OPR Case Study Paper CSP05

# Climate Action and the Local Authority Development Plan

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*hereinafter referred to as the *'2000 Act'*.

# Tables



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# Acronym List

- **3CEA:** 3 Counties Energy Agency
- **AA:** Appropriate Assessment
- **BEI:** Baseline Emissions Inventory
- **BER:** Building Energy Rating
- **BU:** Bottom-up Approach
- **CAP:** Climate Action Plan
- **CARO:** Climate Action Regional Office
- **CDP:** City or County Development Plan
- **CHP:** Combined Heat and Power
- **CSO:** Central Statistics Office
- **CSP:** Case Study Paper
- **DAFM:** Department of Agriculture, Food and the Marine
- **DH:** District Heating
- **EMRA:** Eastern and Midland Regional Assembly
- **EPA:** Environmental Protection Agency
- **ERDF:** European Regional Development Funds
- **EU:** European Union
- **EV:** Electric Vehicle
- **GHG:** Greenhouse Gas
- **GI:** Green Infrastructure
- **HNDA:** Housing Need and Demand Assessment
- **IPCC:** Intergovernmental Panel on Climate Change
- **KPI:** Key Performance Indicator
- **LA:** Local Authority
- **LAP:** Local Area Plan
- **LARES:** Local Authority Renewable Energy Strategies
- **LECP:** Local Economic and Community Plan
- **LGMA:** Local Government Management Agency
- **M&R:** Monitoring and Reporting
- **MaREI:** SFI Research Centre for Energy, Climate and Marine Research and Innovation

- **MASP:** Metropolitan Area Strategic Plan
- **MW:** Megawatt
- **NAF:** National Adaption Framework
- **NBS:** Nature Based Solutions
- **NCCAF:** National Climate Change Adaption Framework
- **NDP:** National Development Plan
- **NIR:** National Inventory Report
- **NPF:** National Planning Framework
- **NTA:** National Transport Agency
- **NZEB:** Near Zero Energy Building
- **OPR:** Office of the Planning Regulator
- **PA:** Planning Authority
- **PV:** Photovoltaic
- **RE:** Renewable Energy
- **RES:** Renewable Energy Strategy
- **RMS:** Regional Modelling System
- **RPO:** Regional Policy Objectives
- **RSES:** Regional Spatial and Economic Strategy
- **SEA:** Strategic Environmental Assessment
- **SEAI:** Sustainable Energy Authority of Ireland
- **SEAP:** Sustainable Energy Action Plan
- **SECAP:** Sustainable Energy and Climate Action Plan
- **SFI:** Science Foundation Ireland
- **SFRA:** Strategic Flood Risk Assessment
- **SPPR:** Specific Planning Policy Requirement
- **SuDS:** Sustainable Urban Drainage Systems
- **UNFCC:** United Nations Framework Convention on Climate Change

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# 1.0 Introduction

Climate action has become a major influence on planning policy. Climate action includes both the mitigation and adaptation sides. While policies needed in adapting to the effects of climate change have received much focus in recent times (e.g. flood risk), what planning policies can do on the mitigation side has received much less focus.

This Case Study Paper (CSP) therefore offers insights into the challenges local authorities currently experience incorporating climate mitigation into development plans and highlights exemplary aspects of existing development plans that include climate mitigation measures. This is achieved firstly by reviewing emerging and existing examples of how local authorities have incorporated and integrated Renewable Energy Strategies (RES) and other climate mitigation measures into their development plans, secondly identifying *'pathfinder'* local authorities before thirdly engaging with a number of officials from *'pathfinder'* local authorities in order to gather reflections on their learnings.

The main objective of this case study paper is to provide practical comparative information that local authorities can learn from and use in incorporating evidence-based and realistic climate mitigation measures into their development plans.

The research was undertaken by the MaREI Centre and was funded by the Office of the Planning Regulator (OPR).

## 1.1 Structure of the case study paper

| SECTION | OUTLINE |
|---|---|
| 1 | Introduces the research and case study paper. |
| 2 | Outlines current policy and legislative context, and the evolving local authority role in climate action planning. |
| 3 | Introduces a framework to understand local authority climate action planning including the challenges associated with bridging national policy with local authority delivery and explains the role of the development plan. |
| 4 | Summarizes the findings from the high-level review of development plans. |
| 5 | Provides a more detailed look at six elements of climate action planning, drawing on case study examples from development plans. |
| 6 | Offers insights on the challenges faced by local authority officials, and practical steps they have taken, in incorporating climate action into development plans. |
| 7 | Concludes with what needs to change, and common elements of good practice identified. |
| 8 | Provides a guiding principles checklist. |

## 1.2 Context

The policy making and implementation role of local authorities in support of overall national and international climate action has been greatly expanded in recent times, enabled in part by legislative requirements that place greater emphasis on climate matters within the planning system.

For example, the Planning and Development (Amendment) Act 2010 requires that development plans include objectives to promote sustainable settlement and transportation strategies, including reducing energy demand, reducing anthropogenic greenhouse gas (GHG) emissions, and addressing the necessity of adapting to climate change [1].

Under Ireland's **Climate Action and Low Carbon Development (Amendment) Act** (2021) (hereafter referred to as the 2021 Climate Action Act) each local authority has been mandated to develop Climate Action Plans (CAPs) addressing both mitigation and adaptation measures [2].

Local Authority CAPs further enhance local authorities' ability to lead, engage, coordinate, and become agents of change in response to the ongoing climate change crisis; they also represent a new opportunity to embed climate mitigation in local authority spatial planning.

The mitigation dimension of climate action focuses on GHG emissions reduction, including energy use and efficiency, fossil and renewable energy supply, transportation, settlement patterns, consumption, and agriculture.

To date, local authorities have made considerable progress in accounting for their internal carbon footprint, energy efficiency improvements in public buildings, and developing climate adaptation plans. However, local authorities have made limited progress in climate mitigation beyond their internal carbon footprint.

The new statutory requirement in the 2021 Climate Action Act, allied to the pre-existing planning legislation climate provisions, presents an opportunity to strengthen local authority climate mitigation planning and develop better coordination between local authorities to ensure our emissions reduction goals.

Compliance with the requirements of this new legislation presents significant opportunities in the formulation and implementation of well-informed CAPs at the local level.

## 1.3 What is climate action?

The term Climate Action refers to the combined effort of both preventing climate change (mitigation) and managing the impact of it (adaptation). The United Nations body for assessing the science related to climate change known as the Intergovernmental Panel on Climate Change (IPCC) provides the following definitions [3].

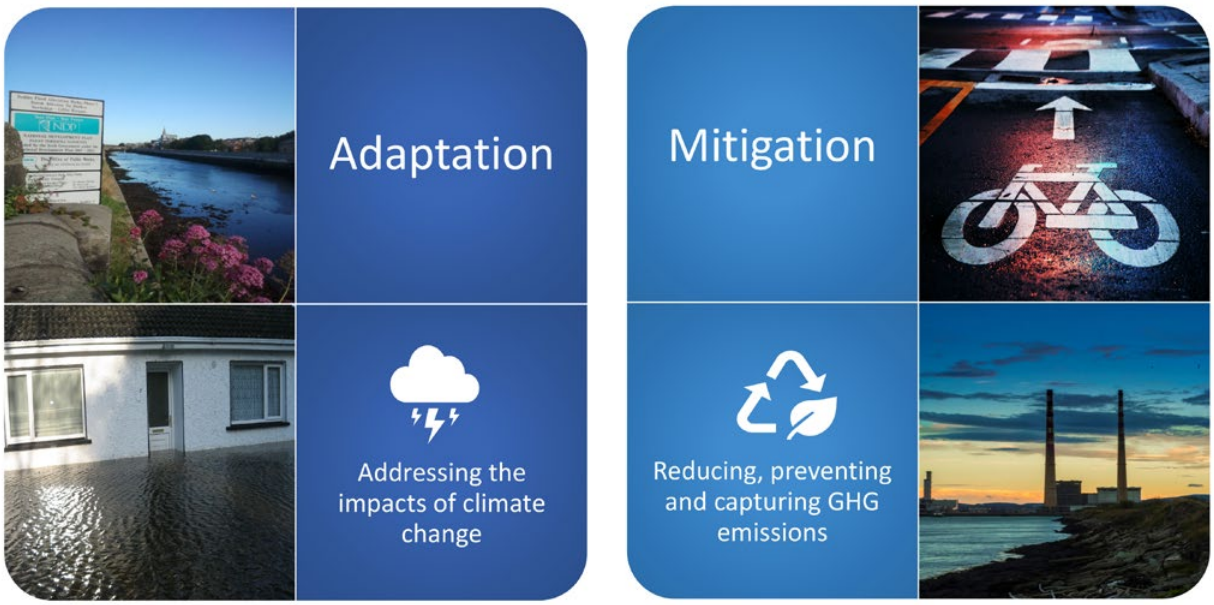
### *Climate mitigation involves*

A human intervention to reduce the sources or enhance the sinks of GHG.

### *Climate adaptation involves*

The process of adjustment to actual or expected climate and its effects.

**Figure 1-1** - Definition of climate adaptation and mitigation.



### 1.3.1 Strengthening climate mitigation within the planning system

Climate action is an umbrella term that brings together a suite of approaches to tackle climate change. Policy development, research and action distinguishes between climate adaptation and climate mitigation. This distinction is important to recognise as adaptation is comparatively ahead in terms of strategies and guidance in place to support local authority led climate action.

For example, **Local Authority Adaptation Strategy Development Guidelines** were published in 2019, which seek to climate proof local plans and policies, as well as offer information on how to achieve this.

However, to date no such guidelines exist from a mitigation standpoint. This case study paper focuses specifically on climate mitigation to address this gap.

To ensure local development plans integrate climate action policy, it is essential to strengthen practical guidance and information on mitigation, as in many ways such action represents an important primary form of climate action.

The extent of GHG emission reductions is crucial to our ability to cope with climate change, and while some impacts are now inevitable into the future, staying within certain limits is vital. Thus, this case study paper explores good practice and suggests some guiding principles to support the embedding of climate mitigation within local authority climate action planning.

## 1.4 Complementary resources on the topic of local authority climate action planning

This work complements the ongoing research and policy guidelines outlined in Table 1-1 below.

**Table 1-1** - List of complementary projects and resources dealing with different elements of local authority climate action planning.

| PROJECT LEAD | DESCRIPTION |
|---|---|
| Office of the Planning Regulator | Through the OPR's statutory development plan evaluation function. |
| Eastern and Midland Regional Assembly<br>**Quantitative Greenhouse Gas Impact Assessment Method for Spatial Planning Policy (QGasSP) Project** | The project considers methods for quantifying GHG emissions of different spatial plans with the goal of informing policy decisions. Under EMRA's leadership, the Scottish Government's Planning and Architecture Division, the Northern Ireland Regional Planning Directorate and the Regional Council of Kymenlaakso (Finland) are also participating in the project. |
| **Local Government Management Agency publications** | In a series of publications, the LGMA has examined climate change, national policy, and local action with case studies of local authority responses to energy efficiency, transport, flood risk management, emergency response to flooding, waste management, water conservation, nature-based solutions and public engagement, as well as a literature review of key performance indicators for climate action. |
| Department of Environment, Climate and Communications, Ministerial Guidelines on Local Authority Climate Action Plans | The EPA, CAROs and MaREI with the support of a project advisory group formed with experts from the sector are preparing draft guidelines for Local Authority Climate Action Plans covering both adaptation and mitigation planning expected Q1 2022. |
| **Climate Ireland** | The Climