireland and the Credit Review Office to ensure citizens have access to all Government supports. Additionally, Economic Development focuses on providing guidance for new businesses and support for businesses in the city.

Social Enterprise Awards: DCC actively supports social innovation and social enterprise development. Most notably through the Dublin City Social Enterprise Awards.

Local Enterprise Week: DCC has sought to mainstream eco-innovation through hosting events during Local

Enterprise Week (LEW) and advocating that green growth and eco-innovation are on the agenda of supported event where possible. DCC has also sponsored and supported a number of relevant events. These include: Startup Weekend Sustainability (September 2018), and Fast Fashion Hack (February 2019). Partnerships: DCC has partnered with, and part funded the Profit with Purpose initiative which includes engagement and awareness raising, a Responsible Innovation Summit, a Business Spirit Award which highlights eco and social innovations among businesses, and the Profit with Purpose magazine.

Sustainable and Smart Tourism

Another area in which we are integrating climate action in to is our Dublin City Council Tourism Strategy 2023-2028. The strategy sets out the following

Dublin is the most important overseas tourism destination in the country and tourism is a central pillar of the city's economy. DCC recognises it plays a pivotal role in the ongoing development of the tourism industry for the city, but also as a driver for tourism nationally. We will use this responsibility to work to ensure that we expand our value proposition as we implement this tourism strategy for the city. In this strategy, we have widened the scope of who we believe the Dublin tourism experience should include, and created the mechanisms to ensure that many voices, neighbourhoods and activities have an active role in its implementation and success. This ambition is supported by the new Dublin City Council Development Plan 2022-2028.

Our Tourism Vision:

Dublin is a city where people, their places and the things they do are at the heart of a thriving and sustainable tourism offer. Visitors can include anyone, from anywhere, and **tourism** in Dublin can happen anywhere and be about anything. **People** value tourism as an important part of our social, cultural, environmental and economic health and experience Dublin as a **safe** and **clean** city where all visitors can connect to its many people, places and stories.

Our Tourism Goals:

We have identified three goals that have shaped our tourism strategy.

- Human: serves a people-centered and community-based growth agenda.
- Sustainable: is proactive, accountable and measurable toward our climate goals.
- Innovative: is future-facing, creative, collaborative and digitally-advanced.

Our Strategic Tourism Pillars:

We have identified the following six strategic tourism pillars that will set the foundation for our new Tourism Strategy (2023-2028):

- People
- Places and Spaces
- Culture
- Climate Action and Sustainability
- Innovation
- Data and Insights

In order to connect our tourism strategy to the UN Sustainable Development Goals and the 2030 agenda for Sustainable Development, we have tied each tourism pillar to a specific Sustainable Development Goal. The SDGs we have connected our Strategy to are SDG No 9 Industry, Innovation and Infrastructure; SDG No 11 Sustainable Cities and Communities; SDG 12 Sustainable Consumption and Production Patterns, SDG No 13 Climate Action and SDG No 17 Partnerships for the Goal. We have also adopted the UNWTO (United Nations World Tourism Organisation) definition of sustainable tourism to underpin this work.

Climate Action and Sustainability

We recognise that enabling a more sustainable tourism industry is a key action toward achieving the goals of our National Climate Action Plan. We will also ensure that our tourism ambitions serve the broader climate aims and obligations within Dublin's City Development Plan 2022-2028, which are to develop a city that is: low carbon, sustainable, and climate resilient.

To achieve this, we will:

Embed the UN Sustainable Development Goals and the UNWTO Sustainable Tourism definition within our tourism development strategies and frameworks. Dublin will become the first Irish city signatory of the UN Glasgow Declaration on Climate Action in Tourism which will create a structured road map and reference point for achieving our sustainable tourism goals.

Prioritise our new tourism initiatives towards local and domestic visitors, which will have a lower environmental impact and distribute visitors throughout the breadth of the city.

Implement the Local Authority actions of the new National Tourism Policy.

Promote the success of existing sustainable tourism experiences, parks, venues and sustainable visitor movement and transport options. We will work toward recognised sustainability accreditation for Dublin City Council operated venues and visitor experiences reducing the carbon footprint of our tourism spaces in Dublin City.

How do we know we have succeeded?

We have made meaningful progress in reducing our tourism carbon footprint in line with our climate objectives and goals as stated in the Dublin City Development Plan 2022-2028.

We have created new tourism initiatives to attract a mix of local and domestic visitors with the least impact on the environment and city resources.

We have increased promotion of our sustainable tourism products, such as our UNESCO Dublin Bay Biosphere as well as sustainable experiences and modes of transport through cooperation with national tourism and transport agencies and international tourism marketing bodies.

We have certified all of our cultural venues and visitor experiences with a recognisable and standardised sustainable tourism accreditation.

In developing the strategy Dublin City Culture Company engaged with DCC's Climate Action Team and further progressing work to support the hospitality sector be part of the journey by engaging with Earth Check to develop a baseline for the sector in the city.

Smart Dublin

DCC's Smart Cities –Smart Dublin - initiative is proving to be successful in engaging private sector and academia in the development of innovative solutions to challenges facing Dublin. Through Smart Dublin, DCC is part of MasterCard's global 'City Possible' programme through which it piloted a new economic development platform to develop better insights into local economic performance. Smart Docklands DCC's flagship Smart District was created to provide a platform for start-ups, big tech, the city and academia to come together and innovate. It is No. 1 globally for Foreign Direct Investment (FDI) strategy for Smart Locations of the Future by FDI Magazine. Smart Docklands has the support of Science Foundation Ireland (SFI), Enable, Google, Autodesk, Vodafone, MasterCard, Microsoft, and Softbank

RELATED ACTIONS IN CND 2030:

R4
RF 4

C1-C4
S4

Key co-creators:

Citizens, developers, Department of Housing, Local Government and Heritage, Eastern Midlands Regional Authority, Failte Ireland, Department of Further and Higher Education, Works, Health Services Executive, Trinity College Dublin, Dublin City University, Technical University of Dublin, University College Dublin.

Research and Academia

Dublin City is home to world class third level institutions that contribute to Dublin City Council's vision of creating a city that is dynamic, sustainable, future-ready, built on thriving, inclusive neighbourhoods and communities, a strong economy, a vibrant cultural life, and compact connected growth. As public sector bodies all third level institutions within the city are required to develop climate action plans that enable us to achieve our National Climate Objectives. However, their influence and capacity goes beyond the city. Students of third level institutions are the next generation of climate leaders in Ireland and globally. Third level institutions are keenly aware of their power and capacity to accelerate action well beyond the city. Being based in a city with ambitions, adds to their global influence.

Further the city's third level institutions have been supportive of Dublin City Council's ambitious to achieve climate neutrality.

By engaging effectively with third level institutions in our City, we actively respond to the Sustainable Development Goals:

SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all'
SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable

For example, through DCU's MSc in Climate Change pilot capstone programme, DCC engaged with four students to work on projects in relation to resource management, fast fashion and textile waste, climate change education and community engagement in relation to illegal dumping in the NEIC. DCC Staff are now considering how to best apply the students' findings.

TCD approached DCC in April 2022 to pilot a sustainability focused internship programme. Over a six-week period beginning in August, eight students undertook projects with the law department, waste services, environment and transport, libraries and the arts office. Staff who engaged with students were impressed with the students and their capacity to deliver high quality work in a short time frame.

Through these partnerships we have not only been able progress vital work, but we have been given a unique perspective on the solutions to the challenges we face by the next generation of leaders.
Further, through Smart Dublin, DCC BETA Projects, and LEO, staff have been engaging with leading academic researchers to undertake projects that benefit the city

Building partnerships with third level institutions in the city has led to the actions in Climate Neutral Dublin 2030 under the Creative City Foundation which strives to expand these valuable knowledge networks.

A vital demonstration of the value of academic researchers is Dublin Bay UNESCO Biosphere Biodiversity Conservation and Research Strategy 2022-2026. The strategy sets out planned biodiversity conservation and related research actions of the Dublin Bay UNESCO Biosphere (DBUB) from 2022-2026. It aims, firstly, to provide a coordinated framework for biodiversity conservation and research activities to be undertaken by the Dublin Bay Biosphere Partnership; secondly, to provide clarity regarding these planned activities to all stakeholders within the DBB. It builds on the themes and objectives set out in the Periodic Review of the North Bull Island UNESCO Biosphere (DCC, 2014), which sets out the following vision statement:

"Our vision is to celebrate and promote a wider appreciation of the natural and cultural heritage of Dublin Bay, to capture the inherent passion of the community for the Biosphere concept and for the Dublin Bay Biosphere to be an exemplar for a new wave of Biospheres in the world network."

The strategy reflects the current funding model which is insufficient to maintain and restore natural habitats. To achieve this objective a comprehensive study detailing the state of current species and habits is required from which a detailed and thorough management programme could be developed.

A conservative estimate for a comprehensive survey would likely cost €200k with ongoing research and restorations projects estimated to cost €1-2.5m per annum.

The recent EU Nature Restoration Law, which was supported by the Irish Government, provides the impetus to deliver on this action and this could be supported by the recently established Independent Advisory Committee on Nature Restoration

Formalising our relationship with all third level institutions in the city will compliment and strengthen existing relationships while broadening and diversifying our engagement with third level in terms of disciplines and experience. Importantly, a formal approach would guarantee continuity of existing initiatives by building in redundancy to ensure a programme continues when a staff member leaves or retires.

Creative Climate Action:

DCC has over the last four years engaged the arts and culture sector to engage communities across the city in conversations around community climate action, food and climate change, and active travel. The success of artistic practice in creating change has led to DCC's first biodiversity artists in residence programme.

These ambitious artists' residencies aim to transform Dublin City Council's Executive and Elected Members' ability to incorporate Biodiversity as an embedded value in their aims. Artist-led projects will originate from working within the council, exploring ideas and ways of thinking that will lead to innovative outcomes, from intimate encounters to building robust structures that support community engagement, empower and instil information sharing and project visibility by harnessing the transformative capacity of artistic thinking for change, positive action and deep understanding of challenges and solutions. Outcomes and artistic values will feed into the council's Climate Action Plan 2024 and onwards. This project is funded by Creative Ireland, through the Creative Climate Action Fund.

This project will be carried out over 24 months and will involve embedding artists in the organisation over three 'seasons', or distinct periods of six months, to support making biodiversity a key consideration in projects, and enabling DCC to reach their environmental and climate action goals.

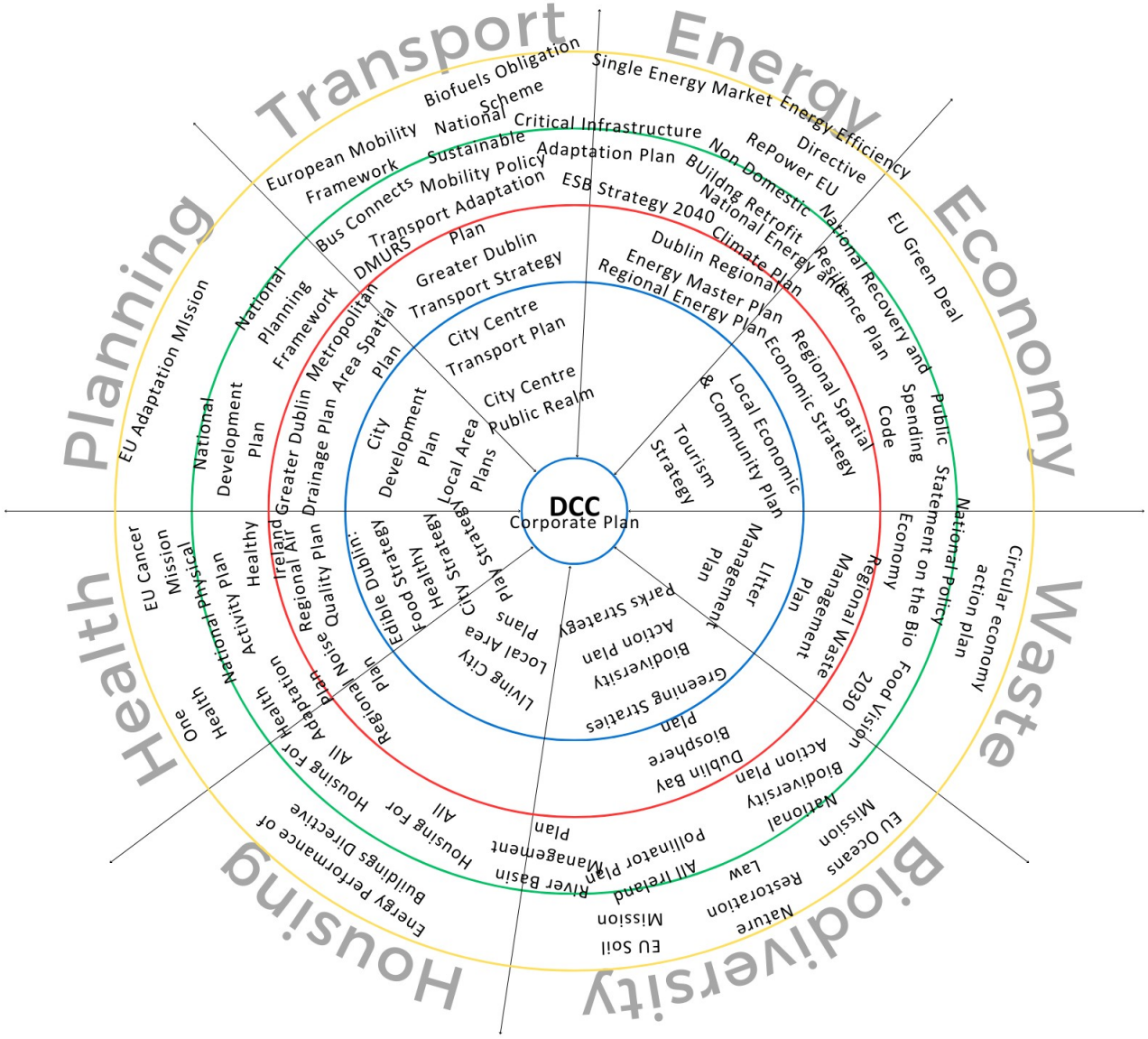


Figure 20 Policy and Level of Government by Sector

Note: Within blue circle is city led policy, red is regional, green is national government and yellow is EU level.

To report the city´s emissions gap and residual emissions, you can use table A-2.1 and the associated definitions. You will have to refer to estimates from your iterations of Climate Neutrality Scenarios and Impact Pathways (Part C).

Table VII - 2.1 Baseline Emissions and Emissions Gap

	(1) Baseline emissions	(2) Emissions Reduction Target 2030		(3) Emission reduction through other Action Plans		(4) Emissions Gap		(5) Emissions reduction through the CCC Action Plan to address the Gap		(6) Residual emissions	
	Baseline emissions (ideally not older than 2018) - referring to the inventory used for target setting	The emissions reduction target for 2030 ideally achieves a minimum 80% reduction from the baseline, as reported in Section 2 of the Commitments document of the CCC. The overall target should be absolute or net-zero (i.e. including the compensation of any residual emissions).		These are the emissions reductions that would be achieved through existing policies, and plans, outlined in Section A-2.1. Those actions are by definition not part of the action portfolio in section B. If they are fully or partially incorporated in module B-2, their associated reduction potential should be referenced in column (5) and not be included here. WARNING if the baseline is a BAU scenario: If the BAU modelling includes any of these existing measures, please also do not include the associated emissions reduction in this column as otherwise it would be double counted.		(4) = (2) – (3)		This column is used to present the already quantified emission reduction associated with the action portfolios outlined in module B-2. Ideally, this equals the gap. If the there is a difference between the reduction potential of the actions specified in module B-2 (for instance because their reduction potential has not been fully estimated or because additional measures will be identified in future iterations), the CCC AP should be explicit about this difference and explain how the difference will be closed. In principle, as long as the difference has not been addressed, it would be considered as part of the residual emissions.		(6) = (1) – (2)	
	(absolute) (specify units)	(absolute)	(%)	(absolute)	(%)	(absolute)	(%)	(absolute)	(%)	(absolute)	(%)
Buildings	1282165	1025732.04	80	523123.343	51	502608.702	29	502608.702	29	256,433	20
Transport	545843.1	436674.48	80	222703.985	51	213970.495	29	213970.495	29	109,168.6	20
Waste	42041.62	33633.2961	80	17152.981	51	16480.3151	29	16480.3151	29	8,408,.32	20

Waste water treatment	16916	13532.8	80	6901.728	51	6631.072	29	6631.072	29	3 ,383.2	20
Industrial Process and Product Use (IPPU)	155399.8	124319.876	80	63403.137	51	60916.7395	29	60916.7395	29	31,079.96	20
Agricultural, Forestry and Land Use (AFOLU)	Not currently calculated						29		29		20
Total	2042366	1633892.5	80	833285.173	51	800607.323	29	800607.323	29	408,473.2	20
Comments	The 95 Actions in Climate Neutral Dublin 2030 across the four foundations, implementation actions and operations and service delivery actions are those which are led by DCC. Many of the actions require partnership and collaboration with external stakeholders who are listed in the following sections. The 8 CNAP actions are led by external stakeholders, DCC is a collaborator and facilitator in the implementation of these actions, primarily through our steering group, challenges, and engagement. *CND 2030 Action – DCC Led:* Increasing the sequestration of carbon through greening strategies is priority for the city, as currently we do not have an accurate assessment of the land types and land cover in Dublin City to understand the impacts our greening measures have had on sequestration. In 2018 the percentage of the city's total 117 sq km approximately 17% green (~20sq km), based on our greening strategies and the target to increase available green space to 20-25sq m per person, this would see an additional 12 sq km of green space in the city. *CNAP Actions – DCC Supported* Codling Wind Park will produce 1300MW of renewable energy avoiding 1.7 million tonnes of CO2e per annum, its impact on Dublin City is not fully clear and will need further assessment, as the energy produced will be consumed at a national level. This project will primarily impact on built environment and IPPU. It will benefit transport and enable the transition to EVs. Cement production is the only industry within Dublin City's administrative boundary. ECOCEM is actively decarbonising cement production Ireland and welcomed the requirement for a 30% clinker substitute in all government projects. This will extend beyond and have impacts on the construction sector as a whole. Residential and non-Residential retrofit presents another challenge for decarbonisation. DCC plays a role in this through sustainable energy communities (SEC), and planning permission where applicable in terms of the technical side. Further, we play a role in behaviour change that can										

	support a reduction in emissions through encouraging less consumption. Measures to improved public transport services are essential, DCC supports the delivery of Bus Connects, Dart+ and MetroLink to ensure that people have options to move through the city. We need to progress work to ensure that connectivity between these modes allow people to walk, cycle or scoot the first or last part of their journey.

2.3 Module A-3 Systemic Barriers and Opportunities to 2030 Climate Neutrality

This module aims to document the conclusions of a systems and stakeholder mapping aimed at identifying systemic barriers and opportunities. In conjunction with the GHG inventory and the policy baseline analysis in the previous two modules of Part A, the analysis reported here serves as a basis for designing actions that address these barriers or exploit the underutilised opportunities in Part C. The results of this analysis as provided here include:

- A description of the main systems related to the city´s GHG emission domains, e.g., technological/infrastructural, institutional/ regulatory, organisational, financial, political, social and behavioural systems.
- A description of barriers and opportunities for each of the systems above. This includes gaps (infrastructural/ technological, institutional/ regulatory, organisational, political, financial, behavioural or social) as well as an evaluation of unexploited resources (e.g., renewable energy sources, digital technologies, etc) or circumstances.
- A map of stakeholders involved for each of the systems above. This includes relevant actors per systemic element at different levels of governance throughout the whole policy cycle, such as local, regional, national, and EU/supranational administrative bodies and agencies, civil society, non-governmental organisations (NGOs), academia, community-based organisations, social movements, steering groups, private sector actors etc.

A-3.1: Description of urban systems, systemic barriers, and opportunities

The System and Systemic Barrier(s)

The primary challenge to realising climate neutrality is silos. We began to build bridges between our silos through the implementation of our first climate action plan. Now we need to make sure that we use the bridges every day and build new ones to create as many opportunities as possible for connections to be made that allow us to exchange knowledge, ideas and to build skills and capacity. Critically, this will also us to create more resilient systems across the city – we need to build external bridges to ensure that we reach neutrality.

As has been demonstrated in the previous section there is a breadth and depth of plans that impact on capacity to implement effective climate action. Figure 20 has attempted to capture the relationship and influence of these plans and policies on the city by sector. The complimentary figure here, Figure 21 Sectoral Stakeholders and Level of InfluenceFigure 21 illustrates who the stakeholders are in each of these sectors and which level they operate. Green are at national level, red are regional and blue are at city level. It is complex, it is evident why silos persist. Notably there are organisations namely regulatory bodies that have a role in more than one sector, for example the EPA at the national level are responsible for environmental regulation across all sectors. At the regional level the Eastern Midlands Regional Assembly, shapes land use policy at the regional level and therefore has a role in all sectors. Ultimately the impacts and decisions made at the national level exert pressure down towards the city level, where the sectors and their policies meet and are translated into practice.

In certain instances, namely energy, the city council has no direct control in the generation and transmission of energy, except as consumer and can use our position to shape the energy sector. Reducing emissions is primarily the responsibility of the grid operators, yet, as the planning authority we have a role in enabling construction of renewable energy projects. What is clear is that while some stakeholders have technical responsibility, everyone has a responsibility to enable

the changes needed.

Removing this barrier of perceived “sole ownership” of a sector or an aspect is priority for climate neutrality, and to ensure that risks of carbon leakage, lock-in and maladaptation are minimised.

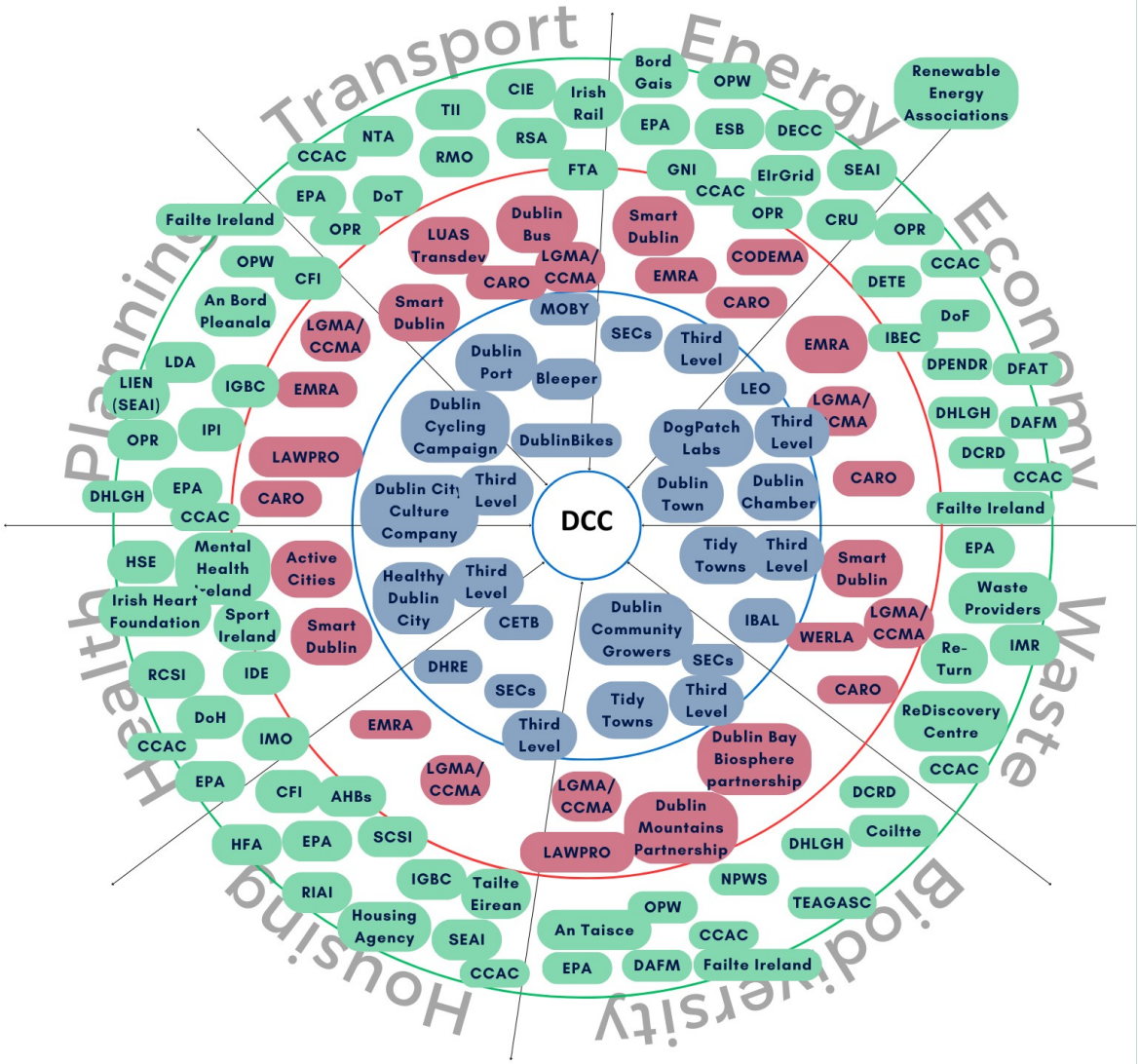


Figure 21 Sectoral Stakeholders and Level of Influence

Barriers to Opportunities – Systems Approach using health

We know that collaboration is needed to reduce emissions. Through implementing our first plan we began exploring ways to encourage interdisciplinary collaboration and the use of systems thinking. We began applying health lens to our work.

Triaging Our First Climate Action Plan

The Climate Action Team has since October 2021 has meet regularly with the Dublin Public Health team, on foot of Dublin Climate Action Week 2021. The meetings have been considering how health can be used as a narrative for climate action. An outcome of these meetings has been

the development of two tools – Climate Triage & First Aid Framework and a Climate Readiness Toolkit, to support embedding a systems approach.

The Climate Triage Framework emerged from separate discussions around the EU Mission and how to monitor Dublin City's climate vitals beyond CO_2e. Climate Neutrality by 2030 or 2050 as per the National Objective is not a finite end point, but a state of existence that needs to be maintained by continuous monitoring, to understand what is working, what is not, and what needs to change. This is achieved by monitoring other factors that can provide insights. For example, a reduction in transport emissions could be achieved by banning all vehicular access to the city. However, this could result in poor air quality in other areas and carbon leakage. Another example is the roll out of bicycle lanes assumes that drivers will shift to becoming cyclists, when this does not happen, we wonder why. As such we need to monitor ex-ante and ex-post to understand the challenges that may emerge and how they should be addressed and by whom.

Further, in an emergency situation, individuals within teams have roles that are interdependent, and dependent on actions of others. Climate action is not dissimilar, and the concept of triage for climate action is not new. The Climate Triage Framework is intended to show the interdependencies and relationships between actions and climate risks, while serving as a means for identifying gaps and opportunities for further collaboration. Further, in the context of the Mission as a means for identifying needs for resources and partnerships to respond to climate change.

Climate Triage & First Aid

An emergency with potential mass casualties requires triage to prioritise action and monitor response. Climate change impacts and actions are compared to health responses,with statements like the "Planet is sick". If the planet is sick and the illness is climate change, then like any illness or disease, a treatment plan is required.

This process can be applied at the city scale and at action level It is meant to be used in conjunction with the Climate Readiness Toolkit.

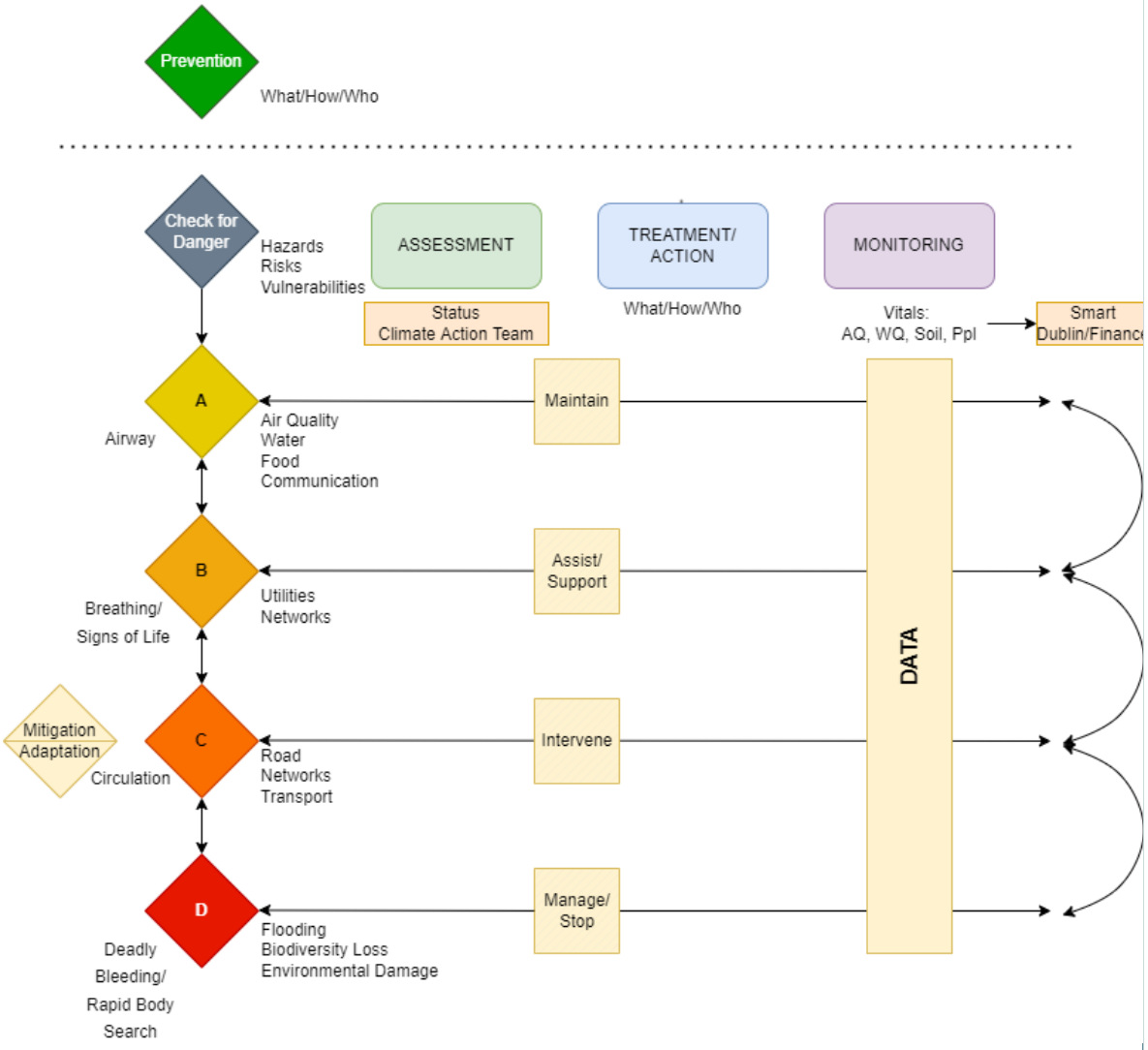


Figure 22 Climate Triage Tool

Climate Action Vitals

Climate mitigation action focus primarily on CO_2e, it is not the only measure of climate action success. Other critical vitals that provide important indicators of success are:

- Weather patterns (rainfall, temperature) and events (frequency and intensity)
- Air Quality
- Water Quality
- Soil Health
- Biodiversity (Flora and Fauna)

- Noise Levels
- Population Health and Well-being
- Social Cohesion
- Economic indicators
- Traffic volumes

Critically, each of these vitals should not be considered in isolation. Their 'health'/ status should contribute to the monitoring, assessment and analysis of an action, project, or programmes' contribution to climate objectives. (The Climate Readiness Toolkit in the Appendix 8 our new climate action plan Climate Neutral Dublin 2030, is intended to be used to support detailed monitoring and analysis of an action from inception to implementation and beyond). Returning to the example of cycle lanes, triaging we may uncover that safety is the number one concern that prevents people from using cycle lanes even those that are segregated, because unwanted driver behaviour is not policed.

Climate Triage Process

Moving from the vitals, the triage process begins with a check for danger. In the context of climate change this is the hazards, risks and vulnerabilities posed by climate change to the city. Action F16 and F16a in the previous CCAP are focused on developing a methodology for assessing climate risks and the associated costs of adaptation, using a case study of the bridges crossing the Liffey. This informed the development of this approach.

Next steps involve assessing how are the risks are impacting on

- A – the Vitals
  - Are they causing poor air quality, water quality, soil etc.?
- B – Utilities, Networks,
  - Are they adding stress to water network, electricity network, communications networks
- C – Road network, and Transport
  - Are they preventing movement through the city
- D – Environmental Damage, Flooding, Biodiversity Loss,
  - Are the risks resulting in wide scale damage across the city?
  - Are we experiencing sudden onset climate events?
  - Are we experiencing slow burn events?

The assessment informs our actions, and continuous monitoring further determines the direction of action and what needs to be done.

Highlighted above, data is essential to monitoring climate action. Critically, data analysis that considers and monitors correlations between data sets will provide a more detailed and nuanced understanding of the impacts our actions on climate change.

Prevention

Awareness and education initiatives are essential to enabling and empowering residents of the city and businesses to climate action.

CCAP Triage – Collaboration & Cooperation

Internal

Applying a triage approach to our first climate action plan (Figure 23) and transport actions within that same plan (Figure 24) highlights the importance of a whole of council approach to the climate action plan. Every department has a role, and interdisciplinary collaboration is needed, as well as the need to collaborate with external stakeholders.

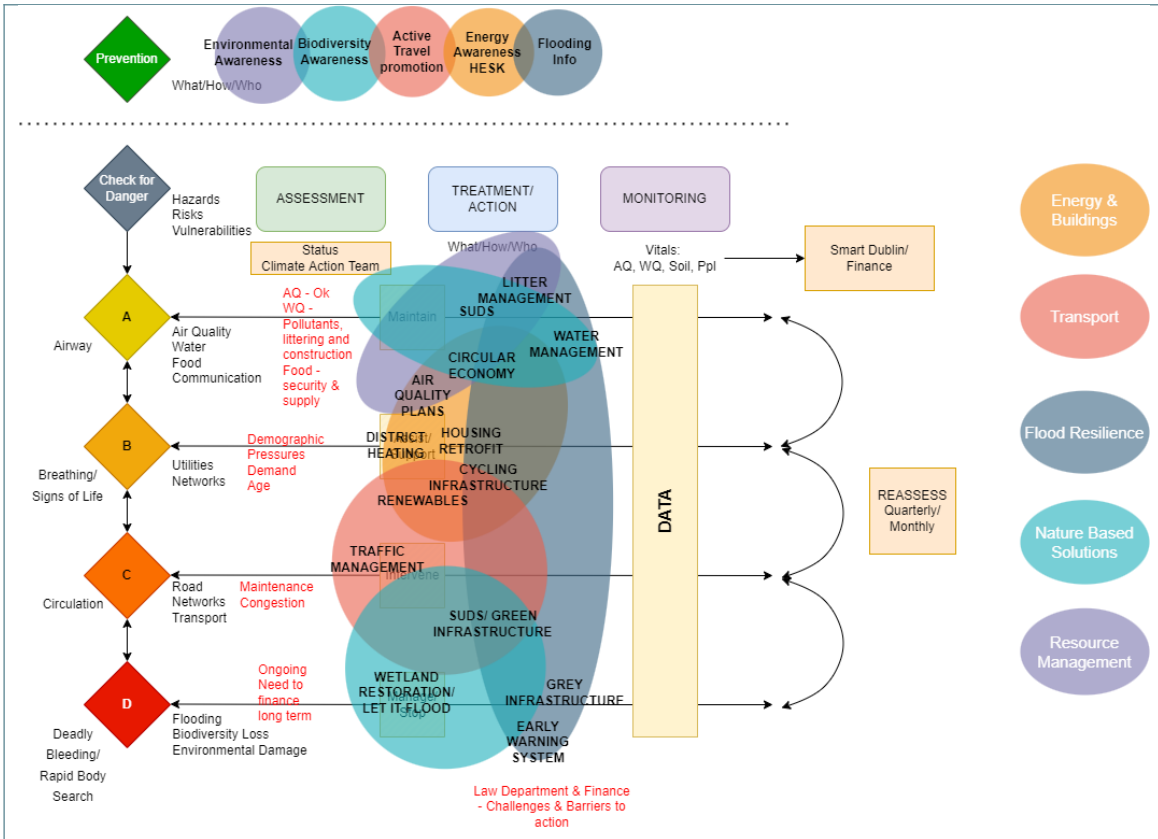


Figure 23 CCAP 2019-2024 Triage

Gaps and Opportunities to Address

Through this approach see the gaps and opportunities that are needed to address to become resilient to climate change and climate neutral. This list is high level and not exhaustive but has informed Climate Neutral Dublin 2030 and the strategic priorities of this climate city contract.

- Data
  - How do use data sets to monitor and assess?
  - How do we collaborate with data owners (Met Eireann, CRU, ESB, Eirgrid, Uisce Eireann/Irish Water, NTA, NPWS)
- Bringing coherence to legislation –
  - What are the contradictions and tensions that inhibit action?
  - How can community renewable energy projects be realised in the city, i.e. Croke Park and Aviva Stadium, by changes in legislation
  - How can farm to fork and back, circular food systems be realised?
- Finance and procurement –
  - The mission provides an opportunity to access private finance, however, 'how' is the challenge. How do we unlock private finance in a transparent manner for public good, in a context whereas public bodies we are not in a position to access private finance – how do we make Dublin attractive to investors for the benefit of SMEs
  - Green Public Procurement as prevention?
    - Cost of Carbon
    - Environmental
  - What is the cost of not doing and continuing with the status quo
  - How can grants be conditioned to realise co benefits and drive behaviour change?

(Can EV grants be used to change driver behaviour?)

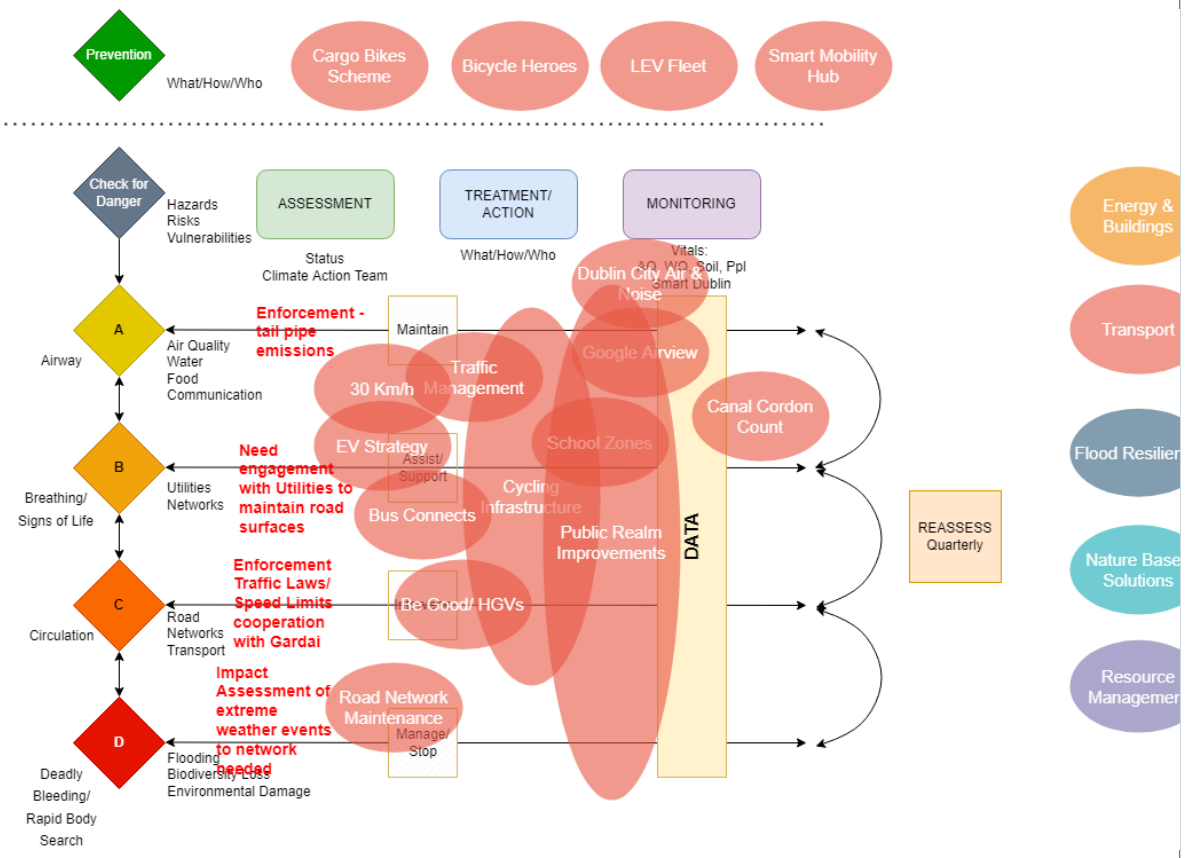


Figure 24 Transport Actions 2019-2024

The Approach for Climate Neutral Dublin 2030 and the CCC

Following our review and reflection on the existing plan (its development and implementation) as well as initial discussions with key internal stakeholders it was identified that the current plan needed to be consolidated and needed to embed more deeply a collaborative approach to achieve the systems innovation demanded by the Mission. We needed to move away from a laundry list of actions, to a strategic web of interdisciplinary and interdependent actions. The foundations were developed based on this recognition, and are hoped to promote interdisciplinary collaboration, as the five themes allowed for siloed working to persist.

To verify this, a staff survey was developed. The survey sought to understand perceptions of individual's and the Council's role in addressing climate change in the context of the Mission.

Staff were requested to complete a survey asking the following questions:

1. *Based on your current understanding, what is the main objective of the EU Mission for 100 Climate Neutral and Smart Cities?*
2. *How do you see your role contributing to the EU Mission?*
3. *In your role, do you find that you have the resources (staff, support and finance) to implement climate action? Scale of 1 to 5*
4. *How do you see your role contributing to Dublin City's obligations under the Amended Low Carbon Development and Climate Act 2021?*

5. *Dublin being part of the EU Climate Neutral and Smart Cities is to you (choose max 3 options)*
   a. *an opportunity to accelerate the green transition*
   b. *an opportunity to embed climate action in our operations and service delivery*
   c. *an opportunity to collaborate across the organisation*
   d. *another project to undertake that adds to your workload*
   e. *a challenge because we have limited powers*
   f. *a challenge because we lack leadership*
   g. *a question mark: you are undecided and need to learn more*
6. *What do you see as the opportunities for Dublin City in the Mission?*
7. *What are the barriers facing Dublin City in the Mission?*
8. *Do you have ideas on how these barriers could be addressed?*

Actions, as with the first plan, needed to be developed through workshops and one to one discussions with teams and individuals with current responsibility. The workshops were also an opportunity promote collaboration, ensure the interdisciplinary nature of the actions and that actions have multiple co-benefits. A series of workshops with staff were planned to discuss and deliberate.

1. CPD talk on the Climate Action Plan (in person/online)
2. Vision of Dublin 2030 (in person)
3. Foundations and Connecting Actions Review (in person)
4. Review of what is happening (online)
5. Stakeholder mapping (online)
6. Review on indicators (online)
7. Story Slam – Communication (in person)
8. Review of all actions (online)

Reaching neutrality by 2030 through the Mission will be a challenge but not impossible. The process will be iterative as the Climate Action Plan is a living document that will responds to science and changes in policy and legislation. We recognise, that its implementation will require ongoing engagement with staff through workshops, and external stakeholders to address capacity gaps.

Further Figure 23 demonstrates the necessity to work with all stakeholders in the city to drive this transition forward. Especially to build bridges across our silos to address the key barriers to acceleration which are policy coherence and cohesion; the absence of which has created increasing inequity and reduced the financial attractiveness of Ireland to investors.

The table below section A.3.2 provides a summary of stake holders and where they may be key in as levers in the various emissions domains.

Local Government Management Agency (LGMA) and County and City Management Association (CCMA)

It is important to highlight two key stakeholders in local government in the Irish context. The Local Government Management Agency (LGMA) was established in 2012 as an agency of the Department of Housing, Local Government and Heritage, and is primarily funded by the local authorities it serves. The LGMA provides a range of professional services to all 31 local authorities and seeks to enhance and support local authorities with the delivery of their services. As local authorities have become more involved with leading and delivering on climate action within the communities they serve, the LGMA has sought to increase the support they provide to local authorities in this area. LGMA climate action initiatives to date have primarily been supporting decision-making, commissioning of reports and facilitating training.

The LGMA also work closely with the County and City Management Association (CCMA) on climate related reporting and guidance for local authorities. The CCMA describes itself as the representative voice of the local government management network, which is comprised of the chief executives of the City and County Councils, as well as assistant chief executives of Dublin

City Council. The CCMA are a non-statutory body that represents its members on relevant external committees and steering groups and in consultations with government departments. The strategic objectives of the CCMA are set by the CCMA Executive, which is comprised of eight local authority CEs. The CCMA also operate through committees acting upon specific areas of interest for the local government sector. While a case could be made that all of these committees have environmental and climate implications, the two committees explicitly dealing with these areas are the Climate Action, Transport, Circular Economy, and Networks Committee and the Water, Environment and Emergency Planning Committee. LGMA act as a point of contact for the CCMA for wider stakeholder engagement and provide support too.

It is important to note that the role of both LGMA and CCMA extend beyond climate considerations to incorporate the full range of services delivered by local authority such as those relating to finance and procurement, housing, HR and governance. Many of these areas can also have implications for the Net Zero objectives of Dublin City Council. Perhaps the most influential part of the work of the LGMA and CCMA are the decisions made at committee level. The LGMA have five committees and members are chief executives and Directors of Service from various local authorities, as well as representatives from relative government departments and other stakeholders. The CCMA committees take a "collaborative engagement and partnership" approach, and each committee has a list of partner agencies / state bodies / shared services. For example, the CCMA's Climate Action, Transport and Networks Committee lists the Department of Environment, Climate and Communications (DECC); Department of Housing, Local Government and Heritage (DHLGH); Department of Transport (DoT); Department of Community and Rural Development (DCRD); An Garda Síochána; Mét Éireann; Environment Protection Agency (EPA); Office of Public Works (OPW); Sustainable Energy Authority of Ireland (SEAI); Transport Infrastructure Ireland; Road Management Office (RMO); Road Safety Authority (RSA); Climate Action Regional Offices (CAROs); National Broadband Ireland (NBI); Climate Change Advisory Council; Joint Utility Local Authority User Forum (JULA); Irish Business and Employers Confederation (IBEC).

FTA

Table VIII A-3.2: Systems & stakeholder mapping

System	Stakeholders	Influence on the city´s climate neutrality ambition	Interest in the city´s climate neutrality ambition
Health	DoH,	The DoH has overall responsibility for the health and wellbeing of the citizens of Ireland. The DoH oversees health and social care policies and strategies, undertakes public consultations and delivers specific programme such as Healthy Ireland and Sláintecare, the ten-year programme to transform Ireland's health and social care services.	These bodies have responsibility of the delivery of health care services at various levels across the city, as well as training of medical professional and administering health related initiatives. These services directly impact neutrality ambitions through the facilities they operate and also make important contributions through informing, initiating and engaging with health-related climate solutions. Realising the benefits of preventative health, by addressing the social determinants of health, improvements to the urban environment that will shape health outcomes. These bodies and the citizens connected to them through service delivery and the initiatives they manage, recognise the
	Health Services Executive	The HSE is responsible for the provision of health and personal services in Ireland, including promoting good health, preventing illness and diagnosing and treating illness and injury. These services are delivered through HSE staff including doctors, nurses, physiotherapists, social workers, occupational therapists, etc. And across a network of HSE facilities such as hospitals, health centres, clinics and care providers.	
	Royal College of Surgeons	The RCSI is at the forefront of health education and research and a	

		professional training body for surgery.	interdependencies between healthy environments and healthy people. In the HSE Climate Action Strategy 2023-2050 the organisation makes clear their awareness of the health-related risks of climate change, as well as their plans to reduce operational emissions where possible through retrofitting suitable buildings, upgrading their fleet and delivery of greener models of healthcare. The RCSI directly contribute to Dublin's Net Zero objectives by pledging to reach Net Zero themselves and also training healthcare professionals in manner which recognises the connection between sustainability and the environment and health and wellbeing. In addition, they contribute research and education in support of the SDGs, and through their Centre for Positive Health Sciences offer a free introductory course The Science of Health and Happiness. Sharing knowledge like this supports Net Zero ambitions through the social determinants of health approach.
	Mental Health Ireland,	MHI is the longest established	
	National Youth Council of Ireland	An Ireland where young people in every community are empowered through excellent youth work to realise their potential and actively participate in an inclusive society.	
	Healthy Ireland	Healthy Ireland focuses on improving people's health and wellbeing. Its goal is to prevent chronic disease by encouraging healthy lifestyle behaviours and creating healthier environments.	
	Irish Doctors for the Environment.	Irish Doctors for Environment is an NGO and registered charity consisting of doctors, medical students and allied healthcare professionals in Ireland who aim to create awareness, interest and implement action around environment health and the impact it has on our patients' health.	
	Irish Heart Foundation	The **Irish Heart Foundation** supports and campaigns for people who have been affected by heart and strokes throughout their lives.	
	Irish Medical Office	The role of the IMO is to represent doctors in Ireland and to provide them with all relevant services. It is committed to the development of a caring, efficient and effective Health Service.	
Energy	ESB	The ESB are responsible for the generation and distribution of energy in Ireland.	These organisations have responsibility for delivery of energy to homes and businesses across the city, as well as the decarbonisation of these systems. Meeting their obligations to provide renewable energy, and utilising the opportunity to upgrade infrastructure and introduce maintenance regimes that ensure the grid is future proofed, improve energy security and reduce energy poverty.
	Eirgrid	EirGrid's primary purposes are the daily management of the Irish national grid, the operation of the wholesale power market, and the development of high voltage infrastructure to serve Ireland's economy. They are the Transmission operator and responsible for projects over 40MW	
	Commission for Regulation of Utilities (CRU)	The CRU regulates utilities such as the energy and water sectors	
	Gas Networks Ireland (GNI)	GNI are responsible for the ownership and operation of the Gas Networks across the state.	
	Bord Gais	Bord Gáis Energy is one of Ireland's leading energy supply and services providers, BGE have been serving Irish	

		families and businesses for almost 50 years. Today, as an integrated energy company, BGE is playing a leading role in Ireland's energy transition, committed to achieving net zero by 2045 and helping 700,000 customers reach net zero by 2050. BGE are doing this by investing in and developing net zero energy solutions across three core pillars: infrastructure; trading and retail.	
	Large Industry Energy Users Network	LIEN members are companies with an annual energy spend of €1 million or more. SEAI work with these companies to improve their energy performance. We hope Ireland's larger companies will lead on the transition and inspire others to take action. LIEN members report annually on energy consumption and projects undertaken to help increase efficiency.	
	Energy Associations	Renewable energy associations in Ireland include Wind Energy Ireland, Irish Solar Energy Association, Irish Bioenergy Association, Irish District Heating Association	
	Encyclis (Waste Energy)	Encyclis is the operator of the Dublin Waste to Energy Facility and key part of Dublin District Heating Project	
Transport	NTA,	The NTA is responsible for developing and implementing strategies to provide high quality, accessible, sustainable transport across Ireland.	These bodies have responsibility for delivery of safe, connected and sustainable transport infrastructure and services across the city. Achieving vision zero, the national programme to reduce road fatalities; and creating a robust, reliable, and efficient public transport network. A sustainable transport system with less private cars and more public and active transport users is recognised as key component to reducing traffic congestion and associated issues in the city.
	Transport Infrastructure Ireland	The TII is a state agency dealing with road and public transport infrastructure	
	Department of Transport	The DoT sets transport policy nationally.	
	Roads Management Office	The RMO, provides Local Authorities in Ireland centralised supports, forums, guidelines and technology to support and foster: • improved roads asset management outcomes • best practice and capacity in Local Authorities • efficient management of road licensing activities • technical input to national policy development on road and	

		transport issues • consistency in road maintenance and investment	
	Road Safety Authority	The RSA's mission is to make Irish roads safer for everyone. That means working in every way possible to save lives and prevent injuries by helping to reduce the number and severity of collisions on Irish roads.	
	Dublin Bus	Bus Átha Cliath-Dublin Bus, a designated activity company, limited by shares, registered in Ireland at 59 Upper O'Connell St, Dublin 1. No 119569 was founded in 1987 and is a wholly owned subsidiary of the state-owned Córas Iompar Eireann Group. We operate the Public Service Obligation network in the Greater Dublin Area under a contract of services with the National Transport Authority. Our network covers a region from Newcastle in County Wicklow to the south, Balbriggan in north County Dublin and Maynooth in County Kildare to the west.	
	CIE	The CIÉ Group remains Ireland's largest public transport provider. With over 11,000 staff, the Group carried 300 million passengers in 2023. The Group works closely with the Department of Transport, the National Transport Authority and other key stakeholders. Unprecedented capital investment will see significant growth in services over the coming years. The Group's Sustainability Strategy is transforming our services and operations into a low carbon, fully circular business.	
	Freight Transport Association	The Freight Transport Association Ireland (FTA Ireland) is a multimodal representative trade association for the freight, distribution, passenger, and logistics sector. FTA support, shape and stand up for efficient and sustainable logistics. FTA look after the interests of our members who provide coach and bus passenger services, move goods by road, rail, sea and air and we are unique in the sense that FTA represent all modes of transport.	
	TransDev/ LUAS	Transdev Dublin Light Rail is a leading operator and global integrator of mobility, committed to sustainable, inclusive public transport for all passengers.	
	Irish Rail	Irish Rail is the national agency	

		responsible for maintaining and operating the rail network across the state.	
Waste	WERLA,	Three WERLAs, covering the Connacht-Ulster, Eastern Midlands and Southern Regional, were established in 2015 with responsibility for co-ordinating the waste enforcement actions of Local Authorities.	These organisations are responsible for the delivery of waste services, monitoring and management of waste facilities, enforcement of waste regulations, as well as design and implementation of waste and circular economy improvement programmes. Progress towards a more resource efficient and circular material cycles will have benefits for citizens and industry stakeholders, and contribute to national waste-related objectives, including a reduction in waste going to landfill or incineration due a shift to a circular economy.
	Rediscovery Centre	The Rediscovery Centre is the National Centre for the Circular Economy in Ireland. A creative movement connecting people, ideas and resources to support greener low-carbon living.	
	Re-Turn	Re-Turn manage the **Deposit Return Scheme**, a circular economy initiative that aims to create a closed loop recycling system guaranteeing the material is returned and recycled.	
	Waste Providers	Companies holding a waste permit that manage waste manages services within a Local Authority. (Grey Hound, Panda, City Bin, Thortons,)	
Built Environment	DHLGH,	Department responsible for the Local Government System in Ireland and provision of capital funding for social and affordable housing while also holding the remit of Biodiversity, Heritage, Water, and River Basin Management	The construction and renovation of Dublin's building stock is an on-going process with direct impacts on climate neutrality ambitions both through the operations entailed and the resultant buildings and built environment. Moving towards efficient and circular construction processes that deliver energy efficient and adaptive buildings with lower embodied emissions will ensure Dublin remains an attractive destination for world renowned companies and talent.
	Housing Agency	The Housing Agency is a team of dedicated housing professionals working towards delivering sustainable and affordable housing for all.	
	Irish Green Building Council	The Irish Green Building Council – IGBC, is a non-profit organisation that was launched in 2011 with organisations and businesses from across the value chain of the built environment. These include architects, engineers, contractors, universities, professional institutes, NGOs, local authorities, energy companies, leading national and transnational companies. All are united in one common goal to accelerate the transformation of the built environment to one that is sustainable through leadership, research, education, and providing policy input to national and local government.	
	Sustainable Energy Authority of Ireland	The SEAI is Ireland's national sustainable energy authority. The SEAI is integral in the rollout of the national retrofit scheme including, residential, commercial and	

		public building stock.	
	Tailte Eirean	Tailte Éireann provides a comprehensive and secure property title registration system, a professional State Valuation service, and an authoritative national mapping and surveying infrastructure.	
	Construction Federation of Ireland	The Construction Federation Ireland is the construction sector's representative body.	
	Approved Housing Bodies	Approved housing bodies (AHBs) are independent, not-for-profit organisations. They provide affordable rented housing for people who cannot afford to pay private sector rents or buy their own homes.	
IPPU	Cement Manufacture	Ireland is a leader in Europe for design and manufacture of many high tech and high-end devices and products, in particular within the pharma, medical device and data processing machinery. Dublin is a hub and an export centre for much of this activity. Continual improvement of these processes and facilities influences Dublin's neutrality ambitions.	Dublin's attractiveness to world leading companies is driven by many factors, including positive social infrastructure and amenities available within Dublin. Maintaining and improving the city in this regard is vital to remain competitive. As evidenced in IBEC's recent manufacturing industry report, sustainability is key priority in the manufacturing industry, with larger companies placing higher importance on delivering on the sustainability challenge. Being a climate neutral city will keep Ireland at the forefront of European efforts on this front.
AFOLU	Teagasc, OPW,	Dublin City is primarily an urban environment with commercial scale forestry and agriculture operations. Dublin is however home to the largest park in a European capital city in the Phoenix Park, which is managed by the OPW. Woodlands and tree-dominated areas cover 220ha or 31% of the Park's total area, with grassland accounting for 398ha or 56%. DCC also manages an extensive public park network and supports allotments and community growers across the city.	The inter-dependencies between forestry, agriculture, and greens spaces and a climate neutral city are numerous. Increases the land cover of AFOLU areas across the city can support the City's neutrality ambitions and also improve the productivity of these areas if appropriate management practices are in place. Each of these stakeholders plays a critical role in how land is used and can determine how durable carbon dioxide removal and the intensity of carbon production.
	Land Development Agency	The LDA is a commercial, state sponsored body that has been created to coordinate land wi9thin public control to provide affordable and social homes and build communities across Ireland	
	Office of the Planning Regulator	The OPR's role is to ensure that local authorities and An Bord Pleanála support and implement Government planning	

		policy. The OPR also implement planning research, training and public awareness in order to promote the public's engagement in the planning process and to enhance knowledge and public information about planning in Ireland.	
	Irish Planning Institute	The Irish Planning Institute's mission is to advance planning in the interest of the common good by serving, improving and promoting the planning profession.	
	Dublin Community Growers/ Allotments Association	Supporting the expansion of community gardens in the city. A citywide support network for the development of community spaces for growing and sharing	
	NPWS	The role of National Parks and Wildlife Service (NPWS) is: To secure the conservation of a representative range of ecosystems to maintain and enhance populations of flora and fauna in Ireland. To designate and advise on the protection of habitats and species identified for nature conservation (Natural Heritage Areas (NHA), Special Areas of Conservation (SAC) and Special Protection Areas (SPA) having particular regard to the need to consult with interested parties. To make the necessary arrangements for the implementation of National and EU legislation and policies for nature conservation and biodiversity including the EU Habitats and Birds Directives, and for the ratification and implementation of the range of international Conventions and Agreements relating to the natural heritage. To manage, maintain and develop State-owned National Parks and Nature Reserves. To promote awareness of natural heritage and biodiversity issues through education, outreach to schools and engaging with stakeholders.	
Cross Sectoral	OPW	The OPW is a government agency, which manages most of the Irish State's property portfolio, including hundreds of owned and rented Government offices and police properties, oversees National Monuments and directly manages some heritage properties, and is the lead State	All the stakeholders here have a vested interest in taking a systems approach to climate action both, mitigation and adaptation. Further each stakeholder brings with them expertise that is diverse and

		engineering agency, with a special focus on flood risk management	essential to interdisciplinary collaboration and partnership to realise our climate neutrality objectives as a city.
	EPA	The EPA is responsible for protecting and improving the environment as a valuable asset for the people of Ireland. The EPA's purpose is to protect, improve and restore our environment through regulation, scientific knowledge and working with others. It operates independently under the DECC	
	Engineers Ireland	Engineers Ireland is the voice of the engineering profession in Ireland	
	Uisce Eireann	Uisce Éireann is the state-owned water utility company in Ireland.	
	Local Authorities Water Program (LAWPRO)	The role of the LAWPRO as a national shared service working on behalf of all 31 Local Authorities in Ireland is to work to identify the issues affecting water quality nationwide.	
	LGMA/CCMA	The Local Government Management Agency (LGMA) was established in 2012 as an agency of the Department of Housing, Local Government and Heritage, and is primarily funded by the local authorities it serves. The LGMA provides a range of professional services to all 31 local authorities and seeks to enhance and support local authorities with the delivery of their services. As local authorities have become more involved with leading and delivering on climate action within the communities they serve, the LGMA has sought to increase the support they provide to local authorities in this area. LGMA climate action initiatives to date have primarily been supporting decision-making, commissioning of reports and facilitating training.	
	IBEC	Ibec is Ireland's largest lobby and business representative group. IBEC's purpose is to help build a better, sustainable future by influencing, supporting and delivering for business success.	
	Dublin Chambers	Founded in 1783, Dublin Chamber is the largest and most influential B2B networking organisation in Dublin.	
	RIAI	The Royal Institute of the Architects of Ireland supports the architectural profession, promotes the value that architecture brings to society for everyone's benefit, and maintains the Register for Architects.	

	Failte Ireland	As the National Tourism Development Authority, Fáilte Ireland's role is to support the long-term sustainable growth in the economic, social, cultural and environmental contribution of tourism to Ireland.	
	Trinity College Dublin	As Ireland's leading university, Trinity College Dublin is inspiring the next generation of global citizens and global leaders.	
	Dublin City University	The DCU Strategy 2023 - 2028 sees the University continue our mission to transform lives and societies, striving to be a leading and innovative European University distinguished by the quality of the DCU experience, and the impact of our teaching and research on our stakeholders and on issues of global concern.	
	University College Dublin	**UCD** is one of Europe's leading research-intensive universities; an environment where undergraduate education, master's and PhD training, research, innovation and community engagement form a dynamic spectrum of activity.	
	Technological University of Dublin	TUD's ambitious vision is to ***Create a Better World, Together***. TUD will foster a solution-oriented capability amongst our people, encouraging them to find rapid resolutions to the global challenges that we face. TUD will support technological and innovative advances that will help society to thrive. TUD's model of education will evolve and change, nurturing bright minds, providing many new pathways for people, encouraging excellence and celebrating the achievements of all the people who make up the TU Dublin family.	
	Irish University Association	The Irish Universities Association is the representative voice of Ireland's research intensive, enterprise engaged, public universities.	
	Digital Hub	The Digital Hub is a cluster of technology, digital media and internet companies in The Liberties area of Dublin, Ireland. The hub consists of almost 75 companies located in eight buildings, collectively employing 700 people.	
	Dog Patch Labs	Dogpatch Labs is a startup hub, located in the historic chq Building and in the heart of Dublin's Digital Docklands. Dog Patch Lab's mission is to accelerate the development of Ireland's startup ecosystem by providing a valuable	

		community from where you can grow, share knowledge and form connections.	
	Dublin City Education and Training Board	CETB provides, supports and co-ordinates education, training and youth services in Dublin City. Through the CETB services, there is a pathway for every learner. CETB promote Climate Action across a number of initiatives including Green Skills micro qualifications.	

Comhairle Cathrach Bhaile Átha Cliath
Dublin City Council

2030 Climate Neutrality Action Plan

Domain	Energy Systems						Mobility & Transport						Waste & Circular Economy						NBS and Green Infrastructure						Built Environment					
Levers	**TI**	**GP**	**SI**	**DP**	**FF**	**LC**	**TI**	**GP**	**SI**	**DP**	**FF**	**LC**	**TI**	**GP**	**SI**	**DP**	**FF**	**LC**	**TI**	**GP**	**SI**	**DP**	**FF**	**LC**	**TI**	**GP**	**SI**	**DP**	**FF**	**LC**
NATIONAL GOVERNMENT STAKEHOLDERS																														
Department of the Taoiseach		x						x						x						x						x				
Department of Finance					x						x						x						x						x	
Department of Public Expenditure and Reform					x						x			x	x		x						x						x	
Department of the Environment, Climate and Communications		x			x			x						x				x							x	x				
Department of Housing, Local Government and Heritage					x			x							x					x					x	x	x		x	
Department of Health								x		x		x								x	x	x				x				
Department of Transport			x				x	x				x		x					x											
Department of Justice								x		x						x														
Department of Enterprise, Trade and Employment	x		x						x				x		x			x	x		x		x	x	x		x		x	
Department of Agriculture, Food and the Marine							x						x	x	x				x	x				x		x				
Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media			x			x			x			x			x			x			x			x			x			x
Commission for Regulation of Utilites		x												x						x						x				
Office of Public Works																				x		x	x		x	x			x	
Environmental Protection Agency				x		x				x		x				x		x				x		x				x		x
National Transport Authority							x	x		x	x									x						x				
Sustainable Energy Authority of Ireland	x		x	x	x	x	x		x		x														x	x	x	x	x	
NON GOVERNMENT STAKEHOLDERS																														
EirGrid	x		x	x																										
Electricity Supply Board (ESB)	x			x			x		x	x	x														x		x	x		
Uisce Eireann	x			x									x			x				x				x						
Dublin Bus/ CIE	x						x		x	x																				
Irish Rail/ Dart	x						x																							
TransDev	x			x					x	x																				
Waterways Ireland	x			x			x												x			x								
Irish Green Building Council	x		x	x		x		x	x	x		x						x		x		x		x		x	x	x		x
Irish Planning Institute				x		x	x	x	x	x		x						x		x		x		x		x	x	x		x
Dublin Port Company	x		x	x			x						x		x	x		x			x	x		x						

Table IX. Summary of stake holders and where they may be key in as levers in the various emissions domains.

3 Part B – Pathways towards Climate Neutrality by 2030

Part B represents the core of the CCC Action Plan, shaped by local authorities, local businesses, and stakeholders, comprising of the most essential elements: scenarios, strategic objectives, impacts, action portfolios and indicators for monitoring, evaluation, and learning.

3.1 Module B-1 Climate Neutrality Scenarios and Impact Pathways

Module B-1 "Climate Neutrality Scenarios and Impact Pathways" lists and describes impact pathways, early and late outcomes and direct and indirect impacts[3] (co-benefits) according to and adapted from the NetZeroCities Theory of Change and the CCC Action Plan Guidance – clustered by fields of action.

- List of impact pathways, selected from or inspired by the NetZeroCities Theory of Change, including early and late outcomes (strategic objectives) and levers of change structured along the fields of action.
- Descriptions of the impact pathways, summarising their relationship with key priorities and strategic interventions and with the analysis developed in Part A

[3] The NetZeroCities Indicator Framework, a set of indicators for monitoring direct and indirect impacts of the impact pathways may be useful when selecting impacts, as can the numerous Factsheets available in the Knowledge Repository on the NZC Portal.

Table X Table B-1.1: Impact Pathways						Fields of Action/ Emissions				
Foundations	Systemic levers	Early changes (1-2 years)	Late outcomes (3-4 years)	Direct impacts (Emission reductions	Indirect impacts (co-benefits)	Energy System	Mobility & Transport	Waste & Circular Economy	Green Infrastructure & NBS	Built Environment
Resilient City	Governance & Policy	Changes in National Policy that support district heating, micro renewable generation	Policy incentives in place to support technology uptake and investment	90 MW of electricity to produce heat, which will replace fossil fuel heating systems	Improved health and well-being outcomes; reduced household spend on energy	X -		X -		X
	Finance & Funding	Policy that incentivises investment in critical infrastructure	Increased uptake of renewables	Acceleration of renewables bringing grid to zero emissions	Energy security and reduction in energy poverty; improved air quality	X				
			Funding of NBS as part of active travel projects to increase resilience to UHI and flooding events	Increased sequestration potential by NBS	Improved air quality, Improved water quality, reduce noise pollution		X		X	X
	Social Innovation	Partnerships for Innovation	New SMEs delivering innovative solutions for improving infrastructure and city resilience			X	X		X	
	Technology/ Infrastructure	New partnerships for innovation	Further development of DDHS and other renewable projects	Reduced dependence on Fossil Fuels	Increased energy security; employment opportunities					
			Development of a project that maximizes	Reduction in carbon intensity of	Increased energy security; reduced energy costs for	X		X	X	

			benefits of co-location of key critical infrastructure (Water treatment, Waste to Energy, and Energy Generation and Port)	electricity generation;	households					
	Learning & Capabilities	Increased opportunities to learn repair skills, cooking skills through Edible Dublin Food strategy	Emergence of social and circular businesses in	Reduction emissions at household level and food businesses	Employment and social cohesion; community wealth			X	X	X
		Increased opportunities to upskill in construction sector - Apprenticeships	Increased employment in retrofit sector	Reduction in emissions in household and commercial building sector	Employment; community wealth; social cohesion			X	X	X
	Democracy & participation	Community engagement in energy projects	Development and implementation of Community Energy project s with GAA and FSAI	Reduction in carbon intensity of energy system	Local employment; improved health outcomes	X				
		Community engagement in retrofit projects	Menu of best practices for engaging communities in regeneration projects for social housing	Reduction in emissions built environment evidence through reduced energy use	Local employment; improved health outcomes; Improved social cohesion Increased biodiversity	X				
Resource-Full City	Governance & Policy	Policy prioritising investment in biodiversity	Create a comprehensive research and management plan	Increased sequestration potential	Reduce tidal action resulting in coastal protection from erosion				X	

	Finance & Funding	Funding from national government	Comprehensive nature conservation and biodiversity/ biosphere action plans	Blue carbon capture	Reduce tidal action resulting in coastal protection from erosion				X	
	Social Innovation	Research on new ways to integrate NBS into the built environment	New SMEs focused on NBS	Increased sequestration potential	Improved air quality, water quality, reduced noise, improved health outcomes;				X	X
		Establishment of network of connected circular economy hubs focused on built environment and food sectors	Expansion of hubs to address textiles and other waste streams	Reduce emissions from waste	Employment opportunities; social cohesion; reduction in vacant properties.			X	X	X
	Technology/ Infrastructure	Increased availability of segregated waste in public realm	Shared composting facilities at neighbourhood level	Reduction emissions at household level	Increased social cohesion			X	X	
			Shared composting facilities in all commercial districts with high proportion of food businesses	Reduction emissions at commercial level	Improved soil health within the city and externally.			X	X	
	Learning & Capabilities	Increased opportunities to learn repair skills, cooking skills	Emergence of social and circular businesses	Reduction emissions at household level	Employment and social cohesion; community wealth			X	X	
		Promoting awareness of biodiversity in the city	Opening of biodiversity discover centres	Increased sequestration potential	Improved health and well-being, air quality. Increased connection to nature, fostering desire to protect, resulting in better buy-in to nature				X	

					management and climate action					
		Building capacity of SMEs to measure climate impacts of their supply chains and operations	Established training programme for SMEs in all sectors	Reduction in emissions from built environment, waste, Transport and stationary energy	Employment opportunities; social cohesion, vibrant neighbourhoods	X	X	X		X
	Democracy & participation	Increased number of community gardens and growing opportunities	De-paving of driveways	Increased sequestration potential	Social cohesion, improved health and wellbeing; slow the hydropath – UHI and flood risk reduced			X		X
Creative City	Governance & Policy	Clear policy on EV Instructure in the public domain	EV car sharing companies	Reduction in ICE vehicles leading to a reduction in emissions	Improved air quality, reduced car ownership	X	X			X
	Finance & Funding	Policy that incentivises investment in retrofit that is not grant dependent	Increased uptake of retrofit	Reduced demand for energy	Energy security and reduction in energy poverty, improved indoor environments; reduction in household spend on energy	X		X		X
	Social Innovation	Development of decarbonisation zone plans	Implementation of decarbonisation zone plans	Reduction in emissions across all domains, and increase in sequestration	Improved health outcomes; employment opportunities; reduced traffic and associated risks; improved air quality; water quality and noise levels; improved ecosystem health	X	X	X	X	X
	Technology/ Infrastructure	Expansion of innovation districts	Robust data monitoring system that	Reduction in emissions across all	Improved health outcomes; employment	X	X	X	X	X

			supports citizen science	domains, and increase in sequestration	opportunities; reduced traffic and associated risks; improved air quality; water quality and noise levels; improved ecosystem health					
	Learning & Capabilities	Establishment of community hubs in libraries that support repair skills development	Network of maker spaces; library of things	Reduction in emissions from waste	Improve economic opportunities, social cohesion			X		
		Network for knowledge exchange established with IUA universities	Network expanded to include non IUA third level institutions		Improve economic opportunities, social cohesion					
	Democracy & participation	Co-creation workshops with citizens to create solutions for decarbonisation	Toolkit for co-creation created		Social cohesion; improved health and well-being; increased volunteering rates	X	X	X	X	X
Social City	Governance & Policy	Health in all policies through consideration of costs to human health	Normalised use of social determinants of health to assess policy impact (Climate readiness toolkit)	Increased sequestration of emissions, reduction of emissions in health sector	Improved health and well-being ; social cohesion					
		Policy to allow red light cameras	Vulnerable Road user laws	Reduction in emissions from private cars on the road;	Increased safety and improved health and well-being; improved air quality					
	Finance & Funding	Investigation of finance mechanisms through insurance to support the	Increased funding for the delivery of high quality public realm, parks, and green spaces	Sequestration of emissions; reduce emissions from transport;	Increased safety and improved health and well-being; improved air quality; improved water quality; social cohesion; improved		X	X	X	X

		delivery of high quality public realm, parks and greenspaces			economy					
	Social Innovation	Development of best practice guidelines for re-use of materials in public realm and parks projects	Development of a material re-use database for street furniture	Reduction in emissions from construction waste	New economic opportunities – emergence of SMEs			X	X	
	Technology/ Infrastructure	Introduction of red-light cameras	Automated ticketing for road infractions	Reduced emissions from Transport	Increased safety; reduced traffic related risks		X			
	Learning & Capabilities	Pilot learning about climate action through play	Established programme linking play and climate action.	Reduced emissions from transport and the built environment	Improved health and well-being; social cohesion		X			X
	Democracy & participation	Establishment of a citizen led network for emergency preparedness	Embedded in emergency response plans		Improved health and well-being; social cohesion					
CNAP Actions	Governance & Policy	Improved communication of policy	Whole of society approach to climate action	Sequestration of emissions; reduce emissions from transport, built environment etc	Improved health and well-being; social cohesion	X	X	X	X	X
	Finance & Funding	Investigation of barriers to financing of climate action projects	Development of recommendations for unlocking barriers to climate finance	Sequestration of emissions; reduce emissions from transport, built environment etc		X	X	X	X	X
	Social Innovation	Deployment of EV ambulances	Transition of ambulance fleet	Reduced emissions from	Improved health and well-being; social					

		with BUMBLEANCE	to EVs	transport sector	cohesion					
	Technology/ Infrastructure		Expansion of challenge led approach to external stakeholders	Increased sequestration of emissions, reduction of emissions	Achievement of corporate vision for the city.	X	X	X	X	X
	Learning & Capabilities	Workshops with external stakeholders to support a systems approach to climate action	Normalisation of systems approaches to policy development	Increased sequestration of emissions, reduction of emissions	Increased safety and improved health and well-being; improved air quality; improved water quality; social cohesion; improved economy	X	X	X	X	X
	Democracy & participation	Improved communication on the benefits of climate action to well-being	Accelerated delivery of Bus Connects, Dart+, and MetroLink	Increased sequestration of emissions, reduction of emissions	Increased safety and improved health and well-being; improved air quality; improved water quality; social cohesion; improved economy	X	X	X	X	X
Operations and Service Delivery Actions	Governance & Policy	Apply a challenge led approach to foster interdisciplinary action	Normalised cross departmental working	Increased sequestration of emissions, reduction in emissions	Achievement of corporate vision for the city.	X	X	X	X	X
	Finance & Funding	Investigation of finance mechanisms through insurance to support the delivery of high quality public realm, parks and greenspaces	Increased funding for the delivery of high quality public realm, parks, and green spaces	Sequestration of emissions; reduce emissions from transport;	Increased safety and improved health and well-being; improved air quality; improved water quality; social cohesion; improved economy	X	X	X	X	X
	Social Innovation	Development of tenant guide that promotes	New programmes that support social	Sequestration of emissions; reduce	Social cohesion; improved health and well-being; increased	X	X	X	X	X

		sustainable living	entrepreneurship	emissions from transport;	volunteering rates					
	Technology/ Infrastructure	Use of small business innovation research grants to encourage innovation	Scaling out of solutions	Increased sequestration of emissions, reduction of emissions	Increased safety and improved health and well-being; improved air quality; improved water quality; social cohesion; improved economy	X	X	X	X	X
	Learning & Capabilities	Co-creation workshops with staff to create solutions for decarbonisation	Toolkit for co-creation created		Social cohesion; improved health and well-being; increased volunteering rates	X	X	X	X	X
	Democracy & participation	Participation in events that support sustainable lifestyles			Increased safety and improved health and well-being; improved air quality; improved water quality; social cohesion; improved economy	X	X	X	X	X
Implementation	Governance & Policy	Apply a challenge led approach to foster interdisciplinary action	Normalised cross departmental working	Increased sequestration of emissions, reduction in emissions	Achievement of corporate vision for the city.	X	X	X	X	X
		Health in all policies through consideration of costs to human health	Normalised use of social determinants of health to assess policy impact (Climate readiness toolkit)	Increased sequestration of emissions, reduction of emissions in health sector	Improved health and well-being ; social cohesion	X	X	X	X	X
	Finance & Funding	Investigation of barriers to financing of climate action projects	Development of recommendations for unlocking barriers to climate finance	Sequestration of emissions; reduce emissions from transport, built environment		X	X	X	X	X

				etc						
	Social Innovation	Successful implementation of Dublin Let's Move	Implementation of new Dublin Let's Challenges	Reduced emissions from transport and the built environment	Improved health and well-being; social cohesion; Achievement of corporate vision for the city.	X	X	X	X	X
	Technology/ Infrastructure	Successful implementation of Terrain AI	Expansion of Terrain AI to assist in monitoring of impacts with integration of health and well-being indicators	Reduced emissions from transport and the built environment	Improved health and well-being; social cohesion	X	X	X	X	X
	Learning & Capabilities	Development of staff capacity and elected representatives to communicate climate action			Improved health and well-being, air quality. Increased connection to nature, fostering desire to protect, resulting in better buy-in to nature	X	X	X	X	X
	Democracy & participation	Co-creation workshops with citizens to create solutions for decarbonisation and climate resilience and just transition	Toolkit for co-creation created		Social cohesion; improved health and well-being; increased volunteering rates	X	X	X	X	X

B-1.2: Description of impact pathways

Foundations for Achieving Our Vision

Achieving climate neutrality requires collaboration. Our plan is structured our four foundations A Resilient City, A Resource-Full City, A Creative City and A Social City that are connected by actions that are interdependent. (These actions are further supported by our operations and service delivery actions; all can be found in Climate Neutral Dublin 2030). These foundations were identified through internal consultation with staff through surveys, and workshops asking staff - who are a community within the city and represent people of different ages, gender and race, who have a lived experience of the city - what their vision of Dublin would be in 2030. Overwhelmingly, people had future visions of a city that is greener, has a vibrant cultural scene, and is safe to move around by foot, by bike, or public transport, and has restaurants that serve in season and locally grown food. That we are all proud of our city and respect it

Figure 25 Foundations and Actions in Climate Neutral Dublin 2030

To support systems thinking, and to briefly explain why actions are associated with multiple indicators, building on the experience of our first climate action plan we moved monitoring away from one action and one KPI to groups of actions monitored by a headline indicator and cross cutting indicators. This approach is further supported by the Climate Readiness Toolkit.

Mitigation of Emissions

At present we monitor the emissions stemming from our operations and service delivery on a yearly basis and this is reported in our CCAP Annual Reports; based on analysis undertaken by Codema and reported to SEAI's public sector monitoring and reporting system. Our emissions were decreasing, and this was attributable to the increasing volume of renewables on the national grid. Citywide emissions are included in the National Inventory and reductions are not in line with targets. Further, the latest EPA projections show that Ireland as a whole is off target.

Further DCC has signed the voluntary EU Covenant of Mayors (CoM) for Climate and Energy. This

commits us to supporting the implementation of the EU 55% greenhouse-gas reduction target by 2030 and the adoption of a joint approach to tackling mitigation and adaptation to climate change. However, our actions on mitigation need to cover citywide emissions to align with the CoM. This needs to be addressed in our new plan.

As stated, we need to spatially link our emissions while also giving consideration to social, environmental and economic factors. This is work that we will achieve through partnerships with academia such as Terrain AI,

Adapting to Climate Change

Making Dublin resilient to climate change is a target of CCAP, this calls for adapting the city and residents for a future where we live with the impacts of climate change, such as flooding, extreme temperatures, and extreme weather events, that are locked in and are prepared for the unknown impacts.

Uncertainty adds to the challenge of implementing actions that contribute to the city's resilience. Despite this DCC has made progress in the implementation of actions that contribute to our overall resilience, particularly in the use of nature-based solutions to respond to flood risk in the city. However, we have not adequately responded to other known climate risks, such as heat.

Further, the long-term challenge is ensuring that the adaptation actions we implement are just. The implementation of city development plan is vital to making the city and residents resilient to climate change. The decisions we make about land-use and land-use change will determine our adaptive capacity. The location of housing, employment determines our vulnerability and exposure to climate risk.

We need to map our hazards, risks and vulnerability and use this to inform our decisions and investments.

Theory to Practice: Collaborative Systems Change

The process for developing the first CCAP was collaborative, though it focused on fostering internal collaboration. That was intentional, as was focusing on what Irish Local authorities are responsible for. The plans were criticized for not being ambitious but- you can't have systems change without an understanding of the current system.

We will need to take internal collaboration further and develop a deeper understanding of the barriers to our leadership in climate action, and identify the changes needed to enable ownership across the organisation.

We will need to realise our vision and mission by actively engaging residents of the city, academia, businesses and communities to achieve systems change that improves quality of life for all.

Climate mitigation actions focus primarily on CO_2e, it is not the only measure of climate action success. Nor does it capture the targets linked to climate adaptation actions. Other critical vitals that provide important indicators of success that are linked to our targets for a just transition, climate resilience and 51% reduction in emissions are:

- Weather patterns (rainfall, temperature) and events (frequency and intensity)
- Air Quality
- Water Quality
- Soil Health
- Biodiversity (Flora and Fauna)
- Noise Levels
- Population Health and Well-being
- Social Cohesion
- Economic indicators
- Traffic volumes

- Temperature comparisons across the city to better assess the urban heat island effect
- Measuring ground level Ozone
- Aero allergens
- Monitoring of disease vectors – mosquitos, flies, ticks, and invasive species.

Critically, each of these vitals should not be considered in isolation. Their 'health' status should contribute to the monitoring, assessment and analysis of an action's, a project's, or a programmes' contribution to climate objectives. Appendix 8 of Climate Neutral Dublin 2030, it is also included in section provides a framework – Climate Readiness Toolkit – developed from health impact assessment, to enable us to collect data to assess our performance on these vitals and their impacts on each other, and our targets. However, as mentioned, monitoring is a means for collaboration, as data to assess our climate vitals is often held by stakeholders external to Dublin City Council

3.2 Module B-2 Climate Neutrality Portfolio Design

Module B-2 "Climate Neutrality Portfolio Design" contains a project description for **each action planned** in the CCC Action Plan. These actions include interventions targeted at creating/enhancing carbon sinks to address residual emissions.

The actions described here **should not repeat** the actions resulted from existing policies, and plans, outlined in Section A-2.1. Those actions are, by definition, not part of the proposed action portfolio.

- A table of planned interventions grouped per field of action, including interventions by local businesses and industry (B-2.1).
- An outline of each action. The table contains all information for implementation (e.g., topic, kind of intervention, emission sector, scope, allocation, responsible actors, GHG reduction by gases and estimated costs), including interventions aimed at addressing residual emissions (incl. carbon sinks) (B-2.2).
- A summary of the actions and impact planned to address residual emissions (B-2.3).

Table XI B-2.1: Description of action portfolios - textual or visual			**Fields of Action**				
Foundations	Portfolio description		Energy System	Mobility & Transport	Waste & Circular Economy	Green Infrastructure & NBS	Built Environment
	List of actions	Descriptions					
Resilient City	R1 – Social Housing Regeneration	We are the largest landlord in the country, with a stock of 214 flat complexes and 10,000 houses, this is an opportunity to demonstrate and set the standard for sustainable living. We will build on our experience with energy retrofitting to prepare our housing for climate change. Our flagship project will be lower Dominick Street West. This project will demonstrate climate resilient housing retrofit that enables and encourages residents to live sustainably with ease through the provision of, for example: green spaces to grow, play and create; shared spaces to meet and innovate; segregated waste facilities, renewable energy generation (solar PV, geothermal and micro wind generation where feasible), and mobility options (shared bikes, micro mobility and EV charging). All social housing regenerations projects will have due regard to protected species such as Annex IV species and where appropriate bat roost surveys will be undertaken to inform such works. All regeneration projects will have due regard to the need to appropriately protect, conserve and enhance protected structures in accordance with protected structures legislation.	Yes	Yes	Yes	Yes	Yes
	R2 - Public Buildings Regeneration	Our social housing will serve as the exemplar for domestic buildings, our public buildings will demonstrate how heritage buildings can be adapted and retrofitted for a climate resilient future. As with our social housing, our buildings – 2 galleries, 22 libraries, 12 community centres, 17 sports and recreation centres, and operations depots – will demonstrate what is possible. All retrofitting and maintenance works will prioritise energy efficiencies, segregated waste facilities, renewable energy generation (solar PV, geothermal and micro wind generation where feasible), and mobility options (shared bikes, micro mobility and EV charging); having due regard to environmental sensitivities such as Archaeology, European sites, biodiversity and amenity value etc.	Yes	Yes	Yes	Yes	Yes
	R3 - Climate Resilient Infrastructure	The city's infrastructure that enables us to live, work and play needs to be resilient. Ensuring that our drainage system, utilities, roads, public lighting and communications networks are maintained and upgraded is essential.	Yes	Yes	Yes	Yes	Yes

		This requires working in partnership with Irish Water, the OPW, ESB, Eirgrid, NTA, and DECC. Together we will insure that these critical systems are prepared for the future. Our flagship energy project, the Dublin District Heating System (DDHS) will contribute to our energy security by providing an alternative to electricity based heating systems. This will be further supported by geothermal. DCC is also facilitating the delivery of public electric vehicle charging infrastructure in collaboration with key partners including ZEVI and ESB Networks. Public Lighting Upgrades will prioritise energy efficient systems while ensuring the lumen levels and spectral range are maintained or reduced/controlled to avoid effects to biodiversity. All infrastructure projects under this action will have due regard to environmental sensitivities such as Archaeology, European sites, biodiversity and amenity value etc.					
	R4 - Edible Dublin: Food Strategy	Feeding a city in a time of climate change is not easy. Our food strategy sets out how we are working to ensure all residents of Dublin City will have access to healthy and affordable food by addressing the impacts of climate change on our food system from production and distribution to consumption and disposal. The implementation of this strategy requires partnerships to deliver on the four pillars: 1. A Healthy Citizens, Healthy City; 2. Growing Food at Home; 3. Cooking and Creating; 4. Farm to Fork and Back.	No	No	Yes	Yes	Yes
Resource-Full City	RF1 - A Nature Full City	Nature provides us with resources to live and thrive. Delivering on our parks and greening strategies will increase the green cover of the city and improve air quality, water quality, and health and well-being. Prioritising green infrastructure that connects existing parks will not only improve the look and atmosphere of our streets making your commute more enjoyable, but will also provide pollinators, birds, and other animals with food and places to live. Ensure connectivity projects priorities ecological connectivity through complex hedgerow development and maintenance, while ensuring barrier effects such as inappropriate lighting are avoided. Providing the public with the opportunity to learn about biodiversity is essential to insuring that the nature based solutions we implement thrive. The Dublin Bay UNESCO Biosphere Discovery Centre and the Liffey Vale Biodiversity Centre, will provide people with the opportunity to learn about our natural heritage and how we can all take steps to conserve our environment. Natural heritage education will focus on challenging environmental perceptions to foster environmental stewardship through appropriately managed engagement with nature. All infrastructure projects under this action will have due regard to environmental sensitivities such as Archaeology, European sites, biodiversity and amenity value etc.	No	No	Yes	Yes	Yes

		Furthermore works ensure appropriate bat roost investigation surveys and appropriate measures taken to ensure no significant impacts occur to any Annex IV species.					
	RF2 - Restoring the City's Rivers	Growing around the River Liffey and its tributaries, residents of the city flourished, harvesting vegetables in the hinterlands, trading livestock at marts in the city, and bringing spices in from the port. Our city's rivers and canals have defined Dublin. Their restoration plays a vital role in the city's future. In our development plan we have committed to de-culverting and giving our vital rivers space. Measures will also see our rivers provide people with places for recreation and connection with nature. Our restoration plans for the River Santry demonstrate what is possible, and we will re-imagine how we celebrate the River Liffey. All recreational activities being promoted or developed under the action will have due regard to all environmental constraints such as Biodiversity and European sites, where required appropriate visitor management plans and appropriate signage will be developed to ensure appropriate management processes are put in place to avoid significant adverse effects. Similarly, infrastructure works will have integrated environmental considerations within the feasibility assessment.	No	No	No	Yes	Yes
	RF3 – Re-use of Building	We know that the lowest carbon building is one that is already built. Re-using existing buildings provides an opportunity to build on existing programmes, for example adaptive re-use which is converting vacant commercial buildings into housing. This also aligns with the EU Performance of Buildings Directive. We will also use vacant buildings to support enterprises by identifying buildings suitable for incubation hubs and community spaces. All reuse projects will have due regard to the need to appropriately protect, conserve and enhance protected structures in accordance with protected structures legislation.	No	No	Yes	Yes	Yes
	RF4 - Ecosystem of Social and Circular Enterprises	We continue to nurture a healthy ecosystem of social and circular small and medium enterprises by providing supports to entrepreneurs through initiatives like MODOS, Micro for Green, and SoCircular. Through our partnership with Belfast City Council, we are developing physical and regulatory infrastructure components essential to support SMEs to innovate and create a Connected Circular Economy on the Island of Ireland.	No	No	Yes	No	Yes
Creative City	C1 - Community Hubs	Our Libraries are community hubs where people of all ages meet and share ideas. Expanding the services of our libraries can support climate action through maker spaces, workshops, and libraries of things. We know from the work of our Culture Company that there are artists and makers who are active across the city and ready to share their knowledge and draw communities together.	No	Yes	Yes	Yes	Yes
	C2 – Networks for	Dublin city is home to world class third level institutions nurturing Ireland's	Yes	Yes	Yes	Yes	Yes

	Knowledge Exchange	next generation of leaders. We are establishing a partnership programme that brings academics, students and the city together to develop creative solutions to the challenges we face. Together, we will be at the cutting edge of research and innovation driving systems change.					
	C3 – Innovation Districts	Our Smart City programme is developing innovation districts that bring together diverse SMEs to create solutions that improve the city. Smart Districts are strategically selected locations across Dublin where innovation projects are fast-tracked. Smart Districts are designed in partnership with citizens, industry, and academia. Each Smart District is unique, with projects designed to meet the specific needs of those who live and work there. Having due regard to environmental sensitivities such as local human receptors, European sites and biodiversity, and the need to appropriate protect and conserve protected structures.	Yes	Yes	Yes	Yes	Yes
	C4 – Decarbonisation Zones	We will build on this knowledge and experience gained from our smart districts and develop our two decarbonisation zones in Ringsend and Poolbeg, and Ballymun. The development of the decarbonisation plans for Ringsend and Poolbeg, and Ballymun, will be a collaborative effort to insure that the unique strengths of each zone come to the fore and permits ownership of the challenges and solutions. 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.	Yes	Yes	Yes	Yes	Yes
Social City	S1- A Connected Active Travel Network	Moving people through the city to meet friends and family, to go to work or school, or to simply explore must be easy and safe. We will bring together 95% of the population of the City within 400 metres of the active travel network; making it easier for people to walk, cycle, wheel or scoot to their destination or for leisure, day or night. Community Participation Events to celebrate new active travel routes as they open and encourage use in a responsible manner to avoid/minimise impacts to biodiversity and the environment. Ecological connectivity will be considered with regard to hedgerow development and maintenance as well as the avoidance of barrier effects such as inappropriate lighting. All active travel projects will have due regard to environmental sensitivities such as Archaeology, European sites, biodiversity and amenity value etc.	No	Yes	Yes	Yes	Yes
	S2 – Neighbourhoods are the Heart	Dublin is said to be a city of villages, and these villages have strong identities. This is a strength. Nurturing our neighbourhoods to ensure that they continue to thrive and support strong social networks is vital in preparing for climate change and preventing adverse impacts on our health and well-being, during and in the aftermath of an extreme event. We will build on our existing initiatives such as quiet zones and sustainable energy communities, pride of place, and tidy towns to increase our social, and	No	Yes	Yes	Yes	Yes

		economic resilience. A focus shall be placed on integrating climate action with considerations relating to pollinator friendly biodiversity to ensure a win-win scenario are achieved.					
	S3 – Our Parks are Playful Places for All Ages	"If you find yourself in an inconspicuous place, forget about time and all your pressing tasks, and simply watch and listen, you will develop a kind of reverence for the games of children, for their inexhaustible ingenuity, for the ways in which the rules they devise are more subtle, less attuned to competition and more geared to enabling everyone to have a chance, than the team games devised for them by adults" (Ward 1979, p.76) Play is not often connected to climate action, but it is important and it is not limited to children and young people.	No	No	Yes	Yes	Yes
	S4 – A Re-imagined Public Realm	Public squares and the spaces in between are where life's stories are born. In a time of climate change our public realm has a lot to do. Not only will public spaces need to bring people together to play, chat, and create, they must be resilient to climate change impacts – providing shade as temperatures rise and water storage when the rainfall is intense or absent. Aligning our plans for a vibrant night-time economy, providing public lighting, street furniture, waste segregation, active travel and greening will be a critical part of re-imagining public spaces that define our city. All lighting projects will have low lumens directional lighting designed with regard to ecological sensitivities. All works will due regard to environmental sensitivities such as Archaeology, European sites, biodiversity and amenity value etc.	Yes	Yes	Yes	Yes	Yes
CNAP Actions	CCC1 -Private Home retrofit (included in SEC action)	Retrofit of private sector housing is vital to achieving neutrality. While retrofit is happening, it needs to be accelerated. DCC will take learnings from social housing retrofit for private sector.	Yes	Yes	Yes	Yes	Yes
	CCC2 - Explore community Energy Projects with GAA and FAI	Supporting the transition of sports facilities in the decarbonisation is not only an opportunity to reduce emissions but engage people. Working with GAA through green clubs and encouraging the development of a similar model for the FAI will support a just transition.	Yes	Yes	Yes	Yes	Yes
	CCC3 - Support Non Residential Retrofit Retrofit	Dublin is home to 15% of Ireland's Commercial Buildings (109,000); and public buildings.	Yes	No	No	No	Yes
	CCC4 - Public Transport promotion with Dublin Bus and Luas	Work with Dublin Bus and Transdev to encourage use of public transport, as part of multi-modal commuting for work, school and play.	No	Yes			
	CCC5 - Support third level institutions in the city in accelerating the delivering of their	As public sector bodies' third level institutions are required to achieve a 51% reduction in emissions. Beyond these institutions, recognising their role as leaders Trinity College Dublin, University College Dublin, Technical University Dublin and Dublin City University are supportive of Dublin City in	Yes	Yes	Yes	Yes	Yes

	climate action plans	the Mission. Recognising their leadership in research and innovation collaboration and co-creation to accelerate the city's transition if vital.					
	CCC6 - BUMBLEance Fleet Transition to EV	BUMBLEance is a unique service in the Irish Healthcare sector. It is a community ambulance serving disadvantaged communities, providing a transport service for sick children. The transition of their fleet of vehicle is an opportunity to demonstrate that emergency vehicles can be electrified and still deliver a high standard of reliable care.	No	Yes	No	No	No
	CCC7 - Exploration of Systemic Finance Architecture to achieve a robust circular Economy	Partnership with Centre for Public Impacts to deep dive into the challenge of attracting finance in various forms to support the delivering of housing projects that embed circular economy principles.	Yes	No	Yes	Yes	Yes
	CCC8 - Codling Wind Park	Codling Wind Park will be located approximately 13 – 22 kilometres off the coast of County Wicklow, between Greystones and Wicklow Town. The overall size of the array site is 125 km2. Previously it had been had thought around 100 turbines would need to be constructed but, in April 2024, the project confirmed a maximum of 75 and a minimum of 60 turbines would now be required. Although this is a significant reduction in wind turbines, the development will still generate 1,300 megawatts (MW) of clean electricity, enough to power over one million Irish homes.	Yes	No	No	No	No
	CCC9 – Bus Connects: Dublin Network Redesign	The overall network represents a major investment in enhanced bus services, delivering a 35% increase in annual "in-service" kilometres, a significant increase in overall capacity and frequency for customers, as well as more evening and weekend services. This new bus network plan took into account issues raised by over 72,000 submissions at the various stages of public consultation. The implementation of the new network, known as the Dublin Network Redesign Project, is being delivered in phases over a number of years, and commenced in 2021.	No	Yes	No	No	No
	CCC10 – Dart Plus	DART+ is the transformative programme that will ensure train travel is at the heart of Ireland's sustainable transport network. Funded under the National Development Plan by the National Transport Authority, DART+ is an investment that will double the capacity and treble the electrification of the Greater Dublin Area network, facilitating sustainable mobility and development to enhance quality of life in our capital and its surrounding counties. The overall programme will provide electrification of lines on DART+ West to Maynooth/M3 Parkway, on DART+ South-West to Hazelhatch and DART+ Coastal North to Drogheda. DART+ Coastal South will also see key infrastructure works as far as Greystones to allow more	No	Yes	No	No	No

		trains to operate.					
	CCC 11 – MetroLink North	MetroLink is a transformative piece of new public transport infrastructure, the first of its kind in Ireland. It will comprise a high-capacity, high-frequency, modern and efficient metro railway, with 16 new stations running from Swords to Charlemont. The alignment will link Dublin Airport, Irish Rail, DART, Dublin Bus and Luas services and create a fully integrated public transport network for the Greater Dublin Area (GDA). The MetroLink alignment is shown in adjacent map.	No	Yes	No	No	No
Operations and Service Delivery	S1 Sustainable Work Etiquette	Sustainable Work Etiquette Guide on email use, video conference calls, printing, turning computers off, lights off, paper use and other stationary supplies to reduce energy use and emissions.	Yes	Yes	Yes	Yes	Yes
	S2 Staff Active Travel	Promote shift to active modes of commuting to reduce transport emissions.	No	Yes	No	No	No
	S3 Staff Mobility Hubs	Implement Smart Mobility Hubs across DCC offices where feasible (Civics, Marrowbow Lane, Firebrigade).	No	Yes	No	No	No
	S4 Staff Energy Awareness	Continued staff energy awareness in Council buildings.	Yes	No	No	No	Yes
	S5 Staff Modal Split	Conduct detailed study of staff modal split to identify why and how staff choose modes to inform measures aimed at reducing staff travel emissions.	No	Yes	No	No	No
	S6 Eco Driver Training	Occupational eco driver training for fleet staff and all staff who want training.	No	Yes	No	No	No
	S7 Risk Workshops	Risk workshops to assess the likely impacts of climate change on Council services and across the city.	Yes	Yes	Yes	Yes	Yes
	B1 Flat Complex Regeneration	Undertake programme of flat complex regenerations.	Yes	Yes	Yes	Yes	Yes
	B2 Housing Stock Improvement	Continuation of planned incremental improvement of housing stock (voids, extensions, boiler replacement, retrofit and energy efficiency programme).	Yes	Yes	Yes	Yes	Yes
	B3 Social Housing Retrofit	Continue to work with appropriate external stakeholders to deliver social housing at a BER B or Cost optimal standard.	Yes	Yes	Yes	Yes	Yes
	B4 NBS in Social Housing	Incorporate nature-based solutions in all new Council housing developments and maintain.	Yes	Yes	Yes	Yes	Yes
	B5 SuDS in Council Buildings	Implement Sustainable urban Drainage Guidelines in Council buildings where feasible.	No	No	No	Yes	No

	B6 Water Infrastructure	Implement infrastructure to improve and reduce water use in DCC buildings.	Yes	No	No	Yes	Yes
	B7 DEC	Display Energy Certificates for public buildings.	Yes	No	No	No	No
	B8 Compliance with Building Regs	Achieve (& exceed where possible) compliance with current building regulations with the provision of on-site renewable energy in all DCC building projects, new build or retrofit.	Yes	Yes	Yes	Yes	Yes
	B9 Energy Management	Annual Monitoring & Reporting to SEAI supported by ISO50001 compliant energy management system.	Yes	No	No	No	Yes
	OS1 Green Public Procurement	Use Green Public Procurement where feasible in all procurement of goods and services to ensure adverse environmental impacts are avoided and positive environmental impacts are enhanced.	Yes	Yes	Yes	Yes	Yes
	OS2 Climate Audit	Undertake annual audits of climate expenditure that considers cost effectiveness, efficiency, governance, relevance, coherence and impacts (environmental and societal).	Yes	Yes	Yes	Yes	Yes
	OS3 Ecological Assessments	Ecology Assessment to be carried out on all DCC projects with the intent to enhance the site's ecological value and biodiversity	No	No	No	Yes	No
	OS4 Roads Maintenance	Regular maintenance of regional and local roads and active travel routes to mitigate risks.	No	Yes	No	No	No
	OS5 Canal Cordon Count	Carry out Canal Cordon Count to monitor modal shift and traffic volumes.	No	Yes	No	No	No
	OS6 School Zones	Increase number of school zones, where feasible.	No	Yes	No	No	Yes
	OS7 Promotion of Sustainable Travel	Dublin City Council to promote active travel and public transport	No	Yes	No	No	No
	OS8 Flood Monitoring	Monitoring of flood forecasting and warning system.	No	No	No	Yes	Yes
	OS9 Flood Risk Management	Implement flood risk management guidelines.	No	No	No	Yes	Yes
	OS10 Monitor Flood Risk	Monitor implementation of flood risk management guidelines in planning applications, having due regard for environmental sensitivities such as European sites, Biodiversity, Archaeology and amenity value etc.	No	No	No	Yes	No
	OS11 Emergency Response	Coordinate Emergency Response Plans and revise based on learnings from management of response to events, having due regard for environmental sensitivities such as European sites, Biodiversity, Archaeology and amenity value etc.	Yes	Yes	Yes	Yes	Yes

	OS12 Drainage and Flood Policies	Update DLA urban drainage and flooding policies promoting natural flood measures as a priority to inform new development plan.	No	No	No	Yes	Yes
	OS13 River Surveys	Develop and complete environmental surveys of all City rivers and estuaries as baseline surveys from which to monitor ecosystem health.	No	No	No	Yes	No
	OS14 Air Quality and Noise Monitoring	DCC is working in partnership with the EPA on expanding and enhancing ambient air quality monitoring in Dublin in accordance with the National Ambient Air Monitoring Programme.	Yes	Yes	Yes	Yes	Yes
	OS15 Waste Reduction infrastructure	Identify areas in need of infrastructure that supports re use, repair, repurpose, and free cycling.	No	No	Yes	No	No
	OS16 Waste Regulation	Monitor and enforce waste regulation.	No	No	Yes	No	No
	OS17 Circular Bring Centres	Identify opportunities of introducing circular economy principles in Bring Centre Depots and implement where appropriate.	No	No	Yes	No	Yes
	OS18 WEEE Collection	Expand Depot collection of WEEE products to all Depots, whilst ensuring such sites are operated in accordance with the requirements of the Waste Management Act and in a manner that does not result in environmental nuisance or pollution.	No	No	Yes	No	Yes
	OS19 Eco Friendly Street Cleaning	Use eco-friendly cleaning agents and manual methods where possible to align with Herbicide Policy.	No	No	Yes	Yes	Yes
	OS20 Sustainability Standards for DCC Events	Continue to develop sustainability guidelines and terms and conditions for any events supported, facilitated or organised by DCC, by reviewing terms and conditions for all events approved by DCC to incorporate possible sustainability conditions	Yes	Yes	Yes	Yes	Yes
	OS21 Embed Sustainability Standards for Events	Review terms and conditions for all events approved by DCC to incorporate possible sustainability conditions and integrated considerations for biodiversity and other environmental sensitivities.	Yes	Yes	Yes	Yes	Yes
	OS22 Fleet Conversion	Develop strategy to convert fleet to low emission vehicles based on sustainable energy/fuel sources; and ensure end of life plans are in place for vehicles.	No	Yes	No	No	No
	OS23 Seagrass	Monitor and prepare report on the seagrass (Zostera spp.) beds at Sandymount and Merrion Gates to inform conservation management	No	No	No	Yes	No

		of this area.					
	OS24 Wildlife Surveys	Conduct wildlife and biodiversity surveys.	No	No	No	Yes	No
	OS25 North Bull Island	Implement the North Bull Island Management Plan.	No	No	No	Yes	No
	OS26 Tree Strategy	Implement Dublin City Tree Strategy.	No	Yes	Yes	Yes	Yes
	OS27 Heritage Risk Management	Identify natural heritage at risk from climate change in Dublin City to inform planning and management decisions.	Yes	Yes	Yes	Yes	Yes
	EP1 Sustainable Living Guide for Social Housing Tenants	Develop and implement Sustainable Living Programme to engage Council Tenants on how they can reduce consumption of energy, and water.	Yes	Yes	Yes	Yes	Yes
	EP2 Bike Week	Hold Bike Week annually.	No	Yes	No	No	No
	EP3 EU Mobility Week	Host events as part of European Mobility Week.	No	Yes	No	No	No
	EP4 Pedestrian Days	Organise Pedestrian Days in areas with high footfall.	No	Yes	No	No	No
	EP5 Cycle Training	Cycle Training Programmes for 6th Class students / Pedal Power Labs*.	No	Yes	No	No	No
	EP6 Stories on the Move	Set up partnership and create a communications engagement and promotion platform for cycling and walking **- "Stories on the move".**	No	Yes	No	No	No
	EP7 Flood Awareness	Implement flood awareness campaign with the OPW following a holistic environmentally integrated approach.	Yes	Yes	Yes	Yes	Yes
	EP8 LAWPRO	The Council will work with the Local Authority Waters Programme in its support of communities and stakeholders in the delivery of local water quality projects and initiatives have due regard for environmental sensitivities such as Archaeology, European sites, biodiversity and amenity value etc.	No	No	No	Yes	No
	EP9 Flood risk management campaign	Communication and awareness campaigns on flood risk management and natural flood management measures.	Yes	Yes	Yes	Yes	Yes
	EP10 Climate Outreach	Implement an annual education and outreach programme to raise awareness of climate change.	Yes	Yes	Yes	Yes	Yes
	EP11 CPD Engineers	Engage with students about climate related projects through CPD	Yes	Yes	Yes	Yes	Yes

	Week	Programme/Engineers Week.					
	EP12 HESK	Monitor and develop the Home Energy Savings Kits in DCC's public libraries.	Yes	No	No	No	No
	EP13 Anti-Litter Campaigns	Run anti-dumping and anti-litter campaigns.	No	No	Yes	No	Yes
	EP14 Clean Up Days	Support and promote litter clean up days and initiatives.	No	No	Yes	No	Yes
	Ep15 LAPN Grants	Apply for LAPN (Local Authority Prevention Network) grants.	Yes	Yes	Yes	Yes	Yes
	EP16 Stop Food Waste	Create Stop Food Waste campaign for businesses and schools.	Yes	Yes	Yes	Yes	Yes
	EP17 Reuse Month	Promote Reuse Month annually.	No	No	Yes	No	No
	EP18 Leaf Composting	Provide public with information on leaf composting programme across the City and provide workshops.	No	No	Yes	Yes	No
	EP19 Tidy Towns	Support and promote Tidy Towns / City Neighbourhoods initiatives which have due regard for environmental sensitivities such as Archaeology, European sites, biodiversity and amenity value etc.	Yes	Yes	Yes	Yes	Yes
	EP20 Green Schools	Support and promote Green Schools and Annual Conference.	Yes	Yes	Yes	Yes	Yes
	EP21 Water and climate	Develop and implement an education programme to tackle climate issues related to the water sector.	Yes	Yes	Yes	Yes	Yes
	EP22 Household Waste Campaign	Promote recycling and the circular economy to householders through a range of workshops, talks and programmes.	No	No	Yes	No	No
	EP23 Rediscovery Centre	Continue to work with the Rediscovery Centre to promote sustainability.	Yes	Yes	Yes	Yes	Yes
	EP24 Sustainable SMES	Engage with relevant stakeholders and deliver an energy efficiency, circular economy and sustainability training programme targeting micro and small enterprises.	Yes	Yes	Yes	Yes	Yes
	EP25 Tree Planting	Tree-planting activities with schools including annual National Tree Week and National Tree Day.	No	No	No	Yes	No
	EP26 SoCircular	Continue to develop SoCircular as an initiative to encourage social and circular economy models among businesses in the city and to promote social and circular enterprises.	Yes	Yes	Yes	Yes	Yes

	EP27 EU Funding	Apply for EU funding to undertake innovative climate action projects and build partnerships.	Yes	Yes	Yes	Yes	Yes
	EP28 City Partnerships	Build partnerships with cities internationally to exchange best practice for climate action and implement learnings into all future plans and projects.	Yes	Yes	Yes	Yes	Yes
	EP29 UNESCO Biosphere	Implement and promote the objectives of the Dublin Bay UNESCO Biosphere Partnership and promote the work of the Biosphere	No	No	No	Yes	No
	EP30 Dublin Mountains Partnership	Work with the Dublin Mountains Partnership on implementing strategic plans and activities for Climate Change mitigation and biodiversity enhancement.	No	No	No	Yes	No
	EP31 Public Service Innovation Week	Public Service Innovation Week, host annual	Yes	Yes	Yes	Yes	Yes
	EP32 SuDS Retrofit events	Promote and encourage community involvement in the retrofit of SuDS in existing developments; having due regard to environmental sensitivities such as Archaeology, European sites, biodiversity and amenity value etc.	Yes	Yes	Yes	Yes	Yes
Implementation Actions	IM1 – Oversight by Steering Group	Proactive collaboration across internal departments, and with external agencies and organisations to implement and monitor the impacts of this climate action plan requires strong leadership from senior management. A Steering Group chaired by the Chief Executive to oversee the overall direction of progress and ensure that Dublin City Council, as an organisation is a leading light in decarbonisation, embedding climate resilience, facilitating co-benefits for climate and other environmental factors, and principles of equity in our operations and service delivery has been established. The Steering Group will ensure that internal structures are in place to foster ownership, accountability, and delivery of actions and projects are resourced; and provide quarterly reports to elected members via Strategic Policy Committees, and annually to the full Council.	Yes	Yes	Yes	Yes	Yes
	IM2 – Challenge Led Approach	Recognising the limitations of “change-as-usual”, our Plan is taking a challenge led approach to foster better coordination and increased engagement; and to unleash the collective intelligence of a variety of actors impacted by, and responsible for the change to be realised by our plan.	Yes	Yes	Yes	Yes	Yes
	IM3 – Monitoring	Without monitoring we will not know how we are progressing, what is working or not, and who we need to engage to implement changes necessary for climate neutrality. The actions in our plan are linked to headline indicators and sub indicators as well as our targets. Together the data from these indicators and targets provide a picture and a story of the	Yes	Yes	Yes	Yes	Yes

		impacts of our actions on quality of life in the city. Monitoring is also an opportunity for collaboration.					
	IM4 – Ireland& Dublin & You	Your active participation in the implementation of this climate action plan, which is about safeguarding our collective future is essential. We will keep you informed, engaged and active in this plan through our Climate Newsletter, events and reports to council.	Yes	Yes	Yes	Yes	Yes

Figure 26 below illustrates the connections between the actions in Climate Neutral Dublin 2030 and the 8 CNAP actions. The 95 Actions in Climate Neutral Dublin 2030 across the four foundations, implementation actions and operations and service delivery actions are those which are led by DCC. Many of the actions require partnership and collaboration with external stakeholders who are listed in the following sections. The 8 CNAP actions are led by external stakeholders, DCC is a collaborator and facilitator in the implementation of these actions, primarily through our steering group, challenges, and engagement.

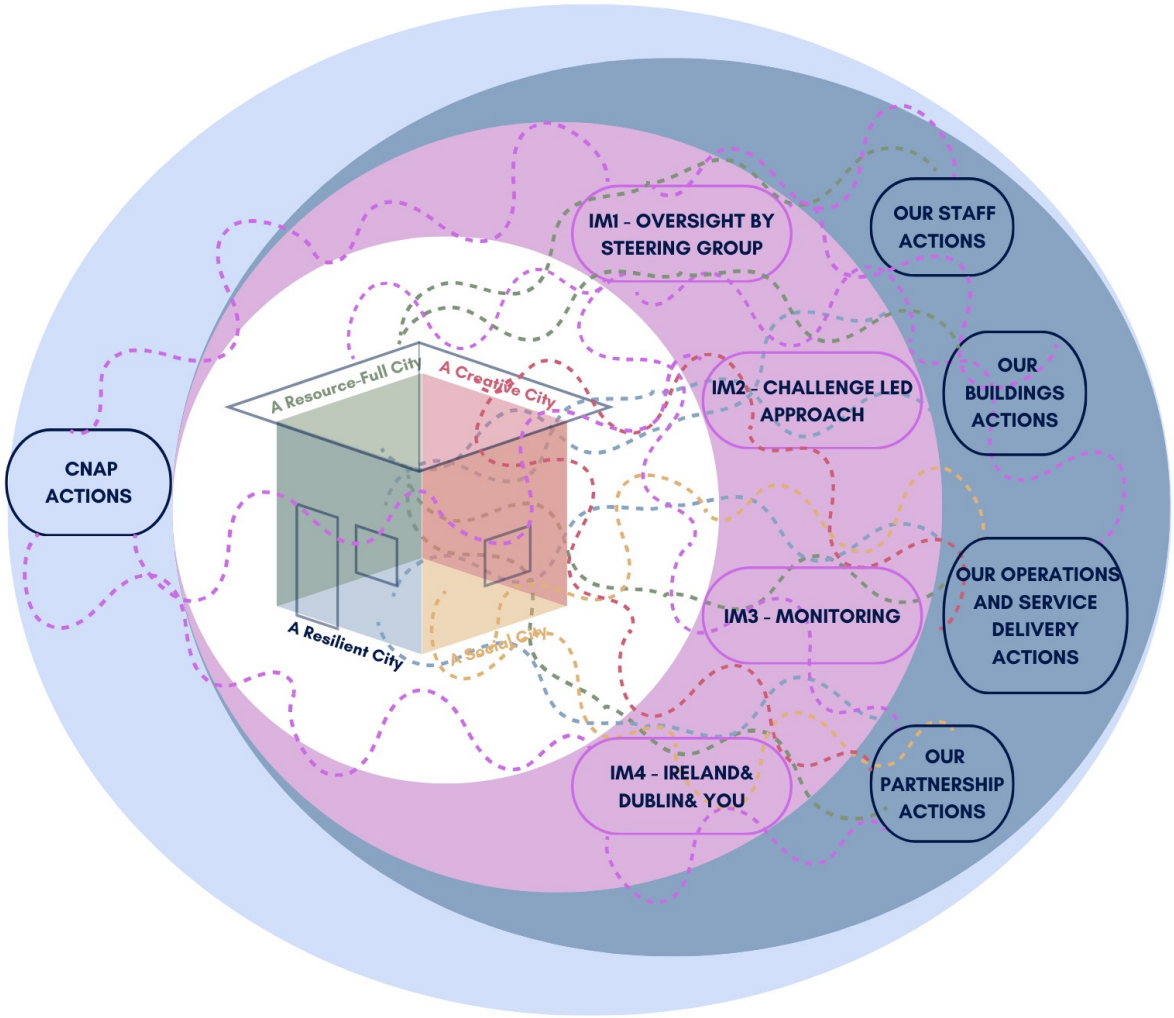


Figure 26 Relationship Between Actions

B-2.2.1: Individual action outlines		
Action outline	Action name	R1.1 Flagship project: Dominick St. Lower
	Action type	
	Action description	Project to offer sustainable best practice model of social housing, using learnings from the digital twin model. The Dominick St Estate was designed and built between 1960 and 1970 following demolition of former tenement housing. It consisted of eight flat blocks on the west and east side of Dominick Street Lower in the heart of the city centre. The new blocks were 'state of the art' and provided significantly improved living conditions for 198 families at the time. In 2010 Dublin City Council began a project to regenerate this estate due to ongoing issues with poor environmental conditions within the homes. The project was guided by a masterplan which prioritised sustainable place making. It included a site for a school, shops, a community centre as well as new apartments designed and built to meet the needs of old and young. The first phase of the regeneration – the east side - was completed in 2022 with a new apartment block and townhouses built to near zero energy building (NZEB) standard providing low-energy, bright, healthy homes. The masterplan envisioned similar redevelopment of the three blocks on the west side. However, with the need to reduce carbon emissions whenever and wherever we can, and recognition that 'The most sustainable building is the one we already have', City Architects with colleagues in the Housing Department decided to re-think the approach. • **Challenges:** While redevelopment of the blocks would enable construction of new homes with a very low operational carbon footprint, the carbon cost of demolition and construction could off-set any savings made in the operation of the building over its lifetime. The core objective of the Dominick Street Lower project is to develop an exemplar Climate Resilient Housing Solution to renovating Council flat blocks, which addresses current questions about retrofit and informs other renovation programmes (public and private).
Reference to impact pathway	Field of action	Energy, Built Environment, NBS
	Systemic lever	Technology/Infrastructure, Governance and Policy
	Outcome (according to module B-1.1)	Exemplar demonstration of resilient housing design that leads to policy that supports deep retrofit first and invests in adaptation of housing stock; reduction in stationary energy; transport, waste and AFOLU emissions. .
Implementation	Responsible bodies/person for	Dublin City Council, DHLGH, Community

	implementation	
	Action scale & addressed entities	North East Inner City
	Involved stakeholders	Department of Public Expenditure and Reform, Integrated Environmental Solutions (private sector), Internal departments
	Comments on implementation – consider mentioning resources, timelines, milestones	Initial project funded by Public Sector innovation fund determined that Deep Retrofit was the ideal option. Funding has been received to undertake deep retrofit alongside nature-based solution projects in the public realm surrounding the site
Impact & cost	Generated renewable energy (if applicable)	Likely Solar PV
	Removed/substituted energy, volume, or fuel type	Gas boilers
	GHG emissions reduction estimate (total) per emission source sector	Current BER E2 emissions to 2030 would be 1284 tCO2e; Retrofit BER B2 371 t CO2e for one block, Reduction is 2745 tCO2e
	GHG emissions compensated (natural or technological sinks)	Hard surfacing will be removed and replaced with nature-based solutions
	Total costs and costs by CO2e unit	Project demonstrated the challenges with assessing costs in Ireland due to inflation and other confounding factors such as labour availability and supply chains

B-2.2.2: Individual action outlines		
Action outline	Action name	R1.2 Oliver Bond House Regeneration (Phase I) R1.3 Constitution Hill Regeneration R1.4 Pearse House Regeneration R1.5 Integrate EV charging facilities in all flat complex regeneration projects
	Action type	
	Action description	Regenerate social housing, including shared spaces to meet and innovate; segregated waste facilities, renewable energy generation (solar PV, geothermal and micro wind generation where feasible), and mobility options (shared bikes, micro mobility and EV charging).
Reference to impact pathway	Field of action	Built Environment, Energy Systems
	Systemic lever	Technology/Infrastructure, Social Innovation
	Outcome (according to module B-1.1)	Exemplar demonstration of resilient housing design that leads to policy that supports deep retrofit first and invests in adaptation of housing stock.
Implementation	Responsible bodies/person for implementation	Dublin City Council, DHGLH, Approved Housing Bodies,
	Action scale & addressed entities	City Wide
	Involved stakeholders	Utilities Networks, Communities, An Bord Pleanála
	Comments on implementation – consider mentioning resources, timelines, milestones	Funding is challenged due to changing timelines and government priorities.
Impact & cost	Generated renewable energy (if applicable)	This is a requirement amount is to be determined – Solar PV will be included
	Removed/substituted energy, volume, or fuel type	TBD
	GHG emissions reduction estimate (total) per emission	Assume similar to Dominick St. BER E to BER B2 Potential reduction is **18,300 tCO2 e (based on 20**

	source sector	**buildings similar to Dominick Street)**
	GHG emissions compensated (natural or technological sinks)	Greening will be a key aspect of all social housing projects.
	Total costs and costs by CO2e unit	€56,220,000 for social housing projects

B-2.2.3: Individual action outlines		
Action outline	Action name	R2.1 Regeneration of DCC Civic Offices.
	Action type	
	Action description	Regeneration including renewable energy generation, waste segregation and greening measures
Reference to impact pathway	Field of action	Energy Systems, Built Environment
	Systemic lever	Technology/Infrastructure, Finance & Funding
	Outcome (according to module B-1.1)	Demonstration of deep retrofits and meeting of public sector targets
Implementation	Responsible bodies/person for implementation	Dublin City Council, SEAI
	Action scale & addressed entities	Building level
	Involved stakeholders	Internal Departments, Codema.
	Comments on implementation – consider mentioning resources, timelines, milestones	Age of the building and it is used by 1500 staff.
Impact & cost	Generated renewable energy (if applicable)	Currently have solar PV will consider additional renewable generation.
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	1679.2 t of CO2e from built environment
	GHG emissions compensated (natural or technological sinks)	Greening is part of this programme of works.
	Total costs and costs by CO2e unit	€13,281,527.00

B-2.2.4: Individual action outlines		
Action outline	Action name	R2.2 Mansion House
	Action type	
	Action description	Retrofit of Mansion House
Reference to impact pathway	Field of action	Energy Systems, Built Environment
	Systemic lever	Technology/Infrastructure, Finance & Funding
	Outcome (according to module B-1.1)	Demonstration of retrofit of heritage buildings.
Implementation	Responsible bodies/person for implementation	Dublin City Council, SEAI
	Action scale & addressed entities	Building Level
	Involved stakeholders	
	Comments on implementation – consider mentioning resources, timelines, milestones	Protected structure.

Impact & cost	Generated renewable energy (if applicable)	Being investigated
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	57.6 t of CO2e from built environment
	GHG emissions compensated (natural or technological sinks)	
	Total costs and costs by CO2e unit	€409,000

B-2.2.6: Individual action outlines		
Action outline	Action name	R2.3 City Hall
	Action type	
	Action description	Regeneration including renewable energy generation, waste segregation and greening measures
Reference to impact pathway	Field of action	Energy Systems, Built Environment
	Systemic lever	Technology/Infrastructure, Finance & Funding
	Outcome (according to module B-1.1)	Demonstration of retrofit of heritage buildings.
Implementation	Responsible bodies/person for implementation	Dublin City Council, SEAI
	Action scale & addressed entities	Building Level
	Involved stakeholders	Internal Departments, Utilities Agencies
	Comments on implementation – consider mentioning resources, timelines, milestones	Protected structure, and in use
Impact & cost	Generated renewable energy (if applicable)	
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	108 t of CO2e from Built Environment
	GHG emissions compensated (natural or technological sinks)	
	Total costs and costs by CO2e unit	€380,000

B-2.2.7: Individual action outlines		
Action outline	Action name	R2.4 Pathfinder Program
	Action type	
	Action description	Pathfinder is a retrofit program lead by SEAI which takes a partnership approach to deep retrofit and energy saving measures.
Reference to impact pathway	Field of action	Energy Systems, Built Environment, Green Industry
	Systemic lever	Technology/Infrastructure, Governance & Policy, Finance & Funding, Learning & Capabilities
	Outcome (according to module B-1.1)	Reduced emissions, improved infrastructure
Implementation	Responsible bodies/person for implementation	Dublin City Council, SEAI

	Action scale & addressed entities	City wide
	Involved stakeholders	SEAI, Central Government, Utilities Companies
	Comments on implementation – consider mentioning resources, timelines, milestones	Reliability of funding
Impact & cost	Generated renewable energy (if applicable)	Where possible renewable energy sources for micro generation will be
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	13014.4 t of CO2e from built environment
	GHG emissions compensated (natural or technological sinks)	Where feasible nature based solutions will be integrated
	Total costs and costs by CO2e unit	€4,000,000

B-2.2.8: Individual action outlines		
Action outline	Action name	R3.1 Dublin District Heating Project
	Action type	Infrastructure
	Action description	Our flagship energy project, the Dublin District Heating Project (DDHP) is an important project which will contribute to the reduction of carbon emissions in Dublin City and ultimately to Ireland's Climate and Energy targets by delivering on Government policy at a European, National and local level. A new unit has recently been established to provide additional resources to deliver this project for Dublin City Council (DCC) which, in Phase 1 aims to capture waste heat from the Dublin Waste to Energy ("DWtE") and pipe it into homes and businesses in the Poolbeg, Ringsend and Docklands areas of Dublin city. Heat will be generated from the conversion of non-recyclable waste at the Dublin DWtE facility which has the potential to generate up to 90MW of heat.
Reference to impact pathway	Field of action	Energy
	Systemic lever	Governance & Policy Finance & Funding Technology/infrastructure
	Outcome (according to module B-1.1)	National policy changes; increased energy resilience and security; improved health outcomes
Implementation	Responsible bodies/person for implementation	Dublin City Council, DECC, Encyclis,
	Action scale & addressed entities	Limited to Docklands area
	Involved stakeholders	End Users – Central Bank of Ireland, Codema
	Comments on implementation – consider mentioning resources, timelines, milestones	Key barrier to implementation is funding, and alignment of legislation.
Impact & cost	Generated renewable energy (if applicable)	90 MW
	Removed/substituted energy, volume, or fuel type	90 MW of fossil fuel for heating
	GHG emissions reduction estimate (total) per emission	NA

	source sector	
	GHG emissions compensated (natural or technological sinks)	NA
	Total costs and costs by CO2e unit	€42,700,000 (between 2024-2026)

B-2.2.9: Individual action outlines		
Action outline	Action name	R3.2 Solar PV Car Port at Davitt Road
	Action type	
	Action description	Recognising the need to transition our fleet to electric vehicles and anticipating the extra demand that will be placed on the capacity of the local power grid, Dublin City Council has identified an opportunity to develop a dynamic solution using solar PV and battery storage at the Davitt Road fleet depot to augment the supply during our peak demand. A raised cantilever frame will optimise the solar gain and will provide shelter to vehicles during winter months, eliminating exposure to frost. A PV system with peak output of 450kW could yield 415,170kwh/annum, reducing annual CO2 emissions by 130 tonnes.
Reference to impact pathway	Field of action	Energy
	Systemic lever	Learning & Capabilities Technology/ Infrastructure
	Outcome (according to module B-1.1)	Policy incentives in place to support technology; Scaling ability and usability in other contexts such as construction.
Implementation	Responsible bodies/person for implementation	Dublin City Council, SEAI
	Action scale & addressed entities	Municipal Depot
	Involved stakeholders	Utilities Networks
	Comments on implementation – consider mentioning resources, timelines, milestones	The project has been allocated funding in the city's capital budget. It is anticipated to be delivered within the lifetime of the climate action plan
Impact & cost	Generated renewable energy (if applicable)	TBD
	Removed/substituted energy, volume, or fuel type	Enabling transition of vehicles from ICE to EV
	GHG emissions reduction estimate (total) per emission source sector	Reduction in emissions from Transport a percentage of 4122.4t of CO2e from Transport
	GHG emissions compensated (natural or technological sinks)	NA
	Total costs and costs by CO2e unit	€500,000 (between 2024-2026)

B-2.2.10: Individual action outlines		
Action outline	Action name	R3.3 Explore and develop a strategy for geothermal heating in the city centre with GSI
	Action type	
	Action description	Investigation and development of potential of geothermal building on work from GEO-URBAN. A project that explored the potential for low enthalpy geothermal in urban environments. The project focused on two target locations – Dublin, Ireland and Valles, Spain – and provided a feasibility analysis for the commercial development of deep

		geothermal resources in these regions.
Reference to impact pathway	Field of action	Energy
	Systemic lever	Learning & Capabilities Technology & Infrastructure
	Outcome (according to module B-1.1)	Policy incentives to support technology, and financing to deliver.
Implementation	Responsible bodies/person for implementation	Dublin City Council, Geological Survey Ireland (GSI) Grangegorman Development Agency, Technical University Dublin,
	Action scale & addressed entities	Grangegorman
	Involved stakeholders	Department of Environment, Climate and Communications Codema
	Comments on implementation – consider mentioning resources, timelines, milestones	Funding and policy dependent.
Impact & cost	Generated renewable energy (if applicable)	TBD
	Removed/substituted energy, volume, or fuel type	Fossil fuel used for heating
	GHG emissions reduction estimate (total) per emission source sector	Reduction in emission from energy sector
	GHG emissions compensated (natural or technological sinks)	Greening measures will be included in project
	Total costs and costs by CO2e unit	TBD

B-2.2.11: Individual action outlines		
Action outline	Action name	R3.4 Public Lighting Upgrade Project with LED lighting and CMS
	Action type	
	Action description	Multiyear programme to upgrade public lighting in the city to LEDs with central management system to reduce energy use, improve safety, and reduce adverse impacts on biodiversity.
Reference to impact pathway	Field of action	Energy
	Systemic lever	Finance & Funding, Technology & Infrastructure
	Outcome (according to module B-1.1)	Reduced energy use, and improved public safety
Implementation	Responsible bodies/person for implementation	Dublin City Council
	Action scale & addressed entities	Citywide
	Involved stakeholders	ESB
	Comments on implementation – consider mentioning resources, timelines, milestones	Challenge is cost, due to DCC paying an unmetered rate for energy related to public lighting, a change is needed that must come from ministerial direction to the semi state agency ESB.
Impact & cost	Generated renewable energy (if applicable)	NA – this will increase as more renewables are added to the national grid
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	2,500 tCO_{2e}
	GHG emissions compensated (natural or technological sinks)	
	Total costs and costs by CO2e unit	€37,075,852.00 (between 2024-2026)

B-2.2.12: Individual action outlines		
Action outline	Action name	R4.1 Establish Eat the Streets Programme
	Action type	
	Action description	Food education programme to support the implementation of the city's food strategy Edible Dublin.
Reference to impact pathway	Field of action	Nature Based Solutions
	Systemic lever	Technology/Infrastructure, Governance & Policy
	Outcome (according to module B-1.1)	Reduction in Urban Heat Island effect, increased biodiversity, reduced flooding impacts. social cohesion, improved air quality, water quality.
Implementation	Responsible bodies/person for implementation	Dublin City Council, Failte Ireland, Restaurants Association of Ireland,
	Action scale & addressed entities	City wide
	Involved stakeholders	Food Businesses; Community Growers, HSE, Safe Food
	Comments on implementation – consider mentioning resources, timelines, milestones	Funding is challenging; as are staff resources. Support communities to deliver bespoke local actions with support from nature NGO's and local ecologists, alongside capital works undertaken by local government.
Impact & cost	Generated renewable energy (if applicable)	NA
	Removed/substituted energy, volume, or fuel type	NA
	GHG emissions reduction estimate (total) per emission source sector	Reduction in Food waste
	GHG emissions compensated (natural or technological sinks)	Natural sinks will increase and contribute to increase of green space; this will be durable carbon dioxide removable
	Total costs and costs by CO2e unit	€500,000 (2024-2026)

B-2.2.13: Individual action outlines		
Action outline	Action name	R4.2 Implementation of Markets Strategy
	Action type	
	Action description	Establishment of fruit and veg markets selling local produced
Reference to impact pathway	Field of action	Nature Based Solutions
	Systemic lever	Technology/Infrastructure, Governance & Policy
	Outcome (according to module B-1.1)	Improved access to food; reduced food waste; improved health out comes
Implementation	Responsible bodies/person for implementation	Dublin City Council, Dublin Food Chain,
	Action scale & addressed entities	City wide
	Involved stakeholders	Resident Associations and Community Groups,
	Comments on implementation – consider mentioning resources, timelines, milestones	Funding is challenging; as are staff resources. Support communities to deliver bespoke local actions with support from nature NGO's and local ecologists, alongside capital works undertaken by local government.
Impact & cost	Generated renewable energy (if applicable)	Solar PV system – size to be determined.
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	Reduction in emissions from transport of goods

	GHG emissions compensated (natural or technological sinks)	Natural sinks
	Total costs and costs by CO2e unit	€17,0857,867 (2024-2026)

B-2.2.14: Individual action outlines		
Action outline	Action name	RF1.1 Implementation of Greening Strategies
	Action type	
	Action description	Greening strategies which will reduce climate risks and improve health outcomes.
Reference to impact pathway	Field of action	Nature Based Solutions
	Systemic lever	Technology/Infrastructure, Governance & Policy
	Outcome (according to module B-1.1)	Reduction in Urban Heat Island effect, increased biodiversity, reduced flooding impacts. social cohesion, improved air quality, water quality.
Implementation	Responsible bodies/person for implementation	Dublin City Council, DHLGH, DECC
	Action scale & addressed entities	City wide
	Involved stakeholders	LAWPRO, Resident Associations and Community Groups, NPWS, Nature NGO's
	Comments on implementation – consider mentioning resources, timelines, milestones	Funding is challenging; as are staff resources. Support communities to deliver bespoke local actions with support from nature NGO's and local ecologists, alongside capital works undertaken by local government.
Impact & cost	Generated renewable energy (if applicable)	NA
	Removed/substituted energy, volume, or fuel type	NA
	GHG emissions reduction estimate (total) per emission source sector	Reduction in AFOLU ; and reduction in energy use is anticipated due to changes in public lighting
	GHG emissions compensated (natural or technological sinks)	Natural sinks that will contribute to durable carbon dioxide removal.
	Total costs and costs by CO2e unit	€2,700,000 (2024-2026)

B-2.2.15: Individual action outlines		
Action outline	Action name	RF1.2 Dublin Bay Unesco Biosphere Discovery Centre
	Action type	
	Action description	Development of a Discovery Centre, which will facilitate management of the Biosphere and allow further educational opportunities. Rational and purpose for the discovery centre are: • **Research:** To act as a portal for universities to collaborate on scientific research and monitoring. • **Community Development:** To act as a forum for local community engagement. The Oversight Forum of the North Bull Island Nature Reserve Action Plan 2020-2025 which represents the views of local community, NGO and volunteer groups will play a crucial role in achieving the conservation objectives of the nature reserve. • **Reducing Disturbance of Sensitive**

		Habitats and Species: While nothing can substitute experiencing the natural world first hand, the marine and much of the headlands and islands are not accessible to the population and it is desirable from a conservation perspective that they should remain this way. • **Education:** To deliver education programming for primary and secondary schools. • **Inspiring Change:** The Discovery Centre will promote responsible behaviour and stewardship within the local community. The Discovery Centre will be the hub for this one-on-one engagement with locals and visitors alike. • **Gateway**: To act as a gateway/marker for the Nature Reserve. While many people at present think of the island as a wild unmanaged space, no one in the future visiting the island could be other than aware of the important national and international standing of the place. • **Conservation through Culture:** To facilitate art and cultural activities as a means of engaging people in conservation.
Reference to impact pathway	Field of action	Built Environment, Nature Based Solutions.
	Systemic lever	Technology/Infrastructure, Governance & Policy, Learning & Capabilities
	Outcome (according to module B-1.1)	Increased financing for nature-based solutions, the conservation of nature, and knowledge of natural heritage and its role in climate action.
Implementation	Responsible bodies/person for implementation	Dublin City Council, Fingal County Council, Dun Laoghaire Rathdown County Council, NPWS, Fáilte Ireland, Dublin Port
	Action scale & addressed entities	Coast of the county
	Involved stakeholders	Third Level, NPWS, Fáilte Ireland, Dublin Port Authority, Community Stakeholders, Dogs Trust Ireland, Scouting Ireland
	Comments on implementation – consider mentioning resources, timelines, milestones	Project is progressing in spite of objections from parent department.
Impact & cost	Generated renewable energy (if applicable)	Will be part of the design for centre reducing dependency on grid
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	Conservation will reduce AFOLU emissions
	GHG emissions compensated (natural or technological sinks)	Blue and green carbon (wetlands) – Carbon dioxide removals that are durable
	Total costs and costs by CO2e unit	€12,750,000 (2024-2026)

B-2.2.15: Individual action outlines		
Action outline	Action name	RF1.3 Liffey Vale Biodiversity Centre
	Action type	
	Action description	Development of a biodiversity/ecological centre at

		Liffey Vale in Chapelizod -Cois Abhann will be equipped to provide a programme of accredited courses, non-formal and informal education as well as the use of new methodologies in learning including transformational learning. The Centre's offerings would align with the DCC Biodiversity Plan. Cois Abhann aims • to provide an inspiring and appealing space that makes all ages feel welcome and builds interest and awareness of the Liffey Vale area. • to provide a cohesive programme of events, training, workshops, education, information and exhibitions. • to increase awareness, knowledge and understanding in a wide range of target groups of the environment, biodiversity, ecology, and our role in nurturing and caring for nature. • to promote citizen science and run a range of citizen science programmes. • to support government policy and strategy e.g., the biodiversity action plan, the DCC Biodiversity plan, the Climate Action plan, the National Strategy on Education for Sustainable Development. • to provide an exemplar for the conservation, reuse and extension of a derelict historic building, using sustainable construction and minimising energy in use. • to provide an exemplar of sustainable management of the garden and orchard areas, providing an informative example for both private and community gardeners. • to embed the site of Liffey Vale House and gardens into the network of accessible pedestrian and cycle routes in this part of the city, encouraging car free leisure pursuits. • to link the site to the extended and enhanced natural environment of Liffey Valley Park. • to embed the site in the lives and environment of the local community and of the wider city of Dublin
Reference to impact pathway	Field of action	Built Environment/Nature Based Solutions
	Systemic lever	Technology/Infrastructure, Governance & Policy
	Outcome (according to module B-1.1)	Increased financing for nature-based solutions, the conservation of nature, and knowledge of natural heritage and its role in climate action.
Implementation	Responsible bodies/person for implementation	Dublin City Council
	Action scale & addressed entities	Chapelizod, River Liffey
	Involved stakeholders	OPW, sports clubs, NPWS, ,
	Comments on implementation – consider mentioning resources, timelines, milestones	Funding is challenging; as are staff resources. Support communities to deliver bespoke local actions with support from nature NGO's and local ecologists, alongside capital works undertaken by local government.
Impact & cost	Generated renewable energy (if applicable)	Will be part of the design for centre reducing dependency on grid
	Removed/substituted energy,	

	volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	Conservation will reduce AFOLU emissions
	GHG emissions compensated (natural or technological sinks)	Blue and green carbon sinks
	Total costs and costs by CO2e unit	€3,400,000

B-2.2.16: Individual action outlines		
Action outline	Action name	RF2.1 Santry River Restoration
	Action type	
	Action description	Restoration of the river Santry to create an integrated green blue landscape for ecology and amenity. Project aims to deliver the following objectives: • Improved status under Water Framework Directive • Flood mitigation in accordance with the Floods Directive • Habitat improvement and restoration under the Birds and Habitats Directives • Provision of sustainable transportation options through the delivery of a recreational greenway • Improved social and recreational amenity within the catchment, informed by engagement with communities living within the catchment
Reference to impact pathway	Field of action	Built Environment/Nature Based Solutions
	Systemic lever	Technology/Infrastructure, Governance & Policy
	Outcome (according to module B-1.1)	A new, greener and more sustainable area across the north of the city (from Finglas to North Bull Island) which people can enjoy and utilise, and where people, and in particular, children, can travel within the catchment safely and sustainably without having to use the road system (Active Travel route)
Implementation	Responsible bodies/person for implementation	Dublin City Council, LAWPRO, OPW
	Action scale & addressed entities	Santry River Catchment Area
	Involved stakeholders	Community, Academia, , NTA
	Comments on implementation – consider mentioning resources, timelines, milestones	Silo'd departments at national level, project finance
Impact & cost	Generated renewable energy (if applicable)	NA
	Removed/substituted energy, volume, or fuel type	NA
	GHG emissions reduction estimate (total) per emission source sector	Conservation will reduce AFOLU emissions; and additional greening
	GHG emissions compensated (natural or technological sinks)	Increased greening, expanding buffer zone of river; increased CDR
	Total costs and costs by CO2e unit	€46,423,102

B-2.2.17: Individual action outlines

Action outline	Action name	RF2.2 Camac River Restoration
	Action type	
	Action description	To meet the Water Framework Directive (WFD) obligation of achieving 'good' status for all rivers, DCC has a number of ongoing projects to address both water quality and flood risk; these include a project to de-culvert the River Camac, restoring the river to a more natural state over time is beneficial. The project will also involve identifying and remedying urban pollution sources. This is also being done in conjunction with an existing Greenway proposal, in tandem with Urban Regeneration and Development Fund (URDF) funded projects in the area.
Reference to impact pathway	Field of action	Nature Based Solutions, Built Environment
	Systemic lever	Technology/Infrastructure, Governance and Policy
	Outcome (according to module B-1.1)	Holistic restoration of Camac, in order to alleviate flooding and restore historical features, with the aim of reducing flooding and urban heat effects. Stronger finance commitments for adaptation projects using NBS.
Implementation	Responsible bodies/person for implementation	Dublin City Council, South Dublin County Council, OPW,
	Action scale & addressed entities	Camac River Catchment
	Involved stakeholders	Community, Academia, LAWPRO, Irish Rail, Failte Ireland,
	Comments on implementation – consider mentioning resources, timelines, milestones	Silo'd departments at national level, project finance
Impact & cost	Generated renewable energy (if applicable)	NA
	Removed/substituted energy, volume, or fuel type	NA
	GHG emissions reduction estimate (total) per emission source sector	Conservation will reduce AFOLU emissions
	GHG emissions compensated (natural or technological sinks)	Natural Sinks ; CDR
	Total costs and costs by CO2e unit	€4,200,000

B-2.2.18: Individual action outlines		
Action outline	Action name	RF2.3 The Liffey a Place for Leisure
	Action type	
	Action description	Improvement of River Liffey to create social opportunities and to reduce flooding and heat risk.
Reference to impact pathway	Field of action	Nature Based Solutions, Built Environment
	Systemic lever	Technology/Infrastructure, Governance and Policy
	Outcome (according to module B-1.1)	Improved water quality, return of biodiversity to the river.
Implementation	Responsible bodies/person for implementation	Dublin City Council, OPW, DHLGH, Dublin Port, Sports Clubs, NPWS
	Action scale & addressed entities	River Liffey Catchment
	Involved stakeholders	Community, Academia, LAWPRO, Irish Nautical Trust.
	Comments on implementation – consider mentioning resources, timelines, milestones	Built environment and heritage considerations. Finance.

Impact & cost	Generated renewable energy (if applicable)	
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	Conservation will reduce AFOLU emissions
	GHG emissions compensated (natural or technological sinks)	Blue and green carbon sinks
	Total costs and costs by CO2e unit	€10,650,000

B-2.2.19: Individual action outlines		
Action outline	Action name	RF3.1 Adaptive Re-use
	Action type	
	Action description	Adaptive Re-use Programme converting existing buildings to 'new' uses such as social housing. The Adaptive Reuse Unit in the Housing and Community Services Department is creating new social housing apartments by adapting and refurbishing vacant office and commercial buildings in Dublin city. The unit is delivering along two of the pathways to a sustainable housing system identified under *Housing for All:* to increase new housing supply, and to address vacancy and efficient use of existing stock. The delivery of Adaptive Reuse projects demonstrates a commitment by Dublin City Council to proactively engage in implementing the policies of the City Development Plan 2022-2028 in relation to the refurbishment of the historic built environment, achieving reductions in vacancy and underuse of buildings, and promoting refurbishment over demolition and reconstruction of buildings where possible. As is often quoted “The greenest building is the one that is already built”. Recent research by the Irish Green Building Council in relation to delivering housing highlights the importance of using existing buildings to deliver new housing if carbon reduction targets in the built environment sector are to be achieved. With commercial vacancy rates increasing and property prices falling, it is expected that Adaptive Reuse of commercial and non-residential buildings will become an increasingly desirable option for creating new homes in Dublin city in the coming years. The Department of Housing, Local Government and Heritage (DHLGH) has granted funding approval for four Adaptive Reuse projects in the Dublin City Council area. The acquisition of one of these properties, 14-15 Fitzwilliam Quay, Dublin 4, completed in March 2024. This is a former office building that will be converted to 15 apartments for use as social housing or affordable sale. Funding applications for two additional projects are pending approval by the DHLGH, and feasibility studies for six additional projects are underway.

Reference to impact pathway	Field of action	Energy Systems, Built Environment, Circular Economy
	Systemic lever	Technology/Infrastructure, Social Innovation, Governance & Policy, Finance & Funding
	Outcome (according to module B-1.1)	Reduction in dereliction and demonstration of re-use that leads to changes in policy and funding that support the adaptation of buildings to multiple uses insuring the vibrancy of the city.
Implementation	Responsible bodies/person for implementation	Dublin City Council, DHLGH, IGBC, Commercial sector,
	Action scale & addressed entities	City Wide
	Involved stakeholders	Utilities Networks, Business Community
	Comments on implementation – consider mentioning resources, timelines, milestones	Government priorities, finance and regulations will create challenges that will be tested and addressed.
Impact & cost	Generated renewable energy (if applicable)	This is a requirement amount is to be determined – Solar PV will be included
	Removed/substituted energy, volume, or fuel type	TBD
	GHG emissions reduction estimate (total) per emission source sector	Assume similar to Dominick St. BER E to BER B2 Potential reduction is **9,150 tCO2 e (based on 10 buildings similar to Dominick Street)**
	GHG emissions compensated (natural or technological sinks)	Greening will be a key aspect of all social housing projects.
	Total costs and costs by CO2e unit	€69,214,339

B-2.2.20: Individual action outlines		
Action outline	Action name	RF4.1 Establish network of centres to enable the scaling out of social and circular small and medium enterprises.
	Action type	
	Action description	We continue to nurture a healthy ecosystem of social and circular small and medium enterprises by providing supports to entrepreneurs through initiatives like MODOS, Micro for Green, and SoCircular. Through our partnership with Belfast City Council, we are developing physical and regulatory infrastructure components essential to support SMEs to innovate and create a Connected Circular Economy on the Island of Ireland. The Community Climate Action programme provides community groups with an opportunity to implement bespoke actions which support the repair or repurposing of everyday items.
Reference to impact pathway	Field of action	Circular Economy, Green Industry
	Systemic lever	Governance and Policy, Social Innovation, Finance & Funding
	Outcome (according to module B-1.1)	
Implementation	Responsible bodies/person for implementation	Dublin City Council, Belfast City Council, Dublin Belfast Economic Corridor, Department of Taoiseach, Dublin Port,
	Action scale & addressed entities	City wide
	Involved stakeholders	Private business owners, Planning authority, Social Enterprise Organisations, Rediscovery Centre, Dublin Food Chain,
	Comments on implementation –	Funding from national government is needed

	consider mentioning resources, timelines, milestones	
Impact & cost	Generated renewable energy (if applicable)	Possible
	Removed/substituted energy, volume, or fuel type	Possible
	GHG emissions reduction estimate (total) per emission source sector	Reduction in emissions associated with waste.
	GHG emissions compensated (natural or technological sinks)	
	Total costs and costs by CO2e unit	TBD

B-2.2.21: Individual action outlines		
Action outline	Action name	C1.1 Parnell Square Cultural Quarter
	Action type	
	Action description	Development of a dynamic cultural space that will contribute to a vibrant and inclusive city centre, including a City Library. The project will deliver 5,500 square metres of modern, bright open spaces for reading and lending, as well as a variety of spaces for studying, working, meeting, creating and performing. Facilities will include a welcoming library for children and young adults, a makerspace, meeting rooms and study spaces, as well as a multi-purpose conference centre, a café and exhibition areas. The proposed development also includes the initial redevelopment of one of the Georgian houses at Number 27 Parnell Square West, and a new public plaza created in front of the city library buildings and the Hugh Lane Gallery.
Reference to impact pathway	Field of action	Built Environment
	Systemic lever	Technology/Infrastructure, Policy & Governance, Learning & Capabilities
	Outcome (according to module B-1.1)	
Implementation	Responsible bodies/person for implementation	Dublin City Council, DTCAGSM
	Action scale & addressed entities	North East Inner City.
	Involved stakeholders	Parnell Square Foundation, Architects, Utility networks.
	Comments on implementation – consider mentioning resources, timelines, milestones	Funding due to rising costs of construction.
Impact & cost	Generated renewable energy (if applicable)	Building will be to NZEB standard; Solar PV and other micro generation to be considered
	Removed/substituted energy, volume, or fuel type	Renewables
	GHG emissions reduction estimate (total) per emission source sector	TBD
	GHG emissions compensated (natural or technological sinks)	Greening will sequester carbon.
	Total costs and costs by CO2e unit	€105,000,000 (2024-2026)

B-2.2.22: Individual action outlines		
Action outline	Action name	C1.2 Dalymount Park Redevelopment
	Action type	
	Action description	Redevelopment of Dalymount Park Sports Stadium. Dalymount Park is one of the city council's major capital infrastructure projects, which will not only improve the sporting infrastructure of the city but also play a major in role in the regeneration and enhancement of the Public Domain in Phibsborough. The current plan is to develop a new four-sided municipal stadium (c. 8,034 capacity) featuring: • Reorientation of the pitch to a North/South Axis (105m x 68m) and installation of a new sand-based grass pitch. • New stands to the east and west side with provision for c. 6,240 seats and two new terraces to the north and south with provision for c. 1,794 standing • The provision of a public thoroughfare along the eastern boundary connecting North Circular Road and Connaught Street to include various eateries and a new public plaza • A community facility with an area of 585sq.m over two floors to include a multi-functional community room and a community gym. • The provision of modern match-day facilities for teams and officials.
Reference to impact pathway	Field of action	Built Environment, Mobility & Transport
	Systemic lever	Technology/Infrastructure, Governance & Policy
	Outcome (according to module B-1.1)	Demonstration of sports facility that is climate proofed while delivering community benefit and supports behaviour change and a just transition.
Implementation	Responsible bodies/person for implementation	Dublin City Council, DHLGH, Bohemians
	Action scale & addressed entities	
	Involved stakeholders	FAI, North Dublin Community, DTCAGSM,
	Comments on implementation – consider mentioning resources, timelines, milestones	Funding, as costs of construction will rise; public acceptance of the project.
Impact & cost	Generated renewable energy (if applicable)	Solar PV and heat pumps
	Removed/substituted energy, volume, or fuel type	TBD
	GHG emissions reduction estimate (total) per emission source sector	Reduction in Built environment, and transport emissions due to limitation of parking,
	GHG emissions compensated (natural or technological sinks)	Greening will sequester carbon
	Total costs and costs by CO2e unit	€44,041,787 (2024-2026)

B-2.2.23: Individual action outlines		
Action outline	Action name	C1.3 Maker spaces in libraries

	Action type	
	Action description	Development of multi-use, creative spaces which are open to all. Makerspaces have become one of the primary places to learn crafts, trades, and technology. The Maker Space at Coolock Library is a multi-use, creative and educational community space. • It houses a range of facilities and tools including laptops, a 3D printer, a vinyl cutter, and sewing machines. The space facilitates STEM learning in an informal setting. This accessible, dynamic and inclusive space is at the heart of Dublin City Council's commitments under the Creative Ireland initiative. • If you are interested in making and creating, Makerspaces provide the tools, support and environment you need. They supply tools like 3D printers, software, electronics, craft supplies, and wood and metalwork tools. More importantly, they also provide support and access to knowledge and give you the space to be creative. • Many libraries have begun to develop spaces for design and activities to teach and empower communities. The maker movement in libraries is about teaching people to think for themselves, to think creatively, and to look for do-it-yourself solutions.
Reference to impact pathway	Field of action	Circular Economy
	Systemic lever	Social Innovation, Democracy/Participation, Learning & Capabilities
	Outcome (according to module B-1.1)	
Implementation	Responsible bodies/person for implementation	Dublin City Council, Creative Ireland
	Action scale & addressed entities	
	Involved stakeholders	Communities, Private business sector, Arts Sector
	Comments on implementation – consider mentioning resources, timelines, milestones	
Impact & cost	Generated renewable energy (if applicable)	NA
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	There should be a decrease in certain goods such as textile entering the waste stream leading to a reduction in emissions in waste
	GHG emissions compensated (natural or technological sinks)	
	Total costs and costs by CO2e unit	€150,000 (2024-2026)

B-2.2.24: Individual action outlines		
Action outline	Action name	C1.4 Improved Community Facilities
	Action type	
	Action description	Improved community facilities, with the possibility of community kitchens which will allow for education on waste reduction and resilience.
Reference to impact	Field of action	Built Environment, Circular Economy.

pathway	Systemic lever	Social Innovation, Democracy/Participation, Technology/Infrastructure
	Outcome (according to module B-1.1)	
Implementation	Responsible bodies/person for implementation	Dublin City Council, HSE,
	Action scale & addressed entities	
	Involved stakeholders	Community organisations, schools, Food Cloud, Spade Enterprise, City of Dublin Education Training Board
	Comments on implementation – consider mentioning resources, timelines, milestones	Facilitate community training needs through the Food Cloud Academy Certificate Scheme. This accredited programme focuses on various aspects of surplus food distribution. Funding from the Community Climate Action Fund can be accessed to purchase energy efficient equipment.
Impact & cost	Generated renewable energy (if applicable)	
	Removed/substituted energy, volume, or fuel type	Reduced impacts associated with food transport and disposal
	GHG emissions reduction estimate (total) per emission source sector	Reduction in waste emissions
	GHG emissions compensated (natural or technological sinks)	
	Total costs and costs by CO2e unit	€822,600 (2024-2026)

B-2.2.25: Individual action outlines		
Action outline	Action name	C3.1 Resilient North East Inner City
	Action type	
	Action description	The North East Inner City Initiative commenced in July 2016, when the government launched a major initiative for Dublin's North East Inner City to oversee the long-term social and economic regeneration of the area. The Mulvey Report, 'Creating a Brighter Future' in Dublin's North East Inner City, was published in February 2017 with recommendations across several priority areas, as well as system of implementation structures to support the process. The report led to the establishment of the North East Inner City Programme Implementation Board chaired by an Independent Chairperson. The Mulvey Report has been further supplemented by an NEIC Strategic Plan 2020 – 2023.
Reference to impact pathway	Field of action	Energy Systems, Circular Economy, Nature Based Solutions, Built Environment
	Systemic lever	Technology & Infrastructure, Policy & Governance, Democracy/Participation, Finance & Funding
	Outcome (according to module B-1.1)	New social spaces and improved public realm that contribute to social cohesion and build community wealth
Implementation	Responsible bodies/person for implementation	Dublin City Council, Department of Education, Department of Taoiseach's

	Action scale &addressed entities	North East Inner City
	Involved stakeholders	SEAI, Communities, Business Organisations, National Transport Authority, CETB, HSE
	Comments on implementation – consider mentioning resources, timelines, milestones	Social and economic challenges, safety.
Impact & cost	Generated renewable energy (if applicable)	Where feasible Solar PV, heat pumps
	Removed/substituted energy, volume, or fuel type	Reduced demand on the grid
	GHG emissions reduction estimate (total) per emission source sector	80% reduction in emissions from all sectors
	GHG emissions compensated (natural or technological sinks)	Increased greening in the area will contribute to carbon dioxide removal
	Total costs and costs by CO2e unit	€294,855.00. Further, the government has invested over €45.7 million under the NEIC Initiative which has achieved significant progress in enhancing the lives of the residents and communities of Dublin's North East Inner City.

B-2.2.26: Individual action outlines		
Action outline	Action name	C3.2 Climate Smart Districts
	Action type	
	Action description	• Smart Dublin 'Districts' are strategically selected locations where innovation projects are fast-tracked. Smart Districts are designed collaboratively with citizens, industry, academia and the Local Authority. • In 2018 Dublin City Council launched the first ever Smart Dublin District 'Smart Docklands'. • Smart Docklands is an award-winning smart city test-bed that provides a unique platform for innovators and entrepreneurs to develop new and innovative solutions.
Reference to impact pathway	Field of action	Mobility & Transport, Green Industry
	Systemic lever	Technology & Infrastructure, Policy & Governance, Democracy/Participation, Finance & Funding
	Outcome (according to module B-1.1)	Supporting increased resilience through technological innovation, include monitoring of climate measurements such as air quality, biodiversity, etc.
Implementation	Responsible bodies/person for implementation	Dublin City Council, Smart Dublin, Technology Companies, Academia
	Action scale & addressed entities	City Wide
	Involved stakeholders	
	Comments on implementation – consider mentioning resources, timelines, milestones	Key challenge has been the scaling up of projects due to procurement and lack of investment
Impact & cost	Generated renewable energy (if applicable)	Where feasible Solar PV, heat pumps
	Removed/substituted energy, volume, or fuel type	Reduced demand on the grid
	GHG emissions reduction estimate (total) per emission source sector	80% reduction in emissions from all sectors
	GHG emissions compensated (natural or technological sinks)	Increased greening in the area will contribute to carbon dioxide removal

	Total costs and costs by CO2e unit	

B-2.2.27: Individual action outlines		
Action outline	Action name	C4.1 Ringsend Poolbeg Decarbonisation Zone
	Action type	
	Action description	A requirement of the National Climate Action Plan 2021 is for the identification and development of decarbonisation zones that will contribute to National Climate Objective of a 51% reduction in emissions by 2030 and neutrality by 2050. Decarbonisation zones are intended to: • Apply a place-based approach; • Use systems thinking that promotes exploration, co-creativity, innovation and new learnings; • Be test beds for portfolio of actions, projects, technologies and interventions to achieve our targets and; • Address energy and non-energy related issues (adaptation, biodiversity and just transition).
Reference to impact pathway	Field of action	Mobility & Transport, Nature Based Solutions, Energy Systems
	Systemic lever	Technology & Infrastructure, Social Innovation, Finance & Funding, Learning & Capabilities
	Outcome (according to module B-1.1)	Innovation sandboxes that inform policy
Implementation	Responsible bodies/person for implementation	Dublin City Council, DECC, SEAI, Encyclsis, Communities, Uisce Eireann, ESB
	Action scale & addressed entities	Ringsend Pool Beg Area
	Involved stakeholders	Irish Nautical Trust, GAA
	Comments on implementation – consider mentioning resources, timelines, milestones	At present there are no new resources for the delivery of the DZ. DCC is part of two successful EU projects that will support the development of the DZ but this is not sufficient.
Impact & cost	Generated renewable energy (if applicable)	Where feasible Solar PV, heat pumps
	Removed/substituted energy, volume, or fuel type	Reduced demand on the grid
	GHG emissions reduction estimate (total) per emission source sector	80% reduction in emissions from all sectors
	GHG emissions compensated (natural or technological sinks)	Increased greening in the area will contribute to carbon dioxide removal
	Total costs and costs by CO2e unit	€250,000.00

B-2.2.28: Individual action outlines		
Action outline	Action name	C4.2 Ballymun Decarbonisation Zone
	Action type	
	Action description	A requirement of the National Climate Action Plan 2021 is for the identification and development of decarbonisation zones that will contribute to National Climate Objective of a 51% reduction in

		emissions by 2030 and neutrality by 2050. Decarbonisation zones are intended to: • Apply a place-based approach; • Use systems thinking that promotes exploration, co-creativity, innovation and new learnings; • Be test beds for portfolio of actions, projects, technologies and interventions to achieve our targets and; • Address energy and non-energy related issues (adaptation, biodiversity and just transition).
Reference to impact pathway	Field of action	Mobility & Transport, Nature Based Solutions, Energy Systems
	Systemic lever	Technology & Infrastructure, Social Innovation, Finance & Funding, Learning & Capabilities
	Outcome (according to module B-1.1)	Innovation sandboxes that inform policy
Implementation	Responsible bodies/person for implementation	Dublin City Council, HSE, Rediscovery Centre, DCU, DECC, Ballymun Food Forum
	Action scale & addressed entities	Ballymun
	Involved stakeholders	Codema, Communities
	Comments on implementation – consider mentioning resources, timelines, milestones	At present there are no new resources for the delivery of the DZ. Given the interest in food, the focus at present for the DZ is building on this strength and utilising this to create conversation.
Impact & cost	Generated renewable energy (if applicable)	Where feasible Solar PV, heat pumps
	Removed/substituted energy, volume, or fuel type	Reduced demand on the grid
	GHG emissions reduction estimate (total) per emission source sector	80% reduction in emissions from all sectors
	GHG emissions compensated (natural or technological sinks)	Increased greening in the area will contribute to carbon dioxide removal
	Total costs and costs by CO2e unit	€250,000.00

B-2.2.29: Individual action outlines		
Action outline	Action name	S1.1 Delivery of Active Travel projects in accordance with the 2022 to 2024 projects (C2CC, Liffey, Royal Canal) S1.2 Delivery of Active Travel projects in accordance with the 2025 to 2027 projects S1.3 Delivery of Active Travel projects in accordance with the 2027 and onward projects S1.4 Community Participation Events to celebrate new active travel routes as they open and encourage use S1.5 Behaviour Change initiatives to encourage use of the network and modal shift across diverse groups
	Action type	
	Action description	Increased cycle networks, encourage/support smarter travel award/mark, Dublin 24 Rapid Build expansion, 10-15 minute city, LA mobility hubs, Sustainable Mobility Policy ambassadors (via Public Participation Network training providing advice and

		support).
Reference to impact pathway	Field of action	Mobility and Transport
	Systemic lever	Finance & funding Technology/ Infrastructure Democracy/Participation Social Innovation
	Outcome (according to module B-1.1)	Vulnerable road user laws, automated ticketing; improved health and well-being, improved air quality
Implementation	Responsible bodies/person for implementation	Dublin City Council, An Garda Siochana National Transport Authority, Department of Transport,
	Action scale & addressed entities	City wide
	Involved stakeholders	Cycling Advocacy groups, Residents associations, Dublin Bus, Uisce Eireann, Schools,
	Comments on implementation – consider mentioning resources, timelines, milestones	Funding has been provided by the National Transport Authority to deliver 310 kms of active travel routes delivered over three tranches.
Impact & cost	Generated renewable energy (if applicable)	NA
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	Reduced emission from transport, will be evident in reduction in VKMs travelled by cars in national data
	GHG emissions compensated (natural or technological sinks)	Natural sinks through the inclusion of NBS in schemes.
	Total costs and costs by CO2e unit	€105,536,354.00 for 2022-2024 projects €348,505,804.00 for 2025-2027 projects €10,000 for S1.4 €10,000 for S1.5

B-2.2.30: Individual action outlines		
Action outline	Action name	S2.1 Sustainable Energy Communities
	Action type	
	Action description	Dublin City Council administers funds from the Sustainable Energy Authority of Ireland to provide support to communities in developing a sustainable energy community plan that includes actions addressing energy, transport, biodiversity, circular economy and just transition. Communities are supported by an energy consultant to learn about what they can do, and to develop an energy master plan, from which to apply for additional grant funding.
Reference to impact pathway	Field of action	Mobility and Transport; Energy
	Systemic lever	Finance & Funding Democracy/ Participation Social Innovation
	Outcome (according to module B-1.1)	
Implementation	Responsible bodies/person for implementation	Dublin City Council
	Action scale & addressed entities	City wide
	Involved stakeholders	Sustainable Energy Authority of Ireland, Communities, Codema
	Comments on implementation – consider mentioning resources, timelines, milestones	A challenge for communities is moving from plan phase to do phase. Acknowledging that this a challenge DCC is supporting a service design projected funded by Creative Ireland to identify the barriers and generate solutions to empower and enable communities to enact their plans.

Impact & cost	Generated renewable energy (if applicable)	Likely Solar PV, as this is technology supported by grants
	Removed/substituted energy, volume, or fuel type	Reduced demand on the grid
	GHG emissions reduction estimate (total) per emission source sector	Reduced emissions from all sectors
	GHG emissions compensated (natural or technological sinks)	Increased greening in the area will contribute to carbon dioxide removal
	Total costs and costs by CO2e unit	€400,000

B-2.2.31 Individual action outlines		
Action outline	Action name	S2.2 Quiet Areas
	Action type	
	Action description	Quiet Areas in an urban agglomeration context are not necessarily areas without or with reduced noise. They may have a range of other qualifying characteristics which when combined with their low environmental sound levels (as identified by the noise mapping process) mean they can provide people with a more tranquil space to visit, away from the noisier areas of the city. Through our noise action plan, Dublin City Council will be increasing the number of quiet areas in the city. At present we have 8, where residents have noted improved quality of life due to reduce noise levels stemming from traffic and construction.
Reference to impact pathway	Field of action	Mobility and Transport; Greening
	Systemic lever	Governance & Policy
	Outcome (according to module B-1.1)	Improved quality of life for city residents.
Implementation	Responsible bodies/person for implementation	Dublin City Council, Environmental Protection Agency, Health Service Executive,
	Action scale & addressed entities	Citywide
	Involved stakeholders	Residence Associations, Schools, construction companies, NTA
	Comments on implementation – consider mentioning resources, timelines, milestones	Dependent on council approval
Impact & cost	Generated renewable energy (if applicable)	Possible
	Removed/substituted energy, volume, or fuel type	NA
	GHG emissions reduction estimate (total) per emission source sector	80% reduction in emissions from all sectors
	GHG emissions compensated (natural or technological sinks)	Greening
	Total costs and costs by CO2e unit	NA

B-2.2.32: Individual action outlines		
Action outline	Action name	S2.3 Low carbon mobility hubs (EV charging infrastructure)
	Action type	

	Action description	Building on our mobility hub pilot in Finglas with the first Community Mobility Charging Hub, bringing to life the Council's Electric Vehicle Charging Strategy. As part of this pilot project, local people in the Finglas area gained access to: • Two EV chargers with Four charging spaces; • 1 No. AC charger (nominally 22KW), with 2 charging spaces. • 1 No. DC 75KW charger with CCS and CHAdeMO, 2 charging spaces. • All chargers supplied and operated by EasyGo. • A dedicated Car Share Club EV charging space (one of the AC spaces), to be rotated between all 3 licenced operators in Dublin City across the pilot duration. • A dedicated ESB eBike commuter hub with 8 eBikes, in association with Bleeper Bikes.
Reference to impact pathway	Field of action	Mobility and Transport
	Systemic lever	Governance and Policy Finance and Funding Technology/ Infrastructure
	Outcome (according to module B-1.1)	Improved infrastructure, reduced emissions
Implementation	Responsible bodies/person for implementation	Dublin City Council, Easy Go, ESB,
	Action scale & addressed entities	Citywide
	Involved stakeholders	NTA, Department for Environment, Climate and Communications, SEAI, ESB, Neighbouring local authorities, Smart Dublin, Codema
	Comments on implementation – consider mentioning resources, timelines, milestones	Key challenge is alignment with Active travel objectives; grid connection;
Impact & cost	Generated renewable energy (if applicable)	Grid dependent upgrades to transmission and distribution lines are ongoing to address capacity issues.
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	80% reduction in emissions from transport
	GHG emissions compensated (natural or technological sinks)	
	Total costs and costs by CO2e unit	€2,000,000

B-2.2.34: Individual action outlines		
Action outline	Action name	S3.1 Delivery of Parks Strategy
	Action type	
	Action description	Parks and open space are vital to the 'liveability' of a city. The open spaces, gardens and trees canopy, are precious assets to Dublin. They make up the living component of the city. Insuring their continued enhancement supports greening and integration of NBS to reduce heat and flood risk for the city
Reference to impact pathway	Field of action	Nature Based Solutions, Built Environment
	Systemic lever	Technology/Infrastructure, Governance and Policy
	Outcome (according to module	Reduction of flooding and urban heat island effects.

	B-1.1)	
Implementation	Responsible bodies/person for implementation	Dublin City Council
	Action scale & addressed entities	City Wide
	Involved stakeholders	Community, Academia, residence associations
	Comments on implementation – consider mentioning resources, timelines, milestones	Financing of parks is limited, and their role in adaptation and mitigation, and just transition is often not considered.
Impact & cost	Generated renewable energy (if applicable)	Wind energy is being generated in one city park additional generation will be considered
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	
	GHG emissions compensated (natural or technological sinks)	Increased greening will create additional sinks
	Total costs and costs by CO2e unit	€4,597,454.72

B-2.2.35: Individual action outlines		
Action outline	Action name	S4.1 City Centre Public Realm
	Action type	
	Action description	Greening of public spaces, traffic calming and integration of NBS to mitigate flooding and heat risk, a key area is College Green The College Green Dame Street Project is the revised and expanded proposal to reinvent the historic College Green and Dame Street East area as a landmark public space at the heart of Dublin City. • The historic city core will be transformed; becoming an attractive pedestrian-friendly space that prioritises universal accessibility, social inclusion, sustainability, biodiversity and greening, while upholding and enhancing the history and heritage of this unique location. • Under these proposals, the area from College Green to the junction with South Great George's Street will become traffic-free, apart from timed deliveries and limited local access. The project will provide a world-class, multi-functional space, which complements some of Dublin's most illustrious historical buildings, notably Trinity College and the Bank of Ireland, allowing more space for people to enjoy cultural and recreational events, celebrations and social activities. • The College Green Dame Street Project objectives are: • To provide a world-class, multi-functional public space, which complements the adjacent historical buildings, • To remove all through vehicular traffic in an east west direction while facilitating

		deliveries, • To create a high-quality, pedestrian-priority space, • To support the City's Climate Action Plan by prioritising sustainability and greening in the development of the design, • To provide a safe cycle route, • To support the local economy by enhancing footfall, and • To use the principles of universal design to provide an accessible space for all to enjoy.
Reference to impact pathway	Field of action	Built Environment, NBS
	Systemic lever	Governance and Policy, Technology/Infrastructure
	Outcome (according to module B-1.1)	Improved public realm, reduced traffic, increased biodiversity, social cohesion, improved air quality
Implementation	Responsible bodies/person for implementation	Dublin City Council, Department of Transport, Department of Housing, Local Government and Heritage
	Action scale & addressed entities	City centre
	Involved stakeholders	Internal Departments, communities, Dublin Town, Dublin Chamber, Trans Dev;
	Comments on implementation – consider mentioning resources, timelines, milestones	Planning permission from An Bord Pleanala, public acceptance
Impact & cost	Generated renewable energy (if applicable)	
	Removed/substituted energy, volume, or fuel type	Reduction in emissions from transport
	GHG emissions reduction estimate (total) per emission source sector	80% reduction in emissions from all sectors
	GHG emissions compensated (natural or technological sinks)	Increased greening
	Total costs and costs by CO2e unit	€6,000,000

B-2.2.36: Individual action outlines		
Action outline	Action name	S4.2 Laneways of Dublin 1 and Dublin 2
	Action type	
	Action description	Building from Dublin One Lanes' Strategy. The strategy looked at lane ways in the Dublin 1 eircode, categorised them and identified actions for their improvement. The main outcome is the detailing of works for five selected laneways within the Dublin 1 region as pilot/demonstration projects for the improvements of lanes generally in Dublin 1 and of course more widely within the city centre. The actions for each lane are broken into short, medium and long term. Actions include art installations, public realm improvements, better lighting, increased security, safety, planning and development advice etc. In context of climate change lane ways need to be part of the city's greening efforts and include NBS to mitigate flood and heat risk.
Reference to impact	Field of action	Built environment, NBS.

pathway	Systemic lever	Governance and Policy, Technology/Infrastructure
	Outcome (according to module B-1.1)	Increased greening, improved air quality, social cohesion, population health and well-being
Implementation	Responsible bodies/person for implementation	Dublin City Council, Dublin Town, Residence's Association, Failte Ireland
	Action scale & addressed entities	Citywide
	Involved stakeholders	Schools, HSE, IGBC,
	Comments on implementation – consider mentioning resources, timelines, milestones	Challenges with perceptions of safety; costs of revitalisation; public acceptance
Impact & cost	Generated renewable energy (if applicable)	
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	80% reduction in emissions from all sectors
	GHG emissions compensated (natural or technological sinks)	Increased greening will see sequestration
	Total costs and costs by CO2e unit	

B-2.2.37: Individual action outlines		
Action outline	Action name	S4.3 Vibrant Streets
	Action type	
	Action description	Improvement of public realm, including greening and traffic measures. In context of climate change streets need to be part of the city's greening efforts and include NBS to mitigate flood and heat risk.
Reference to impact pathway	Field of action	Built environment, NBS
	Systemic lever	Governance and Policy, Technology/Infrastructure, Social innovation
	Outcome (according to module B-1.1)	Increased greening, improved air quality, social cohesion, population health and well-being
Implementation	Responsible bodies/person for implementation	Dublin City Council, Department of Transport, NTA,
	Action scale & addressed entities	Citywide
	Involved stakeholders	Schools, HSE, IGBC,
	Comments on implementation – consider mentioning resources, timelines, milestones	Finance for nature-based solutions, maintenance
Impact & cost	Generated renewable energy (if applicable)	
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	To be determined. Reduced transport emissions.
	GHG emissions compensated (natural or technological sinks)	Increased greening will see sequestration
	Total costs and costs by CO2e unit	€900,000

B-2.2.38: Individual action outlines

Action outline	Action name	CCC1 – Private home retrofit
	Action type	
	Action description	Retrofit of private dwellings across the city
Reference to impact pathway	Field of action	
	Systemic lever	
	Outcome (according to module B-1.1)	Reduced energy emissions, improved health and well-being, reduced energy costs
Implementation	Responsible bodies/person for implementation	Private home owners
	Action scale & addressed entities	City wide
	Involved stakeholders	DCC, SEAI
	Comments on implementation – consider mentioning resources, timelines, milestones	This is an extension of the Sustainable Energy Community. While DCC supports the development energy master plans, individuals are still required to undertake works. The costs for this action assume that all dwellings in the city need to retrofitted and at a cost of €70,000 per unit. This estimated to be an average that captures the breadth of works needed.
Impact & cost	Generated renewable energy (if applicable)	Likely Solar PV, as this is technology supported by grants ; shift to heat pumps
	Removed/substituted energy, volume, or fuel type	Reduced demand on the grid
	GHG emissions reduction estimate (total) per emission source sector	80% Reduction in emissions from built environment.
	GHG emissions compensated (natural or technological sinks)	Increased greening as part of retrofit will contribute to carbon dioxide removal
	Total costs and costs by CO2e unit	€12,390,140,000

B-2.2.39: Individual action outlines		
Action outline	Action name	CCC2 - Explore community Energy Projects with GAA and FAI
	Action type	
	Action description	Supporting the transition of sports facilities in the decarbonisation is not only an opportunity to reduce emissions but engage people. Working with GAA through green clubs and encouraging the development of a similar model for the FAI will support a just transition.
Reference to impact pathway	Field of action	Energy, Built Environment
	Systemic lever	
	Outcome (according to module B-1.1)	Reduced emissions from energy and transport, improved social cohesion,
Implementation	Responsible bodies/person for implementation	GAA, FAI,
	Action scale & addressed entities	City Wide
	Involved stakeholders	Sports clubs, DCC
	Comments on implementation – consider mentioning resources, timelines, milestones	
Impact & cost	Generated renewable energy (if applicable)	Where feasible on stadiums solar PVs
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	
	GHG emissions compensated	

	(natural or technological sinks)	
	Total costs and costs by CO2e unit	€100,000,000

B-2.2.40: Individual action outlines		
Action outline	Action name	CCC 3 Support Non Residential Retrofit
	Action type	
	Action description	Retrofit of non residential buildings in the city
Reference to impact pathway	Field of action	Built Environment
	Systemic lever	Governance and Policy
	Outcome (according to module B-1.1)	Reduce energy use, improved social and economic environment,
Implementation	Responsible bodies/person for implementation	Commercial building owners and companies, public sector bodies, semi states
	Action scale & addressed entities	City wide
	Involved stakeholders	DCC
	Comments on implementation – consider mentioning resources, timelines, milestones	Dublin is home to 15% of Ireland's Commercial Buildings (109,000), the resources required to retrofit is estimated based on an assumption of €130/sqm. A further challenge to this is identifying owners of vacant buildings. The majority of public buildings are also heritage buildings that can present their own challenges.
Impact & cost	Generated renewable energy (if applicable)	
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	80% reduction in emissions from all sectors
	GHG emissions compensated (natural or technological sinks)	Carbon dioxide removal will be achieved through inclusion of nature-based solutions as part of retrofit; green roofs, green walls
	Total costs and costs by CO2e unit	€106,275,000,000

B-2.2.41: Individual action outlines		
Action outline	Action name	CCC4 - Public Transport promotion with Dublin Bus and Luas
	Action type	
	Action description	Work with Dublin Bus and Transdev to encourage use of public transport, as part of multi-modal commuting for work, school and play, through campaigns and activations
Reference to impact pathway	Field of action	Transport
	Systemic lever	
	Outcome (according to module B-1.1)	Reduced transport emissions, improved air quality, improved health and well-being
Implementation	Responsible bodies/person for implementation	Dublin Bus, TransDev, DCC
	Action scale & addressed entities	City wide
	Involved stakeholders	Citizens
	Comments on implementation – consider mentioning resources, timelines, milestones	Public perception of public transport, and preference cars due to their cultural status
Impact & cost	Generated renewable energy (if applicable)	NA

	Removed/substituted energy, volume, or fuel type	NA
	GHG emissions reduction estimate (total) per emission source sector	80% reduction in emissions from transport
	GHG emissions compensated (natural or technological sinks)	
	Total costs and costs by CO2e unit	€100,000

B-2.2.42: Individual action outlines		
Action outline	Action name	CCC5 - Support third level institutions in the city in accelerating the delivering of their climate action plans
	Action type	
	Action description	Recognising their leadership in research and innovation collaboration and co-creation to accelerate the city's transition is vital, working to support the acceleration of their climate plans will ensuring that knowledge exchange into the private and commercial sectors is accelerated too.
Reference to impact pathway	Field of action	All
	Systemic lever	
	Outcome (according to module B-1.1)	
Implementation	Responsible bodies/person for implementation	Third Level Institutions
	Action scale & addressed entities	City Wide
	Involved stakeholders	DCC, NTA, ESB,
	Comments on implementation – consider mentioning resources, timelines, milestones	As public sector bodies third level institutions are required to achieve a 51% reduction in emissions. Beyond these institutions, recognising their role as leaders Trinity College Dublin, University College Dublin, Technical University Dublin and Dublin City University are supportive of Dublin City in the Mission. Recognising their leadership in research and innovation collaboration and co-creation to accelerate the city's transition if vital.
Impact & cost	Generated renewable energy (if applicable)	TBD; renewable energy sources are a priority, TUDublin is partnered with DCC to introduce Geothermal on campus.
	Removed/substituted energy, volume, or fuel type	Fossil fuel systems
	GHG emissions reduction estimate (total) per emission source sector	80% reduction in emissions from all sectors
	GHG emissions compensated (natural or technological sinks)	
	Total costs and costs by CO2e unit	Varies per institution; costs need to be separated from

B-2.2.43: Individual action outlines		
Action outline	Action name	CCC6 - BUMBLEance Fleet Transition to EV
	Action type	
	Action description	BUMBLEance is a unique service in the Irish Healthcare sector. It is a community ambulance serving disadvantaged communities, providing a transport service for sick children. The transition of their fleet of vehicle is an opportunity to

		demonstrate that emergency vehicles can be electrified and still deliver a high standard of reliable care.
Reference to impact pathway	Field of action	Transport
	Systemic lever	Finance
	Outcome (according to module B-1.1)	Reduction in emissions from transport This project will be an important trial for zero-emission medical transport. BUMBLEnce operate 15 other vehicles across the country; because all children's hospitals in the ROI are based in Dublin, our vehicles travel through Dublin City on nearly every trip, of which we make 2,000 each year, emitting pollutants on each trip. The implications of a successful trial are significant – BUMBLEance will lead the way in sustainable Irish medical transport with a view to phasing all-electric vehicles into our full fleet, creating a ripple effect both in and outside of Ireland.
Implementation	Responsible bodies/person for implementation	BUMBLEance
	Action scale & addressed entities	City Wide
	Involved stakeholders	DCC, HSE
	Comments on implementation – consider mentioning resources, timelines, milestones	Concerns over range; and reliability to deliver patients.
Impact & cost	Generated renewable energy (if applicable)	Possible to trial Solar PV charging stations to reduce dependency and demand on grid
	Removed/substituted energy, volume, or fuel type	Fossil Fuels.
	GHG emissions reduction estimate (total) per emission source sector	400,000kg/CO2 of emissions in Dublin City.
	GHG emissions compensated (natural or technological sinks)	
	Total costs and costs by CO2e unit	€600,000

B-2.2.44: Individual action outlines		
Action outline	Action name	CCC 7 Exploration of Systemic Finance Architecture to achieve a robust connected circular economy on the island of Ireland
	Action type	
	Action description	Progressing our work in supporting an ecosystem of social and circular SMEs, we know we need to understand deeply the finance architecture to enable scaling out and up; and that this will benefit our partners along the Dublin Belfast Economic Corridor and how we work to create the conditions for investment in SMEs.
Reference to impact pathway	Field of action	Circular Economy, Green Industry
	Systemic lever	Finance & Funding
	Outcome (according to module B-1.1)	Finance options and recommendations
Implementation	Responsible bodies/person for implementation	Dublin City Council, Centre for Policy Impacts
	Action scale & addressed entities	
	Involved stakeholders	Private business owners, Planning authority, Social Enterprise Organisations Belfast City Council, Dublin Belfast Economic Corridor, Department of Taoiseach, Dublin Port, Rediscovery Centre, Dublin

		Food Chain,
	Comments on implementation – consider mentioning resources, timelines, milestones	Funding from national government is needed
Impact & cost	Generated renewable energy (if applicable)	
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	Reduction in emissions associated with waste.
	GHG emissions compensated (natural or technological sinks)	
	Total costs and costs by CO2e unit	€300,000

B-2.2: Individual action outlines		
(Fill out one sheet per intervention/project)		
Action outline	Action name	CCC8 Codling Wind Park Offshore Wind Energy
	Action type	
	Action description	Codling Wind Park will be located approximately 13 – 22 kilometres off the coast of County Wicklow, between Greystones and Wicklow Town. The overall size of the array site is 125 km2. Previously it had been had thought around 100 turbines would need to be constructed but, in April 2024, the project confirmed a maximum of 75 and a minimum of 60 turbines would now be required. Although this is a significant reduction in wind turbines, the development will still generate 1,300 megawatts (MW) of clean electricity, enough to power over one million Irish homes.
Reference to impact pathway	Field of action	Energy
	Systemic lever	Technology/ Infrastructure
	Outcome (according to module B-1.1)	Increased renewables on the grid
Implementation	Responsible bodies/person for implementation	50/50 joint venture between Fred. Olsen Seawind and EDF Renewables EirGrid/ESB
	Action scale & addressed entities	County wide
	Involved stakeholders	DECC, Dublin City Council,
	Comments on implementation – consider mentioning resources, timelines, milestones	Transmitting electricity from Codling Wind Park into the national grid requires a new onshore substation. This 220kv substation will be built on a site adjacent to Pigeon House Harbour, on the west side of the Poolbeg peninsula. The substation will prepare the electricity to the appropriate specifications for delivery to EirGrid's substation at Poolbeg.
Impact & cost	Generated renewable energy (if applicable)	1300 MW
	Removed/substituted energy, volume, or fuel type	Substitution of fossil fuels on grid
	GHG emissions reduction estimate (total) per emission source sector	1.7 Million tonnes of CO2e/ year
	GHG emissions compensated (natural or technological sinks)	NA
	Total costs and costs by CO2e unit	€2,000,000,000 (between 2024-2026)

B-2.2.44: Individual action outlines		
Action outline	Action name	CCC8 –Bus Connects Dublin Network Redesign
	Action type	
	Action description	The overall network represents a major investment in enhanced bus services, delivering a 35% increase in annual "in-service" kilometres, a significant increase in overall capacity and frequency for customers, as well as more evening and weekend services. This new bus network plan took into account issues raised by over 72,000 submissions at the various stages of public consultation. The implementation of the new network, known as the Dublin Network Redesign Project, is being delivered in phases over a number of years, and commenced in 2021.
Reference to impact pathway	Field of action	Transport
	Systemic lever	Technical, Governance and Policy, Democracy and Participation
	Outcome (according to module B-1.1)	Improved mobility, social cohesion, improved health and wellbeing.
Implementation	Responsible bodies/person for implementation	Dublin Bus, NTA, TII Department of Transport, Dublin City Council
	Action scale & addressed entities	County wide
	Involved stakeholders	
	Comments on implementation – consider mentioning resources, timelines, milestones	The benefits of the Network Redesign include an overall increase in bus services of 23%, increased services and increased access to jobs and education. Peak hour capacity, increased evening and weekend services, 24 hour operations on some routes, a 16% increase in the number of residents located within 400m of a frequent bus service to the city centre, new connections to schools, hospitals and other essential
Impact & cost	Generated renewable energy (if applicable)	NA
	Removed/substituted energy, volume, or fuel type	NA
	GHG emissions reduction estimate (total) per emission source sector	Reduction in emissions from Transport
	GHG emissions compensated (natural or technological sinks)	As part of the redesign there will be an increase in greening due to integration of SuDS
	Total costs and costs by CO2e unit	

B-2.2.44: Individual action outlines		
Action outline	Action name	CCC10- Dart Plus
	Action type	
	Action description	DART+ is the transformative programme that will ensure train travel is at the heart of Ireland's sustainable transport network. Funded under the National Development Plan by the National Transport Authority, DART+ is an investment that will double the capacity and treble the electrification of the Greater Dublin Area network, facilitating sustainable mobility and development to enhance quality of life in our capital and its surrounding counties. The overall programme will provide electrification of lines on DART+ West to

		Maynooth/M3 Parkway, on DART+ South-West to Hazelhatch and DART+ Coastal North to Drogheda. DART+ Coastal South will also see key infrastructure works as far as Greystones to allow more trains to operate.
Reference to impact pathway	Field of action	Transport
	Systemic lever	Technical, Governance and Policy, Democracy and Participation
	Outcome (according to module B-1.1)	Improved mobility, social cohesion, improved health and wellbeing.
Implementation	Responsible bodies/person for implementation	TII, NTA, Irish Rail
	Action scale & addressed entities	County Wide
	Involved stakeholders	DCC,
	Comments on implementation – consider mentioning resources, timelines, milestones	DART+ is estimated to bring an increase in rail passengers in the region of 100-150,000 passenger boarding per day or 25-30 million per annum.
Impact & cost	Generated renewable energy (if applicable)	
	Removed/substituted energy, volume, or fuel type	Private car usage will be reduced along these rail lines bring a reduction in petrol and diesel consumption. In addition to an increase in electric train journeys over diesel train journeys. However, the modelling undertaken as part of the project appraisal has not provided estimated on the replacement of these fuels.
	GHG emissions reduction estimate (total) per emission source sector	Reduction in transport emissions as an electric train typically emits 20-35% less carbon per passenger mile than a diesel train and this will be further reduced as grid decarbonisation continues. DART+ will result in estimated reduction of 16,000 tonnes of CO2 per annum once fully implemented and total CO2 savings over the 60-year appraisal timeframe of 653,000 tonnes of CO2 (source: DART+ preliminary business case).
	GHG emissions compensated (natural or technological sinks)	
	Total costs and costs by CO2e unit	

B-2.2.44: Individual action outlines		
Action outline	Action name	CCC11 MetroLink
	Action type	
	Action description	MetroLink is a transformative piece of new public transport infrastructure, the first of its kind in Ireland. It will comprise a high-capacity, high-frequency, modern and efficient metro railway, with 16 new stations running from Swords to Charlemont. The alignment will link Dublin Airport, Irish Rail, DART, Dublin Bus and Luas services and create a fully integrated public transport network for the Greater Dublin Area (GDA). The MetroLink alignment is shown in adjacent map.
Reference to impact pathway	Field of action	Transport
	Systemic lever	Technical, Governance and Policy, Democracy and Participation
	Outcome (according to module B-1.1)	Improved mobility, social cohesion, improved health and wellbeing.
Implementation	Responsible bodies/person for	TII, NTA

	implementation	
	Action scale & addressed entities	County wide
	Involved stakeholders	DCC, Fingal,
	Comments on implementation – consider mentioning resources, timelines, milestones	MetroLink is the single biggest investment in transport infrastructure in the history of the State and is part of an integrated transport system for the Greater Dublin Area (GDA). This system also includes for BusConnects and DART+ all of which are included under Project Ireland 2040. Together these projects will result in reliable, sustainable, affordable, integrated public transport system that will support the economy, help Ireland meet its climate change targets in line with Climate Action Plan (CAP) 2024 and make Dublin a more liveable and sustainable city. While MetroLink is a critical part of the proposed integrated transport system for the GDA, it is a standalone project that is not dependent on any other projects for its delivery or effective operation.
Impact & cost	Generated renewable energy (if applicable)	NA
	Removed/substituted energy, volume, or fuel type	Estimated the MetroLink will carry around 53 million people per year and that 6.8 million car trips will be diverted in the early years of MetroLink rising to 12 million trips per annum by 2045 (source: MetroLink Sustainability Plan).
	GHG emissions reduction estimate (total) per emission source sector	
	GHG emissions compensated (natural or technological sinks)	
	Total costs and costs by CO2e unit	

B-2.2: Individual action outlines		
Action outline	Action name	Operations and Service Delivery: 'Our Staff' OS1-OS7
	Action type	
	Action description	There are 7 actions under 'Our Staff' element of the DCC's Operations and Service Delivery and these aim to improve the efficiency and reduce the associated environmental impacts. These include a Sustainable Work Etiquette Guide; promote active travel and sustainable modes for commuting; Implement Smart Mobility Hubs; Staff Energy Awareness campaigns; Occupational Eco-driving Training; Risk Workshops to assess climate impacts on Council services.
Reference to impact pathway	Field of action	Mobility and Transport; Built Environment; Waste and Circular Economy
	Systemic lever	Learning and Capabilities; Policy and Governance
	Outcome (according to module B-1.1)	
Implementation	Responsible bodies/person for implementation	Dublin City Council
	Action scale & addressed entities	Primarily DCC organisational scale with some wider impacts / co-benefits for city
	Involved stakeholders	Internal Departments, Staff
	Comments on implementation – consider mentioning resources, timelines, milestones	Progress on these programmes focused on staff have associated indicators, such as energy and water use, waste generation, modal shift in staff

		travel survey, mileage claims, and fuel consumption all are monitored at least on an annual basis.
Impact & cost	Generated renewable energy (if applicable)	
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	80% reduction in emissions from all sectors
	GHG emissions compensated (natural or technological sinks)	
	Total costs and costs by CO2e unit	

B-2.2: Individual action outlines		
Action outline	Action name	Operations and Service Delivery: 'Our Buildings' B1-B9
	Action type	
	Action description	There are 9 actions under the 'Our Buildings' element of Operations and Service Delivery and these include flat complex regeneration; planned improvements of housing stock; delivery of social housing; incorporation of Nature-Based Solutions to Council Developments; implementation of SUDS Guidelines; Improved water usage; display energy certs; provision of renewables; Monitoring and Reporting to SEAI
Reference to impact pathway	Field of action	Energy Systems; Built Environment;
	Systemic lever	Learning and Capabilities; Policy and Governance
	Outcome (according to module B-1.1)	Development of staff capacity; reduce emissions in transport and built environment; improved air quality; improved health and well-being
Implementation	Responsible bodies/person for implementation	Dublin City Council
	Action scale & addressed entities	
	Involved stakeholders	Internal Departments, Housing Bodies; Developers; SEAI, Codema
	Comments on implementation – consider mentioning resources, timelines, milestones	Progress on these actions have associated indicators such as # of trees / shrubs; SUDS projects; water consumption; and compliance with display and reporting requirements. Budget has been allocated to each action as appropriate.
Impact & cost	Generated renewable energy (if applicable)	
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	80% reduction in emissions from all sectors (25640.4 t of CO2e)
	GHG emissions compensated (natural or technological sinks)	Greening to be included in retrofits
	Total costs and costs by CO2e unit	

B-2.2: Individual action outlines		
Action outline	Action name	Operations and Service Delivery: 'Our Operations & Services' OS1-OS27
	Action type	

	Action description	There are 27 actions under the 'Our Operations & Services' and these include Green Public Procurement; Audit of Climate expenditure; Ecology Assessments; road and active travel route maintenance; monitoring modal shift and traffic flows; Flood mitigation and emergency response planning; air quality monitoring; waste regulation enforcement; sustainability guidelines for events; convert suitable fleet to EV; Seagrass monitoring; implement Tree Strategy
Reference to impact pathway	Field of action	
	Systemic lever	Learning and Capability; Policy and Governance
	Outcome (according to module B-1.1)	Development of staff capacity; reduce emissions in transport and built environment; improved air quality; improved health and well-being
Implementation	Responsible bodies/person for implementation	Dublin City Council
	Action scale & addressed entities	City Wide
	Involved stakeholders	Internal Departments; An Taisce; OPW; EPA; CARO; Birdwatch Ireland
	Comments on implementation – consider mentioning resources, timelines, milestones	Actions have been integrated in department work programmes and allocated budget as appropriate. The associated indicators and calculation include waste volumes, vehicle KMs and fuel consumption, embodied, sequestered and operational emissions, air pollutants (PMx, Nox, Sox)
Impact & cost	Generated renewable energy (if applicable)	NA
	Removed/substituted energy, volume, or fuel type	Fossil fuels
	GHG emissions reduction estimate (total) per emission source sector	Reduction in emissions from waste, reduced emission from energy, when shift plant from fossil fuels to electricity.
	GHG emissions compensated (natural or technological sinks)	Increased sequestration through NBS deployed for flood alleviation projects.
	Total costs and costs by CO2e unit	

B-2.2: Individual action outlines		
Action outline	Action name	Operations and Service Delivery: 'Our Engagement Activities and Partnerships' EP1-EP32
	Action type	
	Action description	There are 32 actions under Our Engagement Activities and Partnerships and these include Sustainable Living programme for council tenants; Bike Week/ mobility week/ pedestrian days; cycle training / pedal power labs; flood awareness / risk management; Home Energy Saving Kits in Libraries; anti-litter / dumping; Stop Food Waste campaign; leaf composting workshops; Green Schools; Recycling and circular economy workshops; Tree-planting days; SoCircular Programme; Dublin Bay Biosphere; Dublin Mountains Partnership; Public Service Innovation Week.
Reference to impact pathway	Field of action	
	Systemic lever	Learning and Capability; Policy and Governance; Finance and Funding; Democracy and Participation; Social Innovation
	Outcome (according to module B-1.1)	Development of staff capacity; reduce emissions in transport and built environment; improved air

		quality; improved health and well-being; Co-creation of workshops with citizens; supporting small business innovation.
Implementation	Responsible bodies/person for implementation	Dublin City Council
	Action scale & addressed entities	City wide
	Involved stakeholders	Internal Departments; DLRCC; SDCC; Failte Ireland; Dublin Port Authority; Coillte; NPWS; OPW; Schools; NTA
	Comments on implementation – consider mentioning resources, timelines, milestones	Actions have been integrated in department work programmes and allocated budget as appropriate.
Impact & cost	Generated renewable energy (if applicable)	NA
	Removed/substituted energy, volume, or fuel type	NA
	GHG emissions reduction estimate (total) per emission source sector	Contributes to 80% reduction in emissions from all sectors
	GHG emissions compensated (natural or technological sinks)	
	Total costs and costs by CO2e unit	

B-2.2: Individual action outlines		
Action outline	Action name	IM1 Oversight by Steering Group
	Action type	
	Action description	Proactive collaboration across internal departments, and with external agencies and organisations to implement and monitor the impacts of this climate action plan requires strong leadership from senior management. A Steering Group chaired by the Chief Executive to oversee the overall direction of progress and ensure that Dublin City Council, as an organisation is a leading light in decarbonisation, embedding climate resilience, facilitating co-benefits for climate and other environmental factors, and principles of equity in our operations and service delivery has been established. The Steering Group will ensure that internal structures are in place to foster ownership, accountability, and delivery of actions and projects are resourced; and provide quarterly reports to elected members via Strategic Policy Committees, and annually to the full Council. Monitoring of indicators will ensure that we keep on track and progress will be shared with citizens via the Climate Newsletter, public events and City Council Reports.
Reference to impact pathway	Field of action	All
	Systemic lever	Learning and capability, Policy and governance, Democracy and Participation
	Outcome (according to module B-1.1)	Normalised cross departmental working; Engagement with external stakeholders
Implementation	Responsible bodies/person for implementation	Chief Executive
	Action scale & addressed entities	City wide
	Involved stakeholders	Internal Departments,
	Comments on implementation – consider mentioning resources,	

	timelines, milestones	
Impact & cost	Generated renewable energy (if applicable)	NA
	Removed/substituted energy, volume, or fuel type	NA
	GHG emissions reduction estimate (total) per emission source sector	NA
	GHG emissions compensated (natural or technological sinks)	NA
	Total costs and costs by CO2e unit	

B-2.2: Individual action outlines		
Action outline	Action name	IM2 Challenge Led Approach:
	Action type	
	Action description	Recognising the limitations of "change-as-usual", our Plan is taking a challenge led approach to foster better coordination and increased engagement; and to unleash the collective intelligence of a variety of actors impacted by, and responsible for the change to be realised by our plan
Reference to impact pathway	Field of action	All
	Systemic lever	Learning and capability, Policy and governance, Democracy and Participation
	Outcome (according to module B-1.1)	Widespread adoption of a challenge led approach to embed systems thinking.
Implementation	Responsible bodies/person for implementation	Dublin City Council
	Action scale & addressed entities	Various
	Involved stakeholders	Challenge dependent
	Comments on implementation – consider mentioning resources, timelines, milestones	Time scales, resources, capacity and political will
Impact & cost	Generated renewable energy (if applicable)	Challenge dependent
	Removed/substituted energy, volume, or fuel type	Challenge dependent
	GHG emissions reduction estimate (total) per emission source sector	Challenge dependent
	GHG emissions compensated (natural or technological sinks)	Challenge dependent
	Total costs and costs by CO2e unit	Challenge dependent

B-2.2: Individual action outlines		
Action outline	Action name	IM3 Monitoring
	Action type	
	Action description	Without monitoring we will not know how we are progressing, what is working or not, and who we need to engage to implement changes necessary for climate neutrality. The actions in our plan are linked to headline indicators and sub indicators as well as our targets. Together the data from these indicators and targets provide a picture and a story of the impacts of our actions on quality of life in the

		city. Monitoring is also an opportunity for collaboration.
Reference to impact pathway	Field of action	All Sectors
	Systemic lever	Learning and capability, Technology/Infrastructure Democracy and Participation; Social Innovation
	Outcome (according to module B-1.1)	Expansion of Terrain AI to assist in monitoring of impacts with integration of health and well-being indicators – Robust monitoring system
Implementation	Responsible bodies/person for implementation	Dublin City Council, Maynooth University, University College Dublin
	Action scale & addressed entities	City Wide
	Involved stakeholders	Data owners, LGMA, CARO
	Comments on implementation – consider mentioning resources, timelines, milestones	Resources have been secured for two years, but additional will be needed. Agreements will need to be established for data sharing.
Impact & cost	Generated renewable energy (if applicable)	
	Removed/substituted energy, volume, or fuel type	
	GHG emissions reduction estimate (total) per emission source sector	All sectors should see a reduction
	GHG emissions compensated (natural or technological sinks)	Monitoring will identify opportunities for NBS measures and therefore carbon dioxide removal.
	Total costs and costs by CO2e unit	

B-2.2: Individual action outlines		
Action outline	Action name	IM4 Ireland& Dublin& You
	Action type	
	Action description	Your active participation in the implementation of this climate action plan, which is about safeguarding our collective future is essential. We will keep you informed, engaged and active in this plan through our Climate Newsletter, events and reports to council
Reference to impact pathway	Field of action	All Sectors
	Systemic lever	Learning and capability, Democracy and Participation; Social Innovation
	Outcome (according to module B-1.1)	Toolkit for co-recreation
Implementation	Responsible bodies/person for implementation	Dublin City Council, Elected Representatives
	Action scale & addressed entities	City Wide
	Involved stakeholders	Public participation Networks, NGOs, Tidy Towns, Citizens
	Comments on implementation – consider mentioning resources, timelines, milestones	Challenge will be building trust and communication with stakeholders
Impact & cost	Generated renewable energy (if applicable)	Should see an increased in community renewable energy projects
	Removed/substituted energy, volume, or fuel type	NA
	GHG emissions reduction estimate (total) per emission source sector	Contributes to 80% reduction in emissions from all sectors
	GHG emissions compensated (natural or technological sinks)	

	Total costs and costs by CO2e unit	

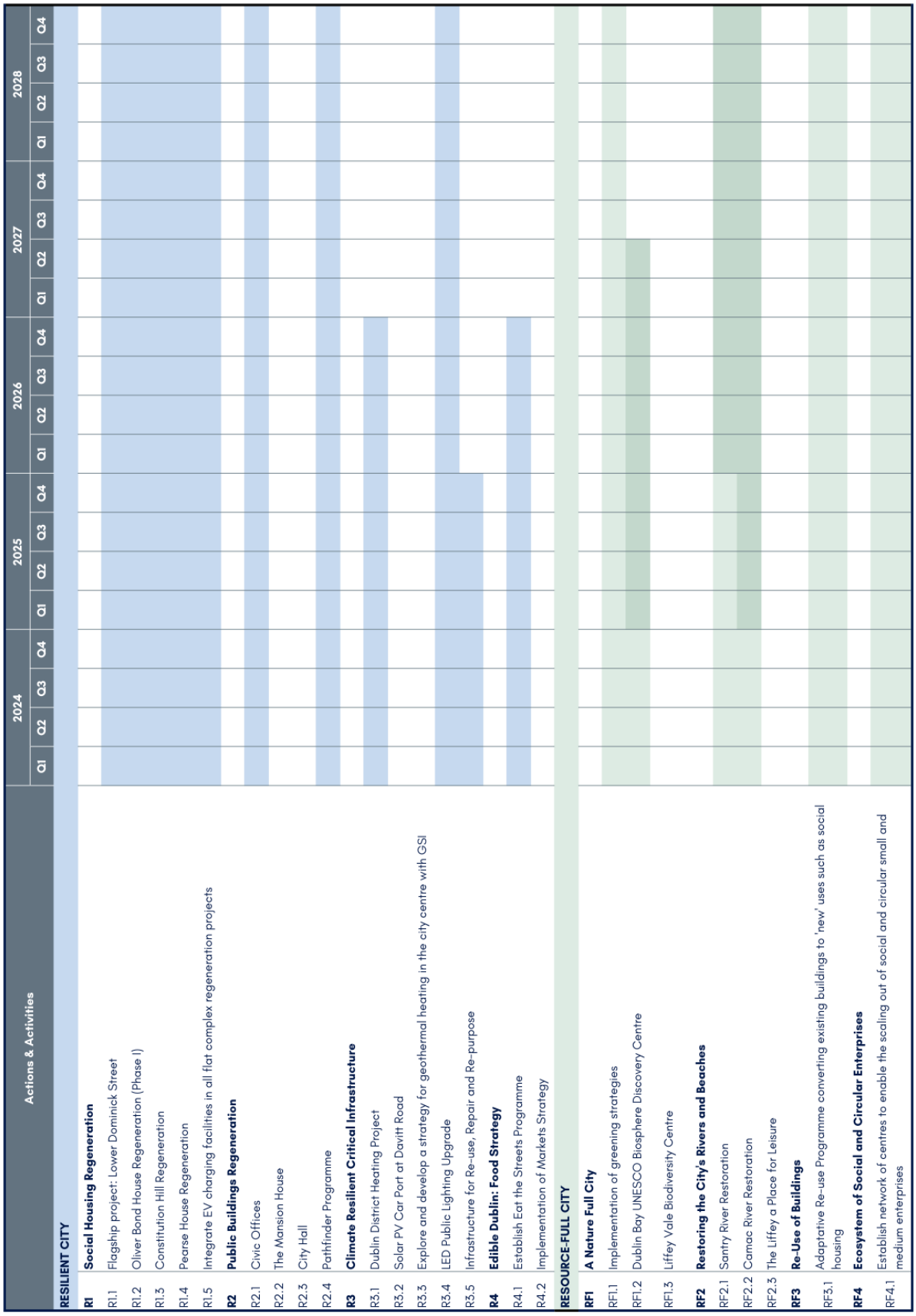


Figure 27 Timeline of Actions (Resilient City and Resource-Full City)

	Actions & Activities	2024				2025				2026				2027				2028			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
CREATIVE CITY																					
C1	**Community Hubs**																				
C1.1	Parnell Square Cultural Quarter																				
C1.2	Dalymount Park Redevelopment																				
C1.3	Maker Spaces in Libraries																				
C1.4	Improved Community Facilities																				
C2	**Networks for Knowledge Exchange**																				
C2.1	Partnership Programme with Third Level institutions - Future Work Force																				
C2.2	Establish Annual Deep Dive Data Challenge unearth learnings and target resources linking to implementation action on monitoring)																				
C3	**Innovation Districts**																				
C3.1	Resilient North East Inner City																				
C3.2	Climate Smart Districts																				
C4	**Decarbonisation Zones**																				
C4.1	Ringsend Decarbonisation Zone																				
C4.2	Ballymun Decarbonisation Zone																				
SOCIAL CITY																					
S1	**A Connected Active Travel Network**																				
S1.1	Delivery of Active Travel projects in accordance with the 2022 to 2024 projects (C2CC, Liffey, Royal Canal)																				
S1.2	Delivery of Active Travel projects in accordance with the 2025 to 2027 projects																				
S1.3	Delivery of Active Travel projects in accordance with the 2027 and onward projects																				
S1.4	Community Participation Events to celebrate new active travel routes as they open and encourage use																				
S1.5	Behaviour Change initiatives to encourage use of the network and modal shift across diverse groups																				
S2	**Neighbourhoods are the Heart**																				
S2.1	Sustainable Energy Communities																				
S2.2	Quiet Zones																				
S2.3	Low carbon mobility hubs (EV charging infrastructure)																				
S3	**Our Parks are Playful Places for All Ages**																				
S3.1	Delivery of Parks Strategy																				
S3	**A Re-imagined Public Realm**																				
S3.1	City Centre Public Realm																				
S3.2	Laneways of Dublin 1 and Dublin 2																				
S3.3	Vibrant Streets																				

Figure 28 Timeline of Action (Creative City and Social City)

B-2.3: Summary strategy for residual emissions

As stated in our CCC improving our data capacity is a strategic priority for Dublin City and provides an avenue for collaboration. Data is an opportunity for co- creation, collaboration. Partnerships are essential to developing a detailed baseline and monitoring system to understand the impacts our actions are having on emissions, climate, and people.

Urban Sense, a pilot project between Terrain AI at Maynooth University, Microsoft, Cellnex, Edgieliot and DCC has seen the deployment of 20 sensors across residential and commercial areas in Dublin. The sensors, which measure greenhouse gases such as carbon dioxide and methane, as well as air quality parameters and weather variables, will provide a real-time visual pulse of the city, reflecting differences in land use, seasonal cycle in vegetation growth, weather events and even hourly patterns of traffic moving in and around the city streets. DCC is keen to see how this partnership will strengthen our capacity to communicate the impacts of our policies. The challenge here will be scaling and financing the project in a manner that ensures public good remains at the core.

Further, DCC is also actively supporting the continuation of Terrain AI, a multidisciplinary research collaboration to understand the impact of human activity on land use.

Recognising the compounding challenges of climate change and the demands that emerge with a growing global population. Terrain AI is exploring innovative AI and computational methodologies in how we collect, fuse and model multi-thematic data in order to develop a better understanding of GHG exchange across our farms, forests, peatlands and urban spaces. These improved GHG monitoring methodologies and standards will be adapted & scaled for other regions and countries across the globe.

Funded by Science Foundation Ireland (SFI) and Microsoft Terrain AI develops new cloud-based, automated work-flows and machine learning data toolsets for profiling and characterising environment types for more effective and precise carbon mitigation policies and practices.

Terrain-AI is advancing the standards of measurement, monitoring, verification and reporting of carbon stocks and emissions across complex environments. Researchers are developing innovative AI solutions and technologies, integrated with computational models, to provide more accurate estimates of carbon fluxes across scales, and a deeper understanding of the effects of human activities, to enable decision makers to develop more effective climate mitigation strategies.

Ultimately, Terrain AI is developing a rolodex of data sets, alongside a standardized cookbook for processing data that can be accessed by researchers and policy makers, to gain a deeper understanding of policy impacts.

For Dublin City, this presents an opportunity for delivering evidence based policy enriched by data insights that can tell a rich picture of the impacts of projects, programmes and plan.

Further, at the National level there are several initiatives that will contribute to an in depth understanding of emissions. Ireland has recently joined International Carbon Observatory System (I-COS, and the Irish Centre for High-end Computing is involved in Destin-E.

Following from this we expect the data to support the delivering of strategies to identify opportunities, namely green and blue carbon opportunities to sequester carbon. Further the data will support collaboration and co-creation by identifying areas that should be targeted and where a bespoke suite of interventions should be introduced that take into account the needs of the place. For example, we have identified the NEIC as an area that needs green space, simultaneously there are challenges with social deprivation and energy poverty. Terrain AI can support identifying cost-effective policies that bring individuals by allowing us to demonstrate with a digital twin the possibility of changes that address climate action and maximises co-benefits.

3.3 Module B-3 Indicators for Monitoring, Evaluation and Learning

Module B-3 "Indicators for Monitoring, Evaluation and Learning" contains a selection of indicators to monitor and evaluate progress along the selected impacts pathways and fields of action described in Module B-1. as well as a monitoring and evaluation plan, i.e., metadata on each indicator selected, in addition to milestones and timeline. More specifically:

- An overview table listing the indicators selected per outcome and impact including targets and evaluation points (B-3.1);
- A metadata table for each indicator selected (B-3.2).

Table XII B-3.1: Impact Pathways

Outcomes/ impacts addressed	Action/ project	**Indicator No.** (unique identified)	Indicator name	Target values		
				2025	2027	2030
RESILIENT CITY - OUTCOMES						
Policy incentives in place to support technology uptake and investment	R3.1, R3.2, R3.3, R3.4, CCC6, OS1, OS2	GHG 1 GHG 3	Stationary Energy Waste and Waste Water		50%	80%
		CV 2	Air Quality	Maintain Good Status		
		CV 3	Water Quality	Maintain Good Status		
		CV 6	Noise	Maintain Good Status		
Increased uptake of renewables	R1, R2, R3, CCC1, CCC2, CCC8, B8	GHG 1	Stationary Energy	…	…	80%
		CV 2	Air Quality	Maintain Good Status		
		CV 11	Ground Level Ozone			
		CV 12	Aero Allergens			
Funding of NBS as part of active travel projects to increase resilience to UHI and flooding events	R1, R2, R3, RF3.1, S7, B5, OS3, OS10, OS13	GHG 5	AFOLU			80%
		CV 2	Air Quality	Maintain Good Status		
		CV 3	Water Quality			
		CV 5	Soil Health	M&R in place		
		CV 7	Population Health and Well-being		25%	Halved Obesity Rate
New SMEs delivering innovative solutions for improving	R3.4 R3.5 R4.1,	CV 9	Economic Performance	Stable GPD Growth		

infrastructure and city resilience	RF3.1, CCC8, CCC9, CCC10, CCC11					
Further development of DDHS and other renewable projects	R3.1, R3.2, R3.3 CCC1,	GHG 1	Stationary Energy		50%	80% (1300MW of Renewable Generation)
		CV 2	Air Quality	Maintain Good Status		
Development of a project that maximizes benefits of co-location of key critical infrastructure (Water treatment, Waste to Energy, and Energy Generation and Port)	R3, C4.1, CCC8, CCC9, CCC10, CCC11 OS15	GHG 1 GHG 3 GHG 4	Stationary Energy Waste and Waste Water IPPU		50%	80%
		CV 3	Water Quality	Maintain Good Status		
Emergence of social and circular businesses	R3.5; R4.1, RF4.1,	GHG 3	Waste and Waste Water			80%
		CV 9	Economic Performance			
Increased employment in retrofit sector	R1, R2, R4.2	CV 9	Economic Performance			
Development and implementation of Community Energy project s with GAA and FSAI	R2, CCC2	GHG1	Stationary Energy		50%	80%
Menu of best practices for engaging communities in regeneration projects for social housing	R1, CCC1, CCC2, CCC5 R4.1, R3.5, C4.1, C4.2, C3.1, C3.2	CV 7	Population Health and Well-being			
RESOURCE-FULL CITY -OUTCOMES						
Create a comprehensive research and management plan	RF1.2, RF1.3; OS23, OS24, OS25, OS26,	CV 3	Water Quality	Maintain Good Status		
		CV 4	Soil Health			
		CV 5	Biodiversity Counts			
Comprehensive nature conservation and biodiversity/ biosphere action plans	RF1.2, RF1.3, OS23, OS24, OS25, OS26,	GHG 5	AFOLU		50%	80%
		CV 3	Water Quality	Maintain Good Status		
		CV 4	Soil Health			
		CV 5	Biodiversity Counts			
New SMEs focused on NBS	RF1.1, RF2.3, RF4.1, OS23, OS24, OS25, OS26,	GHG 5	AFOLU		50%	80%
		CV 9	Economic Performance			
Expansion of hubs to address textiles and other waste streams	RF4.1, C4.1, C4.2, C3.1, C3.2, OS15, OS17, OS18, OS19, OS20	GHG 3	Waste and Waste Water		50%	80%
		CV 9	Economic Performance			

Shared composting facilities at neighbourhood level	R4.2, C4.1, C4.2, C3.1, C3.2, OS15, OS18, OS19, OS20	GHG 3	Waste and Waste Water		50%	80%
		CV 4	Soil Health			
		CV 8	Social Cohesion			
Shared composting facilities in all commercial districts with high proportion of food businesses	R4.2, CCC9	GHG 3	Waste and Waste Water		50%	80%
		CV 4	Soil Health			
		CV 9	Economic Performance			
Emergence of social and circular businesses	RF4.1, OS17	GHG 3	Waste and Waste Water		50%	80%
		CV 9	Economic Performance			
Opening of biodiversity discover centres	RF1.2, RF1.3, OS25	GHG 5 GHG 1	AFOLU Stationary Energy		50%	80%
		CV 5	Biodiversity Counts			
Established training programme for SMEs in all sectors	RF4.1, C4.1, C4.2, C3.1, C3.2	CV 9	Economic Performance			
De-paving of driveways	RF2.1, RF2.2,	GHG 5	AFOLU		50%	80%
		CV 3	Water Quality	Maintain Good Status		
CREATIVE CITY- OUTCOMES						
EV car sharing companies	C1.1, C1.2, C1.4, C4.1, C4.2, C3.1, C3.2, S2.3, S3	GHG 2	Transport		50%	80%
		CV 2	Air Quality	Maintain Good Status		
		CV 6	Noise	Maintain Good Status		
		CV 9	Economic Performance			
		CV 10	Traffic Volume			
		CV 11	Ground Level Ozone			
Increased uptake of retrofit	CCC1, CCC2, CCC5, B1, B2	GHG 1 GHG 3	Stationary Energy Waste and Waste Water		50%	80%
		CV 9	Economic Performance			
Implementation of decarbonisation zone plans	C4.1, C4.2, RF3.1	GHG 1 GHG 2 GHG 3 GHG 4 GHG 5	Stationary Energy Transport Waste and Waste Water IPPU AFOLU		50%	80%
		CV 2	Air Quality	Maintain Good Status		
		CV 3	Water Quality	Maintain Good Status		
		CV 4	Soil Health			
		CV 5	Biodiversity Counts			
		CV 6	Noise			
		CV 7	Population Health and Well-being			
		CV 8	Social Cohesion			
		CV 10	Traffic Volume			
Robust data monitoring system that supports citizen	C2.1, C2.2, IM3	All				

science						
Network of maker spaces; library of things	C1.3, OS17	CV 8	Social Cohesion			
Network expanded to include non IUA third level institutions	C2.1, CCC, IM1, IM4					
Toolkit for co-creation created	C2.1, C2.2 C4.1, C4.2, C3.1, C3.2, IM2	CV 8	Social Cohesion			
SOCIAL CITY - OUTCOMES						
Normalised use of social determinants of health to assess policy impact (Climate readiness toolkit)	ALL	CV1-CV13	All below			
Vulnerable Road user laws	S1	CV 7	Population Health and Well-being			
		CV 10	Traffic Volume			
Increased funding for the delivery of high quality public realm, parks, and green spaces	S2, S3, S4	GHG 2 GHG 5	Transport AFOLU		50%	80%
		CV 2	Air Quality	Maintain Good Status		
		CV 3	Water Quality	Maintain Good Status		
		CV 4	Soil Health			
		CV 6	Noise	Maintain Good Status		
		CV 7	Population Health and Well-being			
		CV 12	Aero Allergens			
Development of a material re-use database for street furniture	RF3.1;	GHG 3	Waste and Waste Water		50%	80%
Automated ticketing for road infractions	C2.2	GHG 2	Transport		50%	80%
		CV 10	Traffic Volume			
Established programme linking play and climate action.	S1.4, S1.5, S3.1, S4.1, S4.2, S4.3	GHG 2 GHG 5	Transport AFOLU		50%	80%
		CV 8	Social Cohesion			
		CV 10	Traffic Volume			
Citizen led network for emergency preparedness embedded in emergency response plans	S2, C1, C2, R3, CCC6	CV 8	Social Cohesion			
IMPACTS						
Improved Health and Well-being	R1, R3, CCC1, CCC2, CCC6, CCC8	CV 2	Air Quality	Maintain Good Status		
		CV 6	Noise	Maintain Good Status		
		CV 7	Population Health and Well-being			
		CV 8	Social Cohesion			
		CV 11	Ground Level Ozone			
		CV 12	Aero Allergens			

		CV 13	Monitoring of Disease Vectors			
Reduced Household spend on energy	R1, R3, CCC1, CCC2, CCC8, B1, B2, B3, B8	GHG 1 GHG 2	Stationary Energy Transport		50%	80%
		CV 7	Population Health and Well-being			
Energy security and reduction in energy poverty	R1, R3, CCC1, CCC2, CCC8, B1, B2, B3, B8	GHG 1	Stationary Energy		50%	80%
		CV 7	Population Health and Well-being			
		CV 8	Social Cohesion			
Improved air quality	R1, R3, CCC1, CCC2, CCC8, CCC9, CCC10, CCC11, B4, B5, OS14	GHG 2	Transport		50%	80%
		CV 1	Weather patterns			
		CV 2	Air Quality	Maintain Good Status		
		CV 4	Soil Health			
		CV 6	Noise	Maintain Good Status		
		CV 7	Population Health and Well-being			
Reduced noise pollution	RF1.2, RF1.3, CCC9, CCC10, CCC11, OS14	GHG 2	Transport		50%	80%
		CV 2	Air Quality	Maintain Good Status		
		CV 3	Noise			
Improved water quality	RF1.2, RF1.3, OS13	GHG 2 GHG 3 GHG 5	Transport Waste and Waste Water AFOLU		50%	80%
		CV 1	Weather patterns			
		CV 2	Air Quality	Maintain Good Status		
		CV 3	Water Quality	Maintain Good Status		
		CV 4	Soil Health			
		CV 7	Population Health and Well-being			
		CV 13	Monitoring of Disease Vectors			
Local employment opportunities	R1, R3, CCC1, CCC2, CCC8, CCC9, CCC10, CCC11	CV 7	Population Health and Well-being			
		CV 8	Social Cohesion			
		CV 9	Economic Performance			
Community wealth increases	R1, R3, CCC1, CCC2, CCC8, CCC9, CCC10, CCC11	CV 7	Population Health and Well-being			
		CV 8	Social Cohesion			
		CV 9	Economic Performance			
Social cohesion	S1.4, S1.5, S3.1, S4.1, S4.2, S4.3, CCC1, CCC2,	CV 6	Noise	Maintain Good Status		
		CV 8	Social Cohesion			
		CV 9	Economic Performance			

	CCC3, CCC9, CCC10, CCC11					
Increased biodiversity	RF1.2, RF1.3, OS13, OS24, OS25, OS26,	GHG 5	AFOLU		50%	80%
		CV 3	Water Quality	Maintain Good Status		
		CV 4	Soil Health			
		CV 5	Biodiversity Counts			
		CV 13	Monitoring of Disease Vectors			
Reduce tidal action resulting in coastal protection from erosion	RF1.2, RF1.3, OS8, OS9, OS10	CV 3	Water Quality	Maintain Good Status		
		CV 6	Noise	Maintain Good Status		
Reduction in vacant properties	R1, R3, CCC1, CCC2, CCC3 CCC8	GHG 1	Stationary Energy		50%	80%
		CV 8	Social Cohesion			
		CV 9	Economic Performance			
Improved soil health within the city and externally.	RF1.2, RF1.3	GHG 5	AFOLU		50%	80%
		CV 2	Air Quality			
		CV 3	Water Quality			
		CV 4	Soil Health			
		CV 5	Biodiversity Counts			
Vibrant neighbourhoods	S2, S3, CCC1, CCC2, CCC3, CCC4, CCC9, CCC10, CCC11	GHG 1 GHG 2 GHG 3 GHG 5	Stationary Energy Transport Waste and Waste Water AFOLU		50%	80%
		CV 2	Air Quality	Maintain Good Status		
		CV 6	Noise	Maintain Good Status		
		CV 7	Population Health and Well-being			
		CV 8	Social Cohesion			
Slow the hydropath (flood risk reduced)	RF1.2, RF1.3, OS8, OS9, OS10	GHG 5	AFOLU		50%	80%
		CV1	Weather Patterns			
		CV 3	Water Quality	Maintain Good Status		
		CV 4	Soil Health			
Increased connection to nature, fostering desire to protect, resulting in better buy-in to nature management and climate action	RF1.2, RF1.3, R4.2, S2, S3, OS13, OS24, OS25, OS26,	GHG 5	AFOLU		50%	80%
		CV 2	Air Quality	Maintain Good Status		
		CV 3	Water Quality	Maintain Good Status		
		CV 4	Soil Health			
		CV 5	Biodiversity Counts			
New economic opportunities – emergence of SMEs	C1.3, C3.2, C4.1, C4.2, R4.1, R4.2 CCC7, CCC5,	CV 8	Social Cohesion			
		CV 9	Economic Performance			
Increased safety; reduced traffic related risks	S1, S2, S3, S4, CCC4, OS4, OS5,	GHG 2	Transport		50%	80%
		CV 2	Air Quality	Maintain Good Status		

	OS6, OS7, CCC9, CCC10, CCC11	CV 6	Noise	Maintain Good Status		
		CV 7	Population Health and Well-being			
		CV 10	Traffic Volume			

COMMENT

To support systems thinking, and to briefly explain why actions are associated with multiple indicators, building on the experience of our first climate action plan we moved monitoring away from one action and one KPI to groups of actions monitored by a headline indicator and cross cutting indicators. See Climate Neutral Dublin 2030. This is further supported by the Climate Readiness Toolkit.

B-3.2.1: Indicator Metadata – GHG1	
(For each indicator selected)	
Indicator Name	GHG Stationary Energy
Indicator Unit	tCO2e
Definition	GHGs stemming from operations of buildings
Calculation	GHG emissions = Activity data × Emission factor
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	Yes
If yes, which emission source sectors does it measure?	Built Environment, IPPU, Transport, Waste
Does the indicator measure indirect impacts (i.e., co- benefits)?	No
If yes, which co-benefit does it measure?	Specify co-benefit
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	Impact Pathways according to Module B-1 Resilient City and Resource-Full City actions primarily, but it is anticipated that there will be some evidence of stationary energy emissions reducing in relation to Creative city actions, specifically those related to decarbonisation zones, and innovation districts.
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	Covenant of Mayors
Data requirements	
Expected data source	Own energy monitoring system, CSO, ESB
Is the data source local or regional/national?	Combination of local and national
Expected availability	Yearly
Suggested collection interval	DCC's data is available monthly,
References	
Deliverables describing the indicator	Reductions in energy use; and increase in composition of energy coming from renewable sources
Other indicator systems using this indicator	MW/h – Usage, MW

B-3.2.2: Indicator Metadata – GHG 2	
(For each indicator selected)	
Indicator Name	GHG Transport
Indicator Unit	tCO2e
Definition	GHGs emissions stemming from operation of vehicles
Calculation	GHG emissions = Activity data × mode share x intensity x fuel type
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	Yes
If yes, which emission source sectors does it measure?	Transport
Does the indicator measure indirect impacts (i.e., co- benefits)?	No
If yes, which co-benefit does it measure?	NA
Is the indicator useful for monitoring the	Yes

output/impact of action(s)?	
If yes, which action and impact pathway is it relevant for?	Impact Pathways according to Module B-1 Resilient City and Social City actions primarily, but it is anticipated that there will be some evidence of transport emissions reducing in relation to Creative city actions, specifically those related to decarbonisation zones, and innovation districts.
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	Covenant of Mayors
Data requirements	
Expected data source	Traffic asset management system, NTA, car sales and fuel sales data
Is the data source local or regional/national?	Combination of local and national
Expected availability	Yearly
Suggested collection interval	Preferred monthly
References	
Deliverables describing the indicator	Reductions in vehicle miles travelled and decrease in private car use, with an increased public transport and active modes. Reduction in traffic accidents.
Other indicator systems using this indicator	MW/h – Usage, MW

B-3.2: Indicator Metadata - GHG3	
(For each indicator selected)	
Indicator Name	GHG Waste and Waste Water
Indicator Unit	tCO2e
Definition	GHGs emissions from waste treatment, waste incineration and landfills
Calculation	GHG emissions based on volume of waste produced type and volume and treatment – incineration etc. Emissions= Vol of Waste * emission factor + biologically treated waste + Incineration of waste + waste water treatment + industrial waste water
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	Yes
If yes, which emission source sectors does it measure?	Waste; Waste and Waste Water
Does the indicator measure indirect impacts (i.e., co- benefits)?	No
If yes, which co-benefit does it measure?	NA
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	Impact Pathways according to Module B-1 Resource -Full actions primarily, but it is anticipated that there will be some evidence of transport emissions reducing in relation to Creative city actions, specifically those related to decarbonisation zones, and innovation districts.
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	Covenant of Mayors
Data requirements	
Expected data	Waste Prevention Office, Waste Providers, and

source	Encyclis (WtE) and EPA
Is the data source local or regional/national?	Combination of local and national
Expected availability	Yearly
Suggested collection interval	Preferred monthly
References	
Deliverables describing the indicator	Reductions in waste produced
Other indicator systems using this indicator	

B-3.2: Indicator Metadata - GHG4	
(For each indicator selected)	
Indicator Name	GHG emission from IPPU
Indicator Unit	tCO2e
Definition	GHGs emissions from industrial processes and product use within city boundary.
Calculation	GHG emissions = Carbon intensity (Cement Production) * total production volume/Mass
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	Yes
If yes, which emission source sectors does it measure?	IPPU
Does the indicator measure indirect impacts (i.e., co- benefits)?	No
If yes, which co-benefit does it measure?	NA
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	Impact Pathways according to Module B-1 Resilient City but it is anticipated that there will be some evidence of transport emissions reducing in relation to Creative city actions, specifically those related to the Ringsend Poolbeg decarbonisation zone.
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	Covenant of Mayors
Data requirements	
Expected data source	Company – ECOCEM
Is the data source local or regional/national?	Company
Expected availability	Yearly
Suggested collection interval	Preferred monthly
References	
Deliverables describing the indicator	Reduction in clinker content of cement resulting in reduced emission
Other indicator systems using this indicator	

B-3.2: Indicator Metadata – GHG 5	
(For each indicator selected)	
Indicator Name	GHG emission from AFOLU
Indicator Unit	tCO2e
Definition	GHGs emissions from land-use activities

Calculation	GHG emissions = Livestock (CH4 = N(T) × EF(Enteric,T) × 10-3) + Manure (CH4 and N2O) + Aggregate (Forest land + Grassland +Wetlands)
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	Yes
If yes, which emission source sectors does it measure?	AFOLU
Does the indicator measure indirect impacts (i.e., co- benefits)?	No
If yes, which co-benefit does it measure?	NA
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	Impact Pathways according to Module B-1 Resilient City, Resource- Full City and Social City actions primarily, but it is anticipated that there will be some evidence of transport emissions reducing in relation to Creative city actions, specifically those related to decarbonisation zones, and innovation districts.
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	Covenant of Mayors
Data requirements	
Expected data source	NPWS, Academia (Terrain AI), EPA, I-COS, OSI, GSI
Is the data source local or regional/national?	Combination of local and national
Expected availability	Yearly
Suggested collection interval	Preferred monthly
References	
Deliverables describing the indicator	Increased green cover; durable carbon dioxide removal
Other indicator systems using this indicator	

Climate Vitals

B-3.2: Indicator Metadata – CV1	
(For each indicator selected)	
Indicator Name	CV 1 – Weather Patterns (CV 1.1 Urban Heat)
Indicator Unit	Temperature; rainfall; wind patterns
Definition	Variations in average weather from year to year assist in understanding if the reductions in emissions are having an impact in reversing the effects of anthropogenic climate change.
Calculation	NA
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	No
If yes, which emission source sectors does it measure?	
Does the indicator measure indirect impacts (i.e., co- benefits)?	Yes
If yes, which co-benefit does it measure?	Impacts of actions.
Is the indicator useful for monitoring the	Yes

output/impact of action(s)?	
If yes, which action and impact pathway is it relevant for?	Impact Pathways according to Module B-1 All actions
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	
Data requirements	
Expected data source	Met Eireann
Is the data source local or regional/national?	National
Expected availability	Monthly
Suggested collection interval	Monthly
References	
Deliverables describing the indicator	
Other indicator systems using this indicator	

B-3.2: Indicator Metadata – CV2	
(For each indicator selected)	
Indicator Name	CV 2 – Air Quality (CV 2.1 – PM2.5, CV 2.2 – PM10, CV2.3 – NOX)
Indicator Unit	µg/ m3 and # of days
Definition	Air quality is the measurement of air pollutants.
Calculation	NA
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	No
If yes, which emission source sectors does it measure?	
Does the indicator measure indirect impacts (i.e., co- benefits)?	Yes
If yes, which co-benefit does it measure?	Improved health and well-being, reduced traffic.
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	Impact Pathways according to Module B-1 Resilient City, Resource- Full City and Social City actions primarily,
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	NA – Dublin City is a signatory of the WHO Breathe Life Campaign
Data requirements	
Expected data source	Dublin City Air and Noise and EPA
Is the data source local or regional/national?	Combination of local and national
Expected availability	Daily
Suggested collection interval	Daily
References	
Deliverables describing the indicator	
Other indicator systems using this indicator	

B-3.2: Indicator Metadata - CV3	
(For each indicator selected)	
Indicator Name	CV 3 – Water Quality

Indicator Unit	Surveys- Testing presence of Ecoli, nitrates
Definition	Insuring the health of waterbodies.
Calculation	NA
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	Yes
If yes, which emission source sectors does it measure?	Resilient City and Resource Full City – AFOLU – Blue Carbon
Does the indicator measure indirect impacts (i.e., co- benefits)?	Yes
If yes, which co-benefit does it measure?	Ecosystem Health
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	Impact Pathways according to Module B-1 Resilient City, Resource- Full City and Social City actions primarily, but it is anticipated that there will be some evidence of transport emissions reducing in relation to Creative city actions, specifically those related to decarbonisation zones, and innovation districts.
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	
Data requirements	
Expected data source	LAWPRO,
Is the data source local or regional/national?	Local
Expected availability	Monthly
Suggested collection interval	Monthly
References	
Deliverables describing the indicator	Reduction in pollution in water courses
Other indicator systems using this indicator	

B-3.2: Indicator Metadata – CV4	
(For each indicator selected)	
Indicator Name	CV 4 – Soil Health
Indicator Unit	
Definition	As an urban area soil sealing is a significant problem, determining soil health and monitoring is essential
Calculation	NA
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	Yes
If yes, which emission source sectors does it measure?	Resilient City and Resource-Full City AFOLU
Does the indicator measure indirect impacts (i.e., co- benefits)?	Yes
If yes, which co-benefit does it measure?	Ecosystem health
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	Impact Pathways according to Module B-1 Resilient City, Resource- Full City and Social City actions primarily, but it is anticipated that there will be some evidence of transport emissions reducing in relation to Creative city actions, specifically those related to decarbonisation zones, and innovation

	districts.
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	
Data requirements	
Expected data source	Geological Survey Ireland, Terrain AI, Academia; NPWS, Teagasc
Is the data source local or regional/national?	Local National
Expected availability	Yearly
Suggested collection interval	Yearly
References	
Deliverables describing the indicator	Reduction in soil sealing across the city
Other indicator systems using this indicator	

B-3.2: Indicator Metadata – CV5	
(For each indicator selected)	
Indicator Name	CV 5 – Biodiversity Counts
Indicator Unit	Counts of fauna and flora
Definition	Fauna population increases are indicators of improved flora health which is essential for carbon sequestration
Calculation	NA
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	Yes
If yes, which emission source sectors does it measure?	Resource Full City/ AFOLU
Does the indicator measure indirect impacts (i.e., co- benefits)?	Yes
If yes, which co-benefit does it measure?	Improved ecosystem health
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	Impact Pathways according to Module B-1 Resilient City, Resource- Full City and Social City actions primarily, but it is anticipated that there will be some evidence of transport emissions reducing in relation to Creative city actions, specifically those related to decarbonisation zones, and innovation districts.
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	No
Data requirements	
Expected data source	NPWS, OPW, Dublin Bay Biosphere Partnership; Academia
Is the data source local or regional/national?	Local and National
Expected availability	Yearly
Suggested collection interval	Yearly
References	
Deliverables describing the indicator	Improved biodiversity health
Other indicator systems using this indicator	

B-3.2: Indicator Metadata – CV6

(For each indicator selected)	
Indicator Name	CV 6 – Noise
Indicator Unit	Day time Lden .>/ 50dB and Nighttime >/ 25dB
Definition	Noise is the silent killer as noise pollution from traffic and construction can result in disrupted sleep and other health issues
Calculation	NA
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	No
If yes, which emission source sectors does it measure?	
Does the indicator measure indirect impacts (i.e., co- benefits)?	Yes
If yes, which co-benefit does it measure?	Improved health and well-being; improved social cohesion through the presence of positive noises such as children playing
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	Impact Pathways according to Module B-1 Resilient City, Resource- Full City and Social City actions primarily,
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	No
Data requirements	
Expected data source	Dublin City Air and Noise, EPA
Is the data source local or regional/national?	Local and National
Expected availability	Daily
Suggested collection interval	Daily
References	
Deliverables describing the indicator	Increased areas of the city that are designated as quiet zones – low traffic and increased green cover
Other indicator systems using this indicator	

B-3.2: Indicator Metadata – CV7	
(For each indicator selected)	
Indicator Name	CV 7 – Population Health and Well-being
Indicator Unit	Survey and disease rates; obesity rates
Definition	Perception of well being, alongside metrics of health outcomes
Calculation	NA
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	no
If yes, which emission source sectors does it measure?	
Does the indicator measure indirect impacts (i.e., co- benefits)?	Yes
If yes, which co-benefit does it measure?	Improved health and well-being
Is the indicator useful for monitoring the output/impact of action(s)?	Yes

If yes, which action and impact pathway is it relevant for?	Impact Pathways according to Module B-1 Resilient City, Resource- Full City and Social City actions primarily, but it is anticipated that there will be some evidence of transport emissions reducing in relation to Creative city actions, specifically those related to decarbonisation zones, and innovation districts.
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	
Data requirements	
Expected data source	HSE, CSO and Citizens
Is the data source local or regional/national?	National
Expected availability	Quarterly
Suggested collection interval	Monthly
References	
Deliverables describing the indicator	Reduction in hospital visits, wait times and hospital bed usage.
Other indicator systems using this indicator	

B-3.2: Indicator Metadata - CV8	
(For each indicator selected)	
Indicator Name	CV 8 Social Cohesion
Indicator Unit	Rates of volunteerism and survey of perceptions; reductions in crime; knowing your neighbour
Definition	Social cohesion
Calculation	NA
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	No
If yes, which emission source sectors does it measure?	
Does the indicator measure indirect impacts (i.e., co- benefits)?	Yes
If yes, which co-benefit does it measure?	Improvements in public spaces, streets, parks; delivery of services
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	Impact Pathways according to Module B-1 A Creative City and Social City actions primarily,
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	
Data requirements	
Expected data source	Surveys; your Dublin your Voice; CSO
Is the data source local or regional/national?	Local
Expected availability	Quarterly
Suggested collection interval	Quarterly
References	
Deliverables describing the indicator	Reduction in crime
Other indicator systems using this indicator	

B-3.2: Indicator Metadata – CV9	
(For each indicator selected)	
Indicator Name	CV 9 Economic Performance (CV 9.1 Affordability CV 9.2 SME performance
Indicator Unit	Purchasing power parity/ Affordability % of income spent on rent/ groceries/ transport; # of SMEs and % of SMEs that are social innovation
Definition	The ability of households and individuals to afford basic goods while saving. The Performance of SMEs is an indicator of a healthy innovation economy.
Calculation	NA
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	No
If yes, which emission source sectors does it measure?	
Does the indicator measure indirect impacts (i.e., co- benefits)?	Yes
If yes, which co-benefit does it measure?	NA
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	Impact Pathways according to Module B-1 All actions
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	No
Data requirements	
Expected data source	Dublin Economic Monitor, Daft, CSO, ESRI
Is the data source local or regional/national?	Local and National
Expected availability	Monthly
Suggested collection interval	Monthly
References	
Deliverables describing the indicator	Full employment
Other indicator systems using this indicator	

B-3.2: Indicator Metadata – CV10	
(For each indicator selected)	
Indicator Name	CV 10 – Traffic Volume (C10.1 Near Misses C10.2 Accidents)
Indicator Unit	Number of vehicles during rush hour; # of near misses/ per day; # of Accidents per week, # of deaths/ per month
Definition	This indicator is primarily focused on traffic volumes, recognising that traffic volumes are correlated with near misses, accidents and deaths, these are included as sub indicators. The objective of this indicator is a downward trajectory
Calculation	NA
Indicator Context	

Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	No
If yes, which emission source sectors does it measure?	
Does the indicator measure indirect impacts (i.e., co- benefits)?	Yes
If yes, which co-benefit does it measure?	Improved road safety;
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	Impact Pathways according to Module B-1 Resilient City, Resource- Full City and Social City actions primarily, but it is anticipated that there will be some evidence of transport emissions reducing in relation to Creative city actions, specifically those related to decarbonisation zones, and innovation districts.
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	
Data requirements	
Expected data source	Met Eireann
Is the data source local or regional/national?	National
Expected availability	Monthly
Suggested collection interval	Monthly
References	
Deliverables describing the indicator	Improved active travel infrastructure, increased use of active travel infrastructure.
Other indicator systems using this indicator	

B-3.2: Indicator Metadata – CV11	
(For each indicator selected)	
Indicator Name	CV 11 Ground Level Ozone
Indicator Unit	µg/ m3 and # of days
Definition	Ground level ozone on hot days poses a health risk. It is created when VOCs and NOx react
Calculation	NA
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	Yes
If yes, which emission source sectors does it measure?	Transport
Does the indicator measure indirect impacts (i.e., co- benefits)?	Yes
If yes, which co-benefit does it measure?	Potential impacts on health; cascading and compound impacts of pollutants and UHI on human health
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	Impact Pathways according to Module B-1 Resilient City, Resource- Full City and Social City actions primarily, but it is anticipated that there will be some evidence of transport emissions reducing in relation to Creative city actions, specifically those

	related to decarbonisation zones, and innovation districts.
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	
Data requirements	
Expected data source	Dublin City Air and Noise, Met Eireann,
Is the data source local or regional/national?	National
Expected availability	Monthly
Suggested collection interval	Monthly
References	
Deliverables describing the indicator	
Other indicator systems using this indicator	

B-3.2: Indicator Metadata – CV12	
(For each indicator selected)	
Indicator Name	CV 12 Aero Allergens
Indicator Unit	µg/ m3
Definition	Presence of pollen and other allergens in high concentrations that can exasperate respiratory conditions.
Calculation	NA
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	No
If yes, which emission source sectors does it measure?	
Does the indicator measure indirect impacts (i.e., co- benefits)?	No
If yes, which co-benefit does it measure?	NA
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	Impact Pathways according to Module B-1 Resilient City, Resource- Full City and Social City actions primarily, but it is anticipated that there will be some evidence of transport emissions reducing in relation to Creative city actions, specifically those related to decarbonisation zones, and innovation districts.
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	
Data requirements	
Expected data source	Met Eireann
Is the data source local or regional/national?	National
Expected availability	Monthly
Suggested collection interval	Monthly
References	
Deliverables describing the indicator	
Other indicator systems using this indicator	

B-3.2: Indicator Metadata – CV13	
(For each indicator selected)	
Indicator Name	CV 13 Monitor of Disease Vectors
Indicator Unit	Presence of disease vectors
Definition	Climate change is known to be changing the geographical reach of vector-borne diseases.
Calculation	NA
Indicator Context	
Does the indicator measure direct impacts (reduction in greenhouse gas emissions?)	No
If yes, which emission source sectors does it measure?	
Does the indicator measure indirect impacts (i.e., co- benefits)?	Yes
If yes, which co-benefit does it measure?	Presence of vectors can indicate a change in ecosystem health and signal maladaptation.
Is the indicator useful for monitoring the output/impact of action(s)?	Yes
If yes, which action and impact pathway is it relevant for?	Impact Pathways according to Module B-1 Resilient City, Resource- Full City and Social City actions primarily, but it is anticipated that there will be some evidence of transport emissions reducing in relation to Creative city actions, specifically those related to decarbonisation zones, and innovation districts.
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	
Data requirements	
Expected data source	HSE
Is the data source local or regional/national?	National
Expected availability	Monthly
Suggested collection interval	Monthly
References	
Deliverables describing the indicator	
Other indicator systems using this indicator	

In addition to the above DCC has included in Climate Neutral Dublin indicators for each foundation that can be found in Appendix 1.

Further we are implementing a climate readiness toolkit to support capacity building and deeper understanding of the impacts of our projects.

Appendix 8

Climate Readiness Toolkit

DCC's Climate Readiness Toolkit was developed with assistance from the HSE's Dublin Public Health team. It is based on health impact assessment, this is intentional as climate change is the single biggest risk to public health.

The toolkit will assist us in considering to the potential social and environmental impacts that our project aimed at mitigating climate risk and adapting to climate impacts may or may not have on health and well-being.

It is also a tool for monitoring our progress, by bringing together the various climate vitals, indicators and targets into a format that permits an understanding of their interactions with and interconnectedness to each other.

The Basics:

1 Title of the policy, project or programme	
2 Description of policy, project or programme	
3 Geographical area	
4 Time period	

The Details:

5 Population Affected (SDGs 1, 5, 10)

Which of the following sections of the population will be affected?

	Positive Effect	Negative Effect	No Effect	Number of People
Whole Population				
Sub Population				
Children (0-11)				
Adolescents (12-17)				
Gender:				
Female				
Male				
LGBTQI+				
Persons with a disability				
Economically disadvantaged				
Seniors (65+)				
Others				

Consideration(s):

- Just Transition - Are we actively engaging people? Have their ideas, concerns, questions etc. been considered?
- Are there direct and indirect impacts on the populations?
- Are the SDGs embedded?

Describe Impacts:

6 Health Determinants

Physical Environmental Impacts (SDGs 3, 4, 6, 7, 11, 13, 14, 15)

How will the project/policy impact physical environment?

	Positive Effect	Negative Effect	No Effect	Number of People
Air Quality				
Water Quality				
Noise Pollution				
Temperature				
Land-use				
Access to Nature				
Built Environment				
Waste Generated				
Energy Use				
Biodiversity (Flora & Fauna)				

Socio-Economic Impacts (SDGs 1, 2, 3, 4, 5, 8, 10)

How will the project/policy impact socio-economic factors?

	Positive Effect	Negative Effect	No Effect	Number of People
Crime (act and fear of)				
Education				
Employment				
Family Cohesion				
Housing				
Income				
Transport (access to PT, safety - walking & Cycling, etc				
Social Cohesion				
Recreation and Culture				
Other				

Consideration(s):

- Health & Well-being - are we improving quality of life in the city?
- Equity - are the distributional impacts considered?
- Are the SDGs embedded?

Describe Impacts:

Individual Life style Impacts (SDGs 1, 2, 3)
How will the project/policy impact lifestyle factors?

	Positive Effect	Negative Effect	No Effect	Number of People
Diet (including access to food)				
Physical activity				
Substance use				
Other				

Consideration(s):

- Vulnerability - are we reducing risks?
- Are the SDGs embedded?

Describe Impacts:

Psychological Impacts (SDGs 3, 4, 5, 8, 10, 11)
How will the project/policy impact lifestyle factors?

	Positive Effect	Negative Effect	No Effect	Number of People
Self-esteem				
Relationship building				
Communication skills				
Motivation				
Well-being				
Others				

Consideration(s):

- Are the SDGs embedded?

Describe Impacts:

7 Climate Impacts (SDGs 7, 9, 11, 12, 13, 14, 15)

Greenhouse gas emissions of project in CO2e:

Embodied CO2e is all the CO2e emitted in producing materials. It's estimated from the energy used to extract and transport raw materials as well as emissions from manufacturing processes. The embodied carbon of a building can include all the emissions from the construction materials, the building process, all the fixtures and fittings inside as well as from deconstructing and disposing of it at the end of it's lifetime.

Operational CO2e is all the CO2e emitted during the operational phase, i.e. energy use.

Sequestered CO2e is all the CO2e that is sequestered through natural processes.

Avoided CO2e is the CO2e that would have been produced (embodied and operational) had the status quo persisted for example kms travelled by car had pedestrianisation or cycling infrastructure not been put in place. For example, 100 km travelled by bike instead of car avoids 0.034 tCO2e.

Resources to help calculate/understand emissions:

- Consumption Based Greenhouse Gas Emissions in Cities
- Carbon Calculator | Carbon Footprint | Climate Tookit 4 Business (climatetoolkit4business.gov.ie)
- Taking deforestation and conversion out of supply chains | Pages | WWF (worldwildlife.org)

Project Price of Carbon

$$\text{Project Price of Carbon} = \frac{\text{Total Project CO2e}}{\text{Total Project Cost (Capex + Opex)}}$$

Project address:

- ☐ Rising Temperatures
- ☐ Extreme Weather Events
- ☐ Flooding
- ☐ Sea Level Rise
- ☐ Coastal Erosion
- ☐ Urban Heat Island

Describe:

Climate Resilience:

Will this project reduce vulnerability of individuals, communities, and ecosystems to climate change and increase resilience?

Describe:

8 Counterfactual

What happens without this project?

- Status Quo – what is it?
- If this project doesn't happen are we better off or worse off?

Describe:

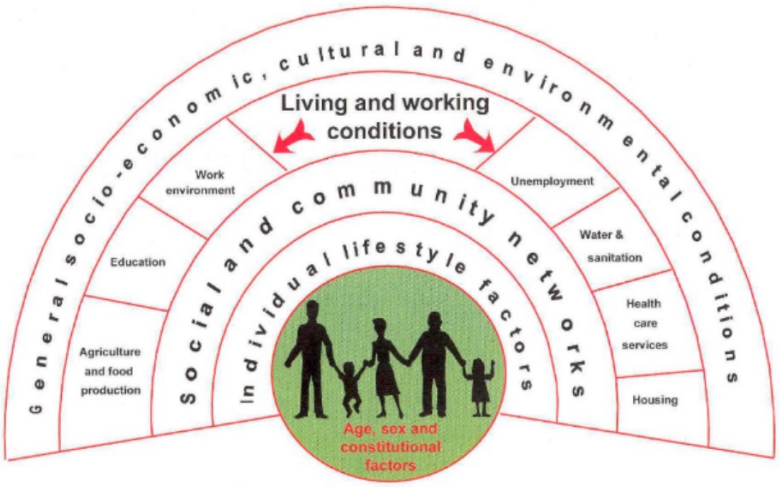
9 Co-creation (SDGs 16, 17)

Who are you working with on this project?

- Other DCC Departments?
- Other agencies?

Describe:

10 Model of Determinants of Health

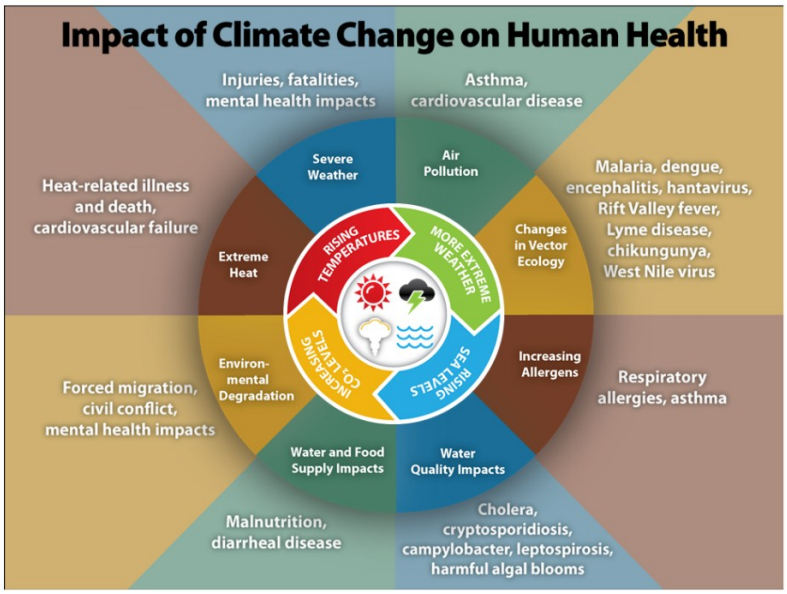


Source: Dahlgren, G. and Whitehead, M., Policies and strategies to promote social equity in health. 1991. Stockholm, Institute for Future Studies.

11 Sustainable Development Goals

Source: United Nations Sustainable Development Goals: https://sdgs.un.org/goals

12 Impacts of Climate Change on Human Health



Source: Centers for Disease Control and Prevention (CDC), 2016: https://www.cdc.gov/climateandhealth/effects/default.htm)

4 Part C – Enabling Climate Neutrality by 2030

Part C "Enabling Climate Neutrality by 2030" aims to outline any enabling interventions, i.e., regarding organizational setting or collaborative governance models or related to social innovations – designed to support the climate action portfolios (Module B-2) as well as aiming to achieve co-benefits outlined in the impact pathway (Module B-1). These interventions also address the identified opportunities, gaps and barriers identified Module A-2 and A-3.

4.1 Module C-1 Governance Innovation Interventions

This module details the city´s governance innovations for achieving city climate neutrality by 2030, describing innovations in institutional design, in leadership, and in collaborative and outreach processes, whether they are inter-organisational or internal to the key organisations responsible for the city´s climate neutrality target. It also describes expected outcomes, for example how these governance innovations enable climate actions and their co-benefits (outlined in Modules B-1 and B-2), and how they address the opportunities, gaps and barriers identified in Modules A-2 and A-3. This content aims to include:

- Descriptions or/and visualisations of a participatory / collaborative governance model to facilitate the city´s climate neutrality target, including institutional design (horizontal links among city institutions, vertical links to other levels of government, roles, responsibilities, ground rules, processes). Building on the systems and stakeholder mapping in module A-3, it highlights the relations and processes established or planned to facilitate joint climate action among stakeholders and systems at relevant levels (e.g., showcasing new organisations, partnerships, alliances, networks, or processes), as well as mechanisms of citizen involvement.
- Descriptions of how the governance innovations introduced or planned to reach climate neutrality address some (or all) systemic barriers and opportunities (Module A-3) and contribute to NZC impact pathways (Module B-1), e.g., through improving organisational settings and interorganisational models – horizontally within municipal administration and across local stakeholders in the city ecosystem, as well as vertically at regional and national levels.

C-1.1: Description or visualisation of the participatory governance model for climate neutrality
We recognise that Dublin's success is Ireland's success, and success requires that everyone is working together. How we work together to collaborate and co-create needs to evolve for us to succeed. Figure 33 Illustrates the governance and policy structure that under pinned our first local authority climate change action plan.

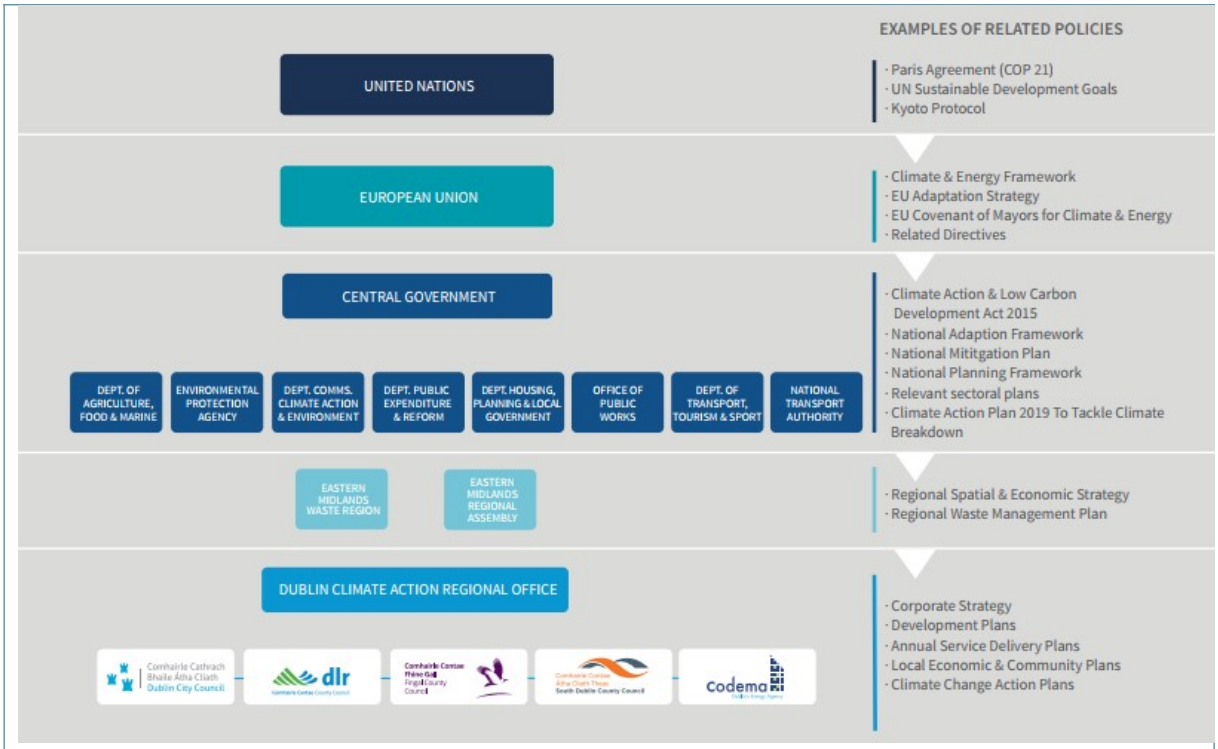


Figure 29 Governance and Policy Context for first Climate Change Action Plan 2019-2024

In recent years, it has become clear that "change-as-usual" is not enough to address whole society problems such as climate change. Implementing change that improves efficiency but continues to allow us to work in siloes, will not enable us to meet our targets and realise the co-benefits of climate action that will improve people's health and well-being. In this context we developed our climate readiness toolkit to shift our ways of working to a more coordinated and collaborative approach to action, that is a whole systems approach. Figure 33 demonstrate how a triage approach might work for the city, with Dublin City Council teams being represented by blue ovals and the external stakeholders in red ovals. It is evident from this that an adaptive governance approach is needed to respond to the climate crisis, that hierarchical governance is not sufficient.

We know that whole society behaviour change towards more sustainable lifestyles is needed. To spark (and to nurture) change, systems need to be designed so that the sustainable choice is the most convenient. So that we make Dublin into a resilient, resourceful, social and creative city for all. We have identified implementation actions that need to be undertaken for our city's transition to a low carbon and climate resilient future are as follows:

IM1. **Oversight by Steering Group:** Proactive collaboration across internal departments, and with external agencies and organisations to implement and monitor the impacts of this climate action plan requires strong leadership from senior management. A Steering Group chaired by the Chief Executive to oversee the overall direction of progress and ensure that Dublin City Council, as an organisation is a leading light in decarbonisation, embedding climate resilience, facilitating co-benefits for climate and other environmental factors, and principles of equity in our operations and service delivery has been established. The Steering Group will ensure that internal structures are in place to foster ownership, accountability, and delivery of actions and projects are resourced; and provide quarterly reports to elected members via Strategic Policy Committees, and annually to the full Council.

IM2. **Challenge Led Approach:** Recognising the limitations of "change-as-usual", our Plan is taking a challenge led approach to foster better coordination and increased engagement; and to unleash the collective intelligence of a variety of actors impacted

by, and responsible for the change to be realised by our plan.

IM3. **Monitoring**: Without monitoring we will not know how we are progressing, what is working or not, and who we need to engage to implement changes necessary for climate neutrality. The actions in our plan are linked to headline indicators and sub indicators as well as our targets. Together the data from these indicators and targets provide a picture and a story of the impacts of our actions on quality of life in the city. Monitoring is also an opportunity for collaboration. (the need for data is evident in the triage approached illustrated by Figure 33, and is vital to informing the actions taken and in monitoring success)

IM4. **Ireland& Dublin& You:** Your active participation in the implementation of this climate action plan, which is about safeguarding our collective future is essential. We will keep you informed, engaged and active in this plan through our Climate Newsletter, events and reports to council.

Figure 30. Internal Governance – Steering Group

Steering Group

ACE Steering Group members

- Chair: Richard Shakespeare, Chief Executive

- John Flanagan, Assistant Chief Executive and City Engineer, E&T
- Tony Flynn, Assistant Chief Executive, CRES
- Eileen Quinlivan, Assistant Chief Executive, HRCST
- Mick Mulhern, Assistant Chief Executive, HCS
- Victor Leonov, Assistant Chief Executive and Head of Finance
- Derek Kelly, Executive Manager, E&T
- Michael Ryan, Head of Communications

Mandate

Responsible for ensuring the successful delivery of CND2030 by:

- Developing partnerships with key external stakeholders. (as per Figure 32)
- Fostering cross department collaboration to realise co-benefits, efficiency and cost effectiveness of projects and programmes.
- Providing support and direction to the executive managers group.
- Reviewing and deciding on options provided by executive managers group.
- Ensure resources (staff and finance) are adequate and available.

Procedures:

	Ordinary meeting	Extraordinary meeting	Agenda & Reports
ACE Steering Group	Every Quarter Second Wednesday of January, April, July and October	At any time upon request of the Chief Executive	Agenda and Reports received 7 days in advance of meetings outline progress and challenges to be addressed
Executive Managers Group	Every Quarter Third Wednesday of December, March, June and September	At any time upon request of any member of the group	Agenda and updates for report to be submitted to ACE Steering Group

Executive Managers Group Members

- E&T
  - Climate
  - District Heating
  - Water
  - Traffic
  - Environment
- Planning
  - Planning
  - Property
- HRCST
  - Transformation
- Finance
  - Finance
- H&CS

- Operations
- Delivery

- CRES
  - Economic

Mandate

Responsible for ensuring the successful delivery of CND2030 by:

- Developing partnerships with key external stakeholders (as per Figure 32, based on sectors)
- Fostering inter department collaboration to realise co benefits, efficiency and cost effectiveness of projects and programmes through day to day work and challenges (Figure 31).
- Receiving, reviewing and determining new "Dublin Let's…" Challenge as proposed by selves and teams.
- Providing support and direction to Challenge Delivery Team.
- Ensure proper resourcing and supports for challenge delivery teams
- Provide ACE Steering group with regular updates on progress of day to day work and challenges noting barriers and proposed options to address barriers; presenting lessons learned and celebrating successes.
- Ensure timely monitoring and reporting by teams on climate actions within their remit.

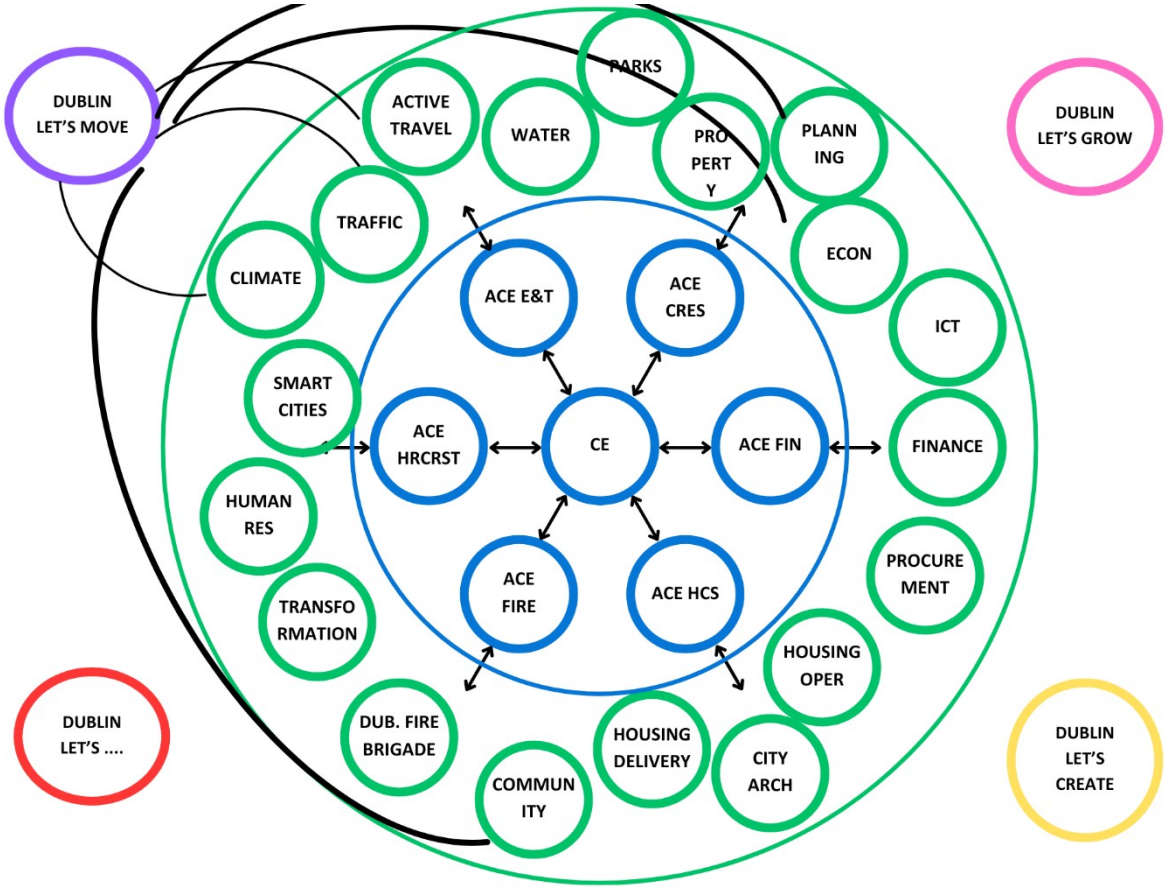


Figure 31 DCC Organisational Structure for Local Climate Teams & Challenges

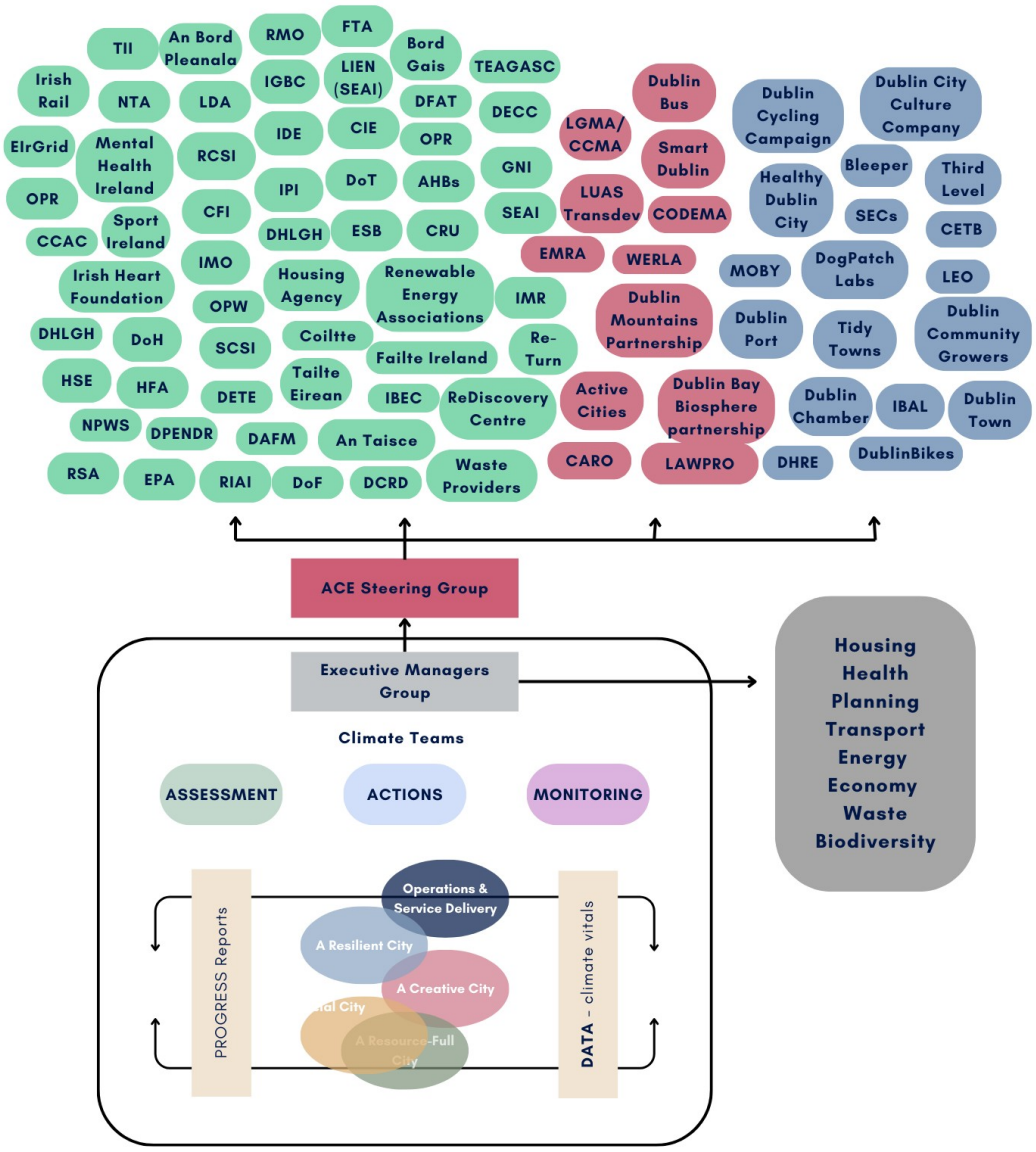


Figure 32 Steering Group and External Relationships

Citizen Engagement

We will continue to engage with the Dublin Public Participation Network which is part of a wider Irish network connecting groups and citizens with local authorities. There are three different strands within the PPN; environment, community and social inclusion. This structure offers the potential for direct engagement with community groups on a wide variety of topics.

Dublin City Council also works with Tidy Towns groups, offering support and funding for climate initiatives.

Direct contact and engagement are primarily done through our Area Offices, which offer a wide range of community supports and facilities.

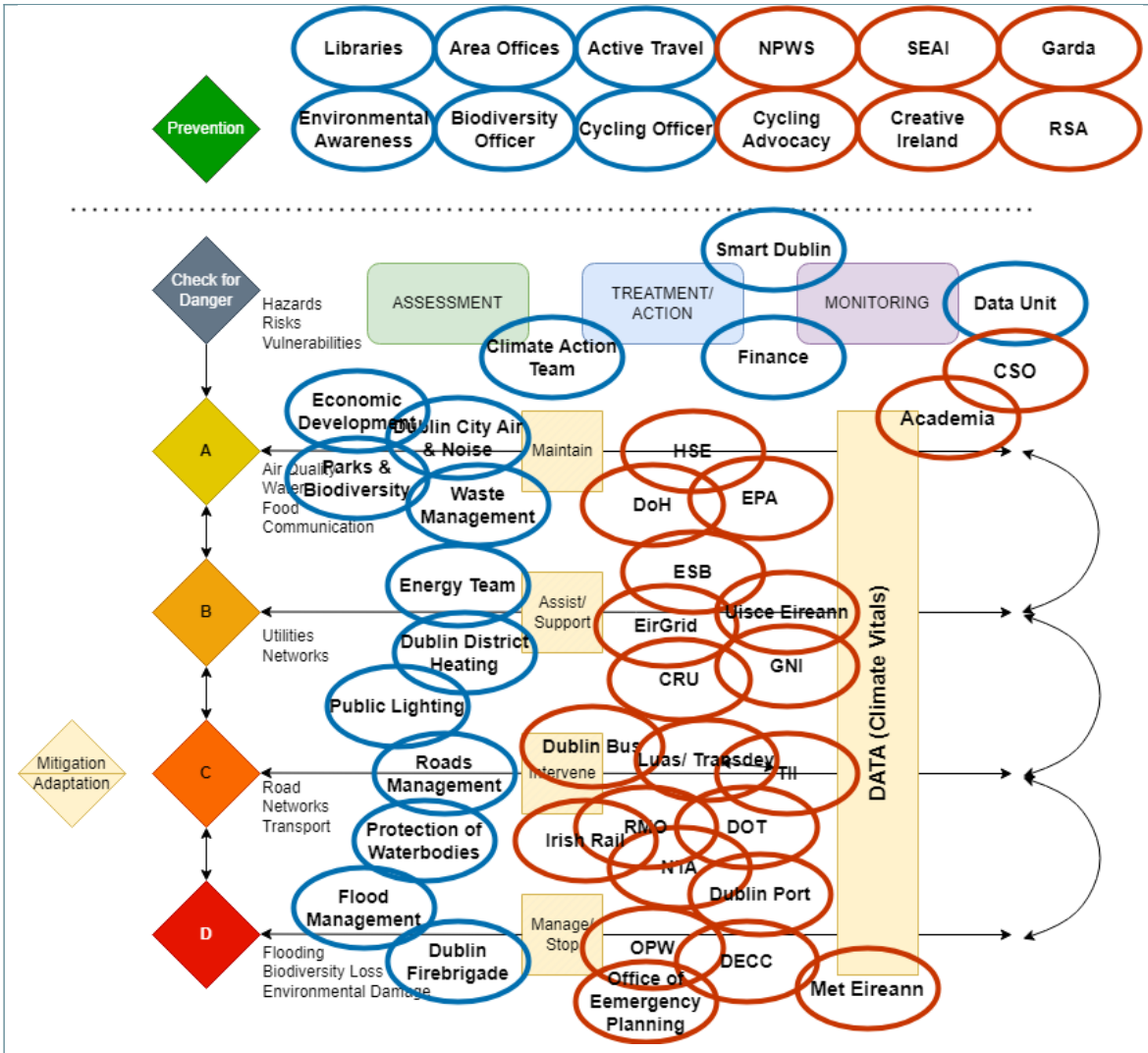


Figure 33 Applying a triage approach for action

C.1.2: Sample Table: Relationships between governance innovations, systems, and impact pathways					
Intervention name	Description	Systemic barriers / opportunities addressed	Leadership and stakeholders involved	Enabling impact	Co-benefits
	(Describe the substance of the intervention)	(Refer to barriers and opportunities identified in Module A-3)	(List leaders and all stakeholder involved and affected, referring to the stakeholders mapped in Module A3)	(Describe how intervention enables climate neutrality)	(Indicate how intervention helps achieve the impact listed in Module B-1)
Smart Dublin	Smart Dublin was founded by the four Dublin Local Authorities and seeks to bring together technology providers, academia and citizens to deliver transform public service and improve quality of life.	Smart Dublin are an important stakeholder for addressing the data –related barriers in particular. For example, the recently launched Active Travel Dashboard brings together data from multiple sources to provide an accurate picture of active travel patterns in the city and demonstrate the benefits of multi-organisational collaboration.	For the Active Travel Dashboard example, the stakeholders Smart Dublin engaged with for data include the CSO's Census Data, Google EIE, and EcoCounter Sensors. Smart Dublin deliver projects across multiple local authority services including environment, economy, and mobility and so bring together a range of stakeholders depending on the topic.	Across the Smart Dublin Districts there are multiple projects that contribute directly or indirectly towards Dublin's neutrality objectives, these include: Smart DCU's Digital Twins and scenario planning; Smart Dockland's Academy of the Near Future; Smart Sandyford's Pedal Pulse; and Smart D8's health and well-being initiatives.	Smart Dublin are an important part of the ecosystem of actors coming together to develop and deliver solutions contributing to climate neutrality and other challenges in the city. Not only do the projects deliver innovative solutions for the Dublin Local Authorities, the process of developing these solutions provides an opportunity for stakeholders to come out of their respective silos, collaborate and build familiarity.
Comhairle Na nOg	Comhairle Na nOg provides young people with an opportunity to discuss and debate matters of relevance to them and their	Comhairle Na nOg provides an opportunity to bring youth voices to the climate debate and to develop solutions with the young people	Primarily Dublin City Council and other youth focused groups such as ECO UNESCO and An Taisce Green Schools	Comhairle Na nOg ensures that our transition is just, as well as innovative	Through Comhairle Na nOg we are preparing the next generation of city leaders.

	community. Through Comhairle na nÓg young people are encouraged to speak out and have their voices heard around various topics. There is a Comhairle na nÓg located in the 31 local authorities of the country, we are Dublin City Comhairle na nÓg our members are aged 12-17years.				
Dublin City Council Culture Company	The Dublin City Council Culture Company runs cultural initiatives and buildings across the city, connecting people, communities, business and the City Council. The Culture Company delivers multiple creative, cultural, historic and tourism programmes and provides Dublin city council with an important link to communities, business and organisations in cultural sector.	Through the development and delivery programmes such as the awarding winning Smart Tourism Programme, the Dublin City Council Culture Company connect stakeholders and encourage and enable them to work together to improve environmental and sustainability practices in the sector. This can be through sharing of information, data and best practice, facilitating green procurement and encouraging behaviour change.	The Culture Company work with various DCC teams including the Climate Action Team, Community, Economic Development, as well as Smart Dublin, Fáilte Ireland, businesses and community groups.	Dublin's Smart Tourism programme enables climate neutrality through the development of innovative digital tourism experiences and use of tourism data and insights to reduce the emissions of the sector. In addition, the Culture Company provides links to communities and the cultural sector which are important for implementation of Climate Neutral Dublin 2030, particularly actions named under the Creative City and Social City foundations.	As with Smart Dublin, Dublin City Council Culture Company is another example of a DCC organisation acting as an important node on the ecosystem of stakeholders in Dublin.
Codema	Codema is the energy	Codema provide	Codema is a not for	Codema play a role is	Reduction in emissions

	agency of the four Dublin Local Authorities. They are tasked with supporting Dublin City with reducing energy use through various programmes	research and analysis to identify possible energy solutions for Dublin	profit limited by liability company owned by Dublin City Council, Dun Laoghaire Rathdown County Council, South Dublin County Council and Fingal County Council. They liaise with the Sustainable energy authority of Ireland on our behalf.	supporting the City Council in reducing energy use and decarbonising our buildings. They provide community engagement supports through their Home Energy Savings Kits.	in Built Environment and Energy Sectors.
Dublin Belfast Economic Corridor	The Dublin Belfast Economic Corridor (DBEC) is a key economic region for both Northern Ireland and Ireland, stretching 100 miles between the two largest cities on the island: Ireland's capital city, Dublin and Northern Ireland's capital city, Belfast. As a gateway for Northern Irish, UK, Irish, EU and international markets, the corridor is a key strategic location for cross-border trade.	DBEC provides an opportunity to partner and develop solutions that support the transition to low carbon economy.	The Dublin Belfast Economic Corridor partnership is a strategic collaboration between eight councils and two universities. The Area also includes 6 seaports and 2 airports	Currently Dublin City Council and Belfast City Council have partnered on a feasibility study and are now seeking to identify further funding to progress a business case for the Connected Circular Economy. This will support the growth SMEs and innovation in the social and circular economy across the construction and food sectors.	Reduction in emissions in Built Environment, AFOLU, waste. Co benefits will be social cohesion on the island, new economic opportunities.
Dublin.ie	Dublin.ie is the place brand for County Dublin. Dublin.ie was designed to celebrate	Dublin.ie communicates what is happening in the city, and show cases	An initiative of the four Dublins, Dublin.ie is focused on celebrating the best of Dublin and	Dublin.ie communicates to a broad audience what is happening in the City.	Attention on what's happening in Dublin that leads to investment and innovation.

	the very essence of Dublin; the people, places and things that make Dublin truly unique as a place to live, work, invest and study. It's all about building a vivid picture of a progressive, diverse and multicultural modern European city and region teeming with character, and characters. Made by the city, for the city.	reasons to live, work, invest and study in Dublin.	will be key to attracting investment into that supports the transition to climate neutrality.	In the last few years the focus has been on communicating initiatives are focused on sustainability and innovation.	
Active Cities	The Active Cities project is funded by Sport Ireland through the Dormant Accounts Fund (DAF). An Active City will strive to create social norms about the benefits of sport and physical activity, create programmes and opportunities for its citizens regardless of ability or age, work in partnership to increase physical activity & decrease inactivity, and create/maintain environments where sport & physical activity can happen, working	Active Cities allows us to use sport to reach communities that are often difficult to reach. Sport and play are not often viewed as climate action but our climate action plan has included play and sport as these are often the spaces where people can learn about taking action.	Active Cities, works closes with HSE/ Slainte Care, Sport Ireland, the Gaelic Athletics Association, Schools, and internally with our Active Travel, Climate Action and Area Offices.	Active Cities have played an essential role in encouraging mobility at all stages of life. Their Box-Up programme has encouraged use of parks. While Trishaws have supported active mobility of seniors and those will disabilities using tri-shaws.	Active Cities are a key part of communicating the co-benefits of climate action and enabling action.

	toward healthier lifestyles of their citizens.				
Healthy Dublin City	Healthy Dublin City aligns to Healthy Ireland, The National Framework for Improved Health and Wellbeing 2013-2025 which was developed with a long-term vision of improving the health and wellbeing of the Irish population at all stages of life	Healthy Dublin City aligns with our objectives for ensuring that actions we take do no harm and improve the environment in which people live	Healthy Dublin City, works closes with HSE/ Slainte Care and internally with our Active Travel, Climate Action, Economic Development, and Area Offices.	Healthy Dublin City through six campaigns focuses on improving lifestyles: Keep Well, Keeping Active, Eating Well, Managing your Mood, Switching off and Keeping Contact. The work of Healthy Dublin City, aligns with a transition to a climate neutral future that is just.	Healthy Dublin City, is a key part of communicating the co-benefits of climate action and enabling action.
Age Friendly City	Age Friendly Ireland manages Ireland's affiliation to the World Health Organisation's Global Network for Age Friendly Cities and Communities. Within this, Dublin City Council has a local Age Friendly Programme structures based on the 5 administrative areas across the city that manages the local age friendly programme to support older people in the community as part of a multi-stakeholder response to population ageing.	Age Friendly Dublin City, aligning with Active Cities and Healthy Dublin City, supports a just transition that is inclusive. Intergenerational justice is a key part of our transition, there is a growing recognition that older generations possess skills that are re-emerging and essential to, for example, the circular economy.	Age Friendly Dublin City, works closes with HSE/ Slainte Care and internally with our Active Travel, Climate Action, Economic Development, and Area Offices. Also with the Old People council,	Age Friendly Ireland have run capacity building climate action workshops across the city for older persons.	Improved health outcomes. Reduction in emissions (built environment) due to energy saving projects. Increased social cohesion.

Dublin Public Participation Network	Network of over 700 Community Groups comprising of Voluntary, Social Inclusion and Environmental Pillars.	Improved social cohesion. Amplification of participatory initiatives. Opportunity to diminish policy silos. Knowledge and resource sharing.	Dublin City Council Dept. Of Rural and Community Development 700 Member Organisations	Input from PPN Pillars to Dublin City Council SPCs via PPN Representative roles. Capacity building at local level. Access to grant funding for climate initiatives.	Improved health outcomes. Reduction in emissions (built environment) due to energy saving projects. Increased social cohesion. Increased volunteering rates.
Dublin Cycling Campaign	Dublin Cycling Campaign is an independent, voluntary group lobbying local and national government to bring about improved conditions for cyclists and greater recognition of the benefits of cycling	Dublin Cycling Campaign has been and continues to be instrumental in supporting measures to encourage cycling including Dublin Bikes, and reduced speed limits. They were key in bringing VeloCity to Dublin.	DCC, European Cycling Federation, Irish Doctors for the Environment, NTA, TII, An Taisce,	Dublin Cycling Campaign engage with Dublin City Council as a member of the Transport Strategic Policy Committee	Improved uptake of active travel modes, advocating for safer routes, drawing attention to the gender gap in cycling
Irish Environmental Network	The Irish Environmental Network is a network of individual environmental Non-Government Organisations (NGOs) that work individually and, as appropriate, jointly to protect and enhance the environment, and to place environmental issues centre stage in Ireland and internationally. The IEN	The IEN supports our members in their valuable work by distributing core funding and providing help through training and advice	Membership of IEN is diverse and include advocacy groups involved in active travel, heritage, biodiversity conservation, to waste and circular economy	IEN, represents to government the capacity building and funding needs of its member organisations, all of whom are involved in one way or another in the well-being, protection and enhancement of the environment	Improved environmental health, reduction in emissions in all sectors.

	works to promote the interlinked principles of environmental, social and economic sustainability. In representing the environment its Members represent a common good and not self-interest.				
Irish Doctors for the Environment	Irish Doctors for Environment is an NGO and registered charity consisting of doctors, medical students and allied healthcare professionals in Ireland who aim to create awareness, interest and implement action around environment health and the impact it has on our patients' health.	IDE works alongside various NGOs, environmentalists, the government, scientists and other organisations both nationally and internationally to ensure full co-operation and education regarding the global issues of climate change which affect local, national and international health. IDE strives to support initiatives from local community level to policy change and implementation at a national and international level.	Planetary Health Alliance, Irish Forum on Global Health, Health Care Without Harm, Clinicians for Planetary health, Stop Climate Chaos, Plant Based Doctors Ireland; Association of Medical Students Ireland	IDE is committed to educating doctors and the public on the climate crisis and its health effects. IDE aim to be a conduit through which those interested can learn more about the issues facing us and how healthcare and climate interact.	Improved environmental health, reduction in emissions in all sectors.
An Taisce	An Taisce is Ireland's National Trust, and the mission of An Taisce is to protect and celebrate Ireland's natural and	An Taisce's work falls into six strategic pillars under three broad categories. The shared nature of the pillars and	Dublin City Council, Schools, Universities, Irish Environmental Network, Clean Coasts	An Taisce is committed protecting Ireland's nature environment through education and engagement	Improved environmental health, reduction in emissions in all sectors.

	built environment for present and future generations, and to ensure Ireland leads the way in defending a liveable planet.	their goals reflects the increasingly integrated nature of how An Taisce operates. The work of the education and advocacy teams, for example, is in service of strategic goals that fall under multiple pillars. The six strategic pillars are grouped under three broad categories: Nature, Built Environment and People.		programmes that foster care of the natural and built environment.	
ECO UNESCO	ECO-UNESCO is Ireland's Environmental Education and Youth Organisation that works to conserve the environment and empower young people.	ECO-UNESCO aims to support the personal development of young people and raise environmental awareness through practical environmental projects, such as ECO Dens, Young Environmentalist Awards	Dublin City Council, UNESCO, Department of Foreign Affairs, EPA, Department of Environment Climate and Communications	ECO-UNESCO is committed promoting the voice of young people in the policy dialogue. Further the grounding their work in the SDGs ensures that the next generation of policy leaders have a deep understanding of the SDGs that is second nature.	Social Cohesion, Just transition, Equity, Improved environmental health.
Eat the Streets	Eat the Streets is Dublin City Council's annual food and climate change festival, that brings together chefs, urban growers, and communities to	Eat the Streets aims to create a meaningful conversation around food and climate change and empower people to start taking action at home in the	Dublin City Council, SPADE Enterprise, Failte Ireland, Third Level, Chefs, Food writers, Dublin Food Chain	Eat the Streets is about celebrating Ireland's food history and empowering people to take action and support Ireland's agricultural sector to transition to a	Social Cohesion, improved health and well-being, Reduced emissions from waste and AFOLU, increased greening.

	grow, cook, create and discover Ireland's rich food history.	kitchen.		climate resilient model	
Dublin Climate Action Week					
Dublin City of Literature	Dublin is the fourth UNESCO City of Literature, one of 53 UNESCO Cities of Literature worldwide.	As a Creative City of Literature, Dublin envisages: actively initiating and participating in intercity cooperative projects and programmes, both between Cities of Literature and cities within other creative fields; embracing the sharing of experiences with other cities; initiating programmes of support particularly for cities with a North-South dimension; furthering the integration of programmes aimed at children and youth as a key element in the city's literary and cultural activities; and Enhancing the position of creativity as the key to sustainable development. The UNESCO designation was notably the inspiration for the		Literature and literary culture are nurtured in the city, which hosts the International Impact Dublin Literary Award, the world's most well-endowed prize for a single novel. It is also home to the Dublin Theatre Festival, the oldest of its kind in the world. Writers are appreciated in this city, which has named three bridges and numerous streets after writers. This creativity is needed for climate action to become embedded in the cultural fabric of the city	Social Cohesion, Just transition, Equity, Innovation

		rejuvenation of an area of the city as a Cultural quarter with a new city library as the anchor. An international dimension will focus on UCCN members when the Cultural quarter is completed in 2018.			
St. Patrick's Day Festival					
SoCircular	SoCircular is about celebrating the social economy and circular economy. It is an initiative that seeks to enhance the social and circular economy models in a synergistic way by creating awareness of the ecosystem and by highlighting business models and innovations; and encouraging people, businesses, organisations and government departments to buy from and support local social and circular enterprises. It facilitates matchmaking opportunities for enterprises, promoting supports, skills	SoCircular is about celebrating the social and circular economic businesses in the city and how they are addressing climate change in innovative, tangible, positive and much needed ways. SoCircular purposefully highlights the many positive stories, impacts and examples within these models and among actors such as local social and circular enterprises. It showcases local pioneers who are operating their enterprises in sustainable, impact seeking ways and are providing innovative and tangible solutions to climate change,	Department of Enterprise and Trade, SMEs, Rediscovery Centre, Dublin Chambers, DBEC, Dublin.ie	SoCircular is about showcasing local social enterprises and circular enterprises and their products and services in an extensive trade expo Through: Featured panel discussions on key social / circular economy themes as part of a summit; Highlighting ecosystem supports, resources and support organisations; and Celebrating through social and circular themed arts and cultural performances	Social Cohesion, Just transition, Equity, Improved environmental health.

	development and funding to help enterprises adopt circular approaches and embrace the transition to a sustainable future.	social, and economic issues.			

4.2 Module C-2 Social Innovation Interventions

This module lists the actions taken by the city to support and foster social innovation initiatives or non-technological innovation more broadly (e.g., in entrepreneurship, social economy, social awareness & mobilization, social cohesion and solidarity, etc) aimed to address the systemic barriers and leverage the opportunities identified in Module A-3[4]. It also includes:

- A description of the innovations (what do they innovate?).
- Systemic barriers /opportunities addressed by these innovations (from Module A-3).
- Stakeholders involved in the innovation.
- Additional enabling levers (e.g., technical, policy/ regulatory, democracy/ participatory, fiscal/ financial; learning and capabilities, behaviour change).
- Foreseen impact on climate neutrality and co-benefits.

C.2.1 Sample Table: Relations between social innovations, systems, and impact pathways					
Intervention name	Description	Systemic barriers / opportunities addressed	Leadership and stakeholders involved	Enabling impact	Co-benefits
Challenge led Approach	Children's Movement through the City	Silos, creating opportunities for interdisciplinary	Executive Managers in Dublin City, Key academics; Parents; Comhairle	We recognise that by making the city child friendly we are normalise walking	Improved health and well being, better air quality,

[4] For more guidance on social innovation, please refer to the NetZeroCities Quick Read on Social Innovation,to the NetZeroCities Report on indicators & assessment methods for social innovation action plans and the Social Innovation Toolkit. Social innovation case studies are also available on the NetZeroCities website.

		working,	na nOg. Cycling campaign, ECO UNESCO	and cycling and avoiding lock-in to a car dominant culture.	
Innovation Districts	Innovation Districts: Our Smart City programme is developing innovation districts that bring together diverse SMEs to create solutions that improve the city. Smart Districts are strategically selected locations across Dublin where innovation projects are fast-tracked. Smart Districts are designed in partnership with citizens, industry, and academia. Each Smart District is unique, with projects designed to meet the specific needs of those who live and work there. Having due regard to environmental sensitivities such as local human receptors, European sites and biodiversity, and the need to appropriate protect and conserve protected structures.	Data availability, silos, interdisciplinary working	DCC staff, private sector, community groups and academia	Involving citizens in citizen sciences projects is a powerful communication tool that will enable our transition to neutrality be one that is just.	Social cohesion, improve environments,
Community Hubs	Community Hubs: Our Libraries are community hubs where people of all ages meet and share ideas. Expanding the services of our libraries can support climate action through **maker spaces**, workshops, and libraries of things. We know from the work of our Culture Company that there are artists and makers who are active across the city and ready to share their knowledge and draw communities together.	Funding, resources,	DCC Staff, Dublin City Council Culture Company, community groups – tidy towns,	Providing spaces for people to upcycle and create is essential to reducing waste. Through this we hope to see a reduction in waste	Improved social cohesion, new businesses emerging
Ecosystem of Social and Circular Enterprises	We continue to nurture a healthy ecosystem of social and circular small and medium enterprises by providing supports to entrepreneurs through initiatives like MODOS, Micro for Green, and SoCircular. Through our partnership with Belfast City	Funding, resources,	DCC, Dublin Town, Rediscover Centre, EPA, IBEC, business community	Empower business owners to change their practice, will be enable a reduction in emission from the commercial sector.	Improved social cohesion, new businesses emerging, community wealth building

	Council we are developing physical and regulatory infrastructure components essential to support SMEs to innovate and create a Connected Circular Economy on the Island of Ireland.				
Community Climate Action Programme	Community activated bespoke climate actions which address local needs yet meet global targets	Lack of understanding of the challenges faced and how to respond to them. Lack of experience in managing capital projects	Climate Action Team, Climate NGO's, Community Leaders	Tailored support which understands and meet community needs,	Reduce greenhouse gas emissions, build community cohesion, improve public health, strengthen knowledge and build capacity to deliver direct climate action, enhance trust between local government and the community we serve,
Biodiversity Artists in Residence	These ambitious artists' residencies aim to transform Dublin City Council's Executive and Elected Members' ability to incorporate Biodiversity as an embedded value in their aims. Artist-led projects will originate from working within the council, exploring ideas and ways of thinking that will lead to innovative outcomes, from intimate encounters to building robust structures that support community engagement, empower and instil information sharing and project visibility by harnessing the transformative capacity of art for change. Outcomes and artistic values will feed into the council's Climate Action Plan 2024 and onwards	Silos, creating opportunities for interdisciplinary working,	Artists and Dublin City Council Staff	Embedding of artistic thinking in work	Improved co creation and collaboration; increased biodiversity in the city
Climate Triage for implementation		Data availability, silos,	Dublin City Council , National government, semi	The discourse around climate change involves	Reduce greenhouse gas emissions, build community

		interdisciplinary working	states	describing the need to respond as an emergency. Responding to an emergency requires triage, the ability to assess risk, to identify who needs to work with who, when and how. Treating the city in a time of climate change requires a similar approach.	cohesion, improve public health, strengthen knowledge and build capacity to deliver direct climate action, enhance trust between local government and the community we serve,
Build CAPACITIES	Dublin City Council and Cork City Council's BUILD CAPA-CITIES (Behavioural Urban Insights and Lessons Deployed for Climate Action Policy Application –Communicated to Influence Transformative & Innovatively Embedded Sustainability) project has been funded under the NetZeroCities Pilot Cities Programme. As Ireland's two Mission cities, this project is focused on unlocking the key barriers to systems transformation needed to achieve neutrality. Three pilot activities will strive to: 1. Incentivise staff to upskill and learn, 2. Improve communication internally and externally, 3. Nurture a culture of knowledge exchange and interdisciplinary collaboration and co-creation, 4. Contribute to systems transformation that does not harm and improves quality of life.	Data availability, silos, interdisciplinary working	Climate Action Team, Community Leaders, Academia, National government, semi states	The Pilot City project will include citizen engagement through innovative city governance. It involves regional, national and EU involvement. Through three pilot activities Dublin City and Cork City Councils will share learnings with each other and the broader network of mission cities, through the twinning programme. Through the project Dublin City Council will deliver an innovation sandbox in the North East	Reduce greenhouse gas emissions, build community cohesion, improve public health, strengthen knowledge and build capacity to deliver direct climate action, enhance trust between local government and the community we serve,

				Inner City focused on improving the climate resilience of the area in a just manner. Through the Pilot Dublin City Council will deliver a communication strategy – The Living Room - aimed at fostering collaboration and co- creation	

C-2.2: Description of social innovation interventions

Three of the interventions are highlighted here as they are interconnected and serve to drive systems innovation across the organisation: OECD Challenge Led Approach, Biodiversity Artists in Residence, and Build CAPACITIES. Beginning with the work that is being undertaken by the OECD with DCC to introduce a challenge led approach into our implementation toolkit.

OECD - First Challenge – Children's Movement Through the City

In recent years, it has become clear that siloed work is unfit for purpose. Triggering systems change requires, instead, an interdisciplinary and collaborative approach. While DCC staff in charge of the Plan see climate action as an opportunity for more interdisciplinary and proactive ways of working, DCC staff identified several challenges to embracing such an approach. These include:

- Climate action is recognized as a responsibility of the City Council, however, greater clarity is needed on how to weave in to day-to-day tasks and responsibilities.
- Staff are pre-occupied with 'firefighting' and with the public acceptance of transformative policies, they feel time is poor, and feel overwhelmed by the magnitude of the changes that the net-zero transition entails.
- Day-to-day work practices and organization may hinder the staff's capacity to contribute to the Plan as needed, e.g. very specific key performance indicators leading to a narrow focus and trade-offs between teams' efforts.

The OECD will contribute to enable and build the capacity of DCC to embrace a challenge-led and systemic approach to the CAP implementation, as part of the organisations' efforts to support Governments across the OECD in their transition towards net-zero.

DCC is in the midst of transforming how people move through the city and is striving to ensure that it is sustainable and designed for all ages. With the ambition to pedestrianize the city centre and build 310 kms of cycle paths over the next 6 years, public support and multi-disciplinary collaboration are vital, but challenging to gain and maintain.

In this context Dublin City Council's first challenge focuses on children's movement through the city, specifically their ability to move safely whether by walking, cycling wheeling or scooting.

With less than half of school trips done by active travel, allowing children to walk and cycle throughout the city can significantly reduce emissions. The challenge can also bring together efforts from multiple actors and shed light on the impact of mobility on children's health (e.g. via better air quality, reduced obesity thanks to opportunities for physical activity), which can contribute to increasing public support for the on-going transformation.

Figure 34 Challenge Led Approach

Biodiversity Artists in Residence 2023-2025

These ambitious artists' residencies aim to transform Dublin City Council's staff ability to incorporate Biodiversity as an embedded value in their aims. Artist-led projects will originate from working within the council, exploring ideas and ways of thinking that will lead to innovative outcomes, from intimate encounters to building robust structures that support community engagement, empower and instil information sharing and project visibility by harnessing the transformative capacity of art for change. Outcomes and artistic values will feed into the council's Climate Action Plan 2024 and onwards.

This project will be carried out over 24 months, and will involve embedding artists in the organisation over three 'seasons', or distinct periods of six months, to support making biodiversity a key consideration in projects, and enabling DCC to reach their environmental and climate action goals.

The residencies will support the Artists in the development of their practices by allowing them to explore opportunities within the city council that align with their work. These opportunities will be points of connection internally and externally.

These wide opportunities will be explored along with others that may be suggested by the artists in residence. It is envisaged that by positioning artists within the culture of the Council that these areas of opportunity will be further expanded.

Policy and strategy

- Dublin City Council's new local authority climate action plan - Climate Neutral Dublin 2030

- Edible Dublin Food Strategy
- Greening Strategies
- Sustainable Urban Drainage Guidelines

Linking into existing DCC projects

- Partnership with other cities, such San Francisco and the EU Mission Cities
- Dublin Climate Action Week 2025
- Eat the Streets, DCC initiative around how food can be a solution to climate change
- Cultivate, an EU Project on food sharing, headed by Prof Anna Davies in Trinity.
- Hard infrastructure projects such as cycleways, roads embedding biodiversity development and protection from inception to delivery.

Departmental opportunities

- Active travel team projects (e.g. looking at why people walk or not and how that links with the biodiversity of their walking environment)
- Housing Retrofit programme, bringing nature into housing projects and its benefits to residents
- Implementing our Sustainable Urban Drainage Guidelines

Adapting Places to Climate Change

- River restoration projects (e.g. Dodder, Liffey, Santry and Camac)
- Quiet Zones, increasing the city's 8 designated quiet zones to contribute to improved air quality, health and well-being.
- Noise mapping the sounds of biodiversity in the city.
- Rainwater Planters, working with LAWPRO
- Vacant to Vibrant, looking at temporary contracts to allow people living near vacant sites to take them over for gardening, theatre etc., as an opportunity for citizen-led NBS, creating social cohesion in adapting the city.
- A new biodiversity hub and Artist's Workspaces on Bridgefoot Street providing a working collaboration space to showcase the community and Council's new creative approaches.

Projected Project Outcomes

Connecting to Dublin City's desire for systems innovation it is envisioned that this project will see :

- Changes in behaviour and policy within Dublin City Council, making biodiversity a key consideration in any project, helping the council reach their environmental goals.
- Community involvement in adapting their places to Climate Change
- Information sharing (seminars, publications), partnerships (academic and cultural institutes), acting as a model for how Biodiversity can be centred within councils and institutions through the art
- Delivery of projects over seasons that directly support Dublin City Council's Climate Action Plan - Climate Neutral Dublin
- A roadmap on how to embed artistic thinking and practice into new areas of Council culture and problem solving

Pilot City Activity 3 in Build CAPACITIES

Dublin City Council and Cork City Council's BUILD CAPA-CITIES (Behavioural Urban Insights and Lessons Deployed for Climate Action Policy Application –Communicated to Influence Transformative & Innovatively Embedded Sustainability) project has been funded under the NetZeroCities Pilot Cities Programme. As Ireland's two Mission cities, this project is focused on unlocking the key barriers to systems transformation needed to achieve neutrality. Three pilot activities will strive to: 1. Incentivise staff to upskill and learn, 2. Improve communication internally and externally, 3. Nurture a culture of knowledge exchange and interdisciplinary collaboration and co-creation, 4. Contribute to systems transformation that does not harm and improves quality of life.

The Pilot City project will include citizen engagement through innovative city governance. It involves regional, national and EU involvement. Through three pilot activities Dublin City and Cork City Councils will share learnings with each other and the broader network of mission cities, through the twinning programme. Through the project Dublin City Council will deliver an innovation sandbox in the North East Inner City focused on improving the climate resilience of the area in a just manner. Through the Pilot Dublin City Council will deliver a communication strategy – The Living Room - aimed at fostering collaboration and co- creation.

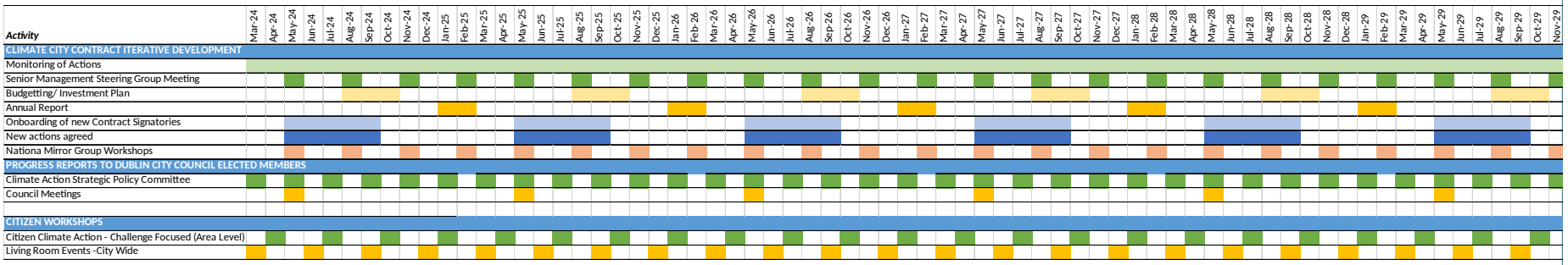
This strategy binds together the work with the OECD and Biodiversity Artists in Residence and further builds on a pilot of storytelling events used to develop Climate Neutral Dublin 2030 and this Climate City Contract. Dublin City Council staff were invited during the plan development phase to share stories of change, a shift in thinking and metamorphosis. Positively received these events have built relationships and provided valuable learning opportunities that Dublin City Council is keen continue to build internal capacity and external capacity.

5 Outlook and next steps

This section should draw any necessary conclusions on the CCC Action Plan above and highlight next steps and plans for refining the CCC Action Plan as part of the Climate City Contract in future iterations.

Plans for next CCC and CCC Action Plan iteration

Our elected members having adopted Climate Neutral Dublin 2030, we are on our way. We report every two months to the strategic policy committee for Climate Action and Environment SPC on progress, and annually to the full council. We anticipate that amendments will be made to CCC/Climate Neutral Dublin 2030 as we progress and invite new stakeholders to join us.



, provides an indicative schedule of iterative development of the climate city contract. Aligning city budgeting process in the fall, we endeavour to bring new signatories on board following the annual report and in advance of budgeting. Additionally included is our reporting process to elected members and engagement with citizens to 2030.

Community Climate Action Programme

During the life of the programme and as programmes complete, we will share best practice via our social media platforms and website. We will also work alongside participating communities to help identify additional funding opportunities so we can build on the successes achieved as we further transition to lower carbon communities.

Further, ensuring continuous support citizens we anticipate building on the challenge led approach and working across the city on area specific challenges and bringing these communities together quarterly to share experiences.

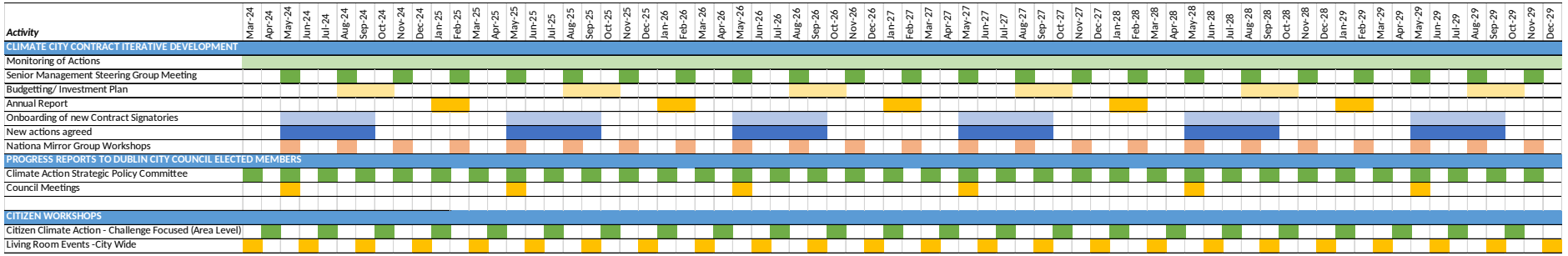


Figure 35 Refinement of CCC to 2030

6 Annexes

The annexes contain any textual or **visual material** to the 2030 Climate Neutrality Action Plan as necessary.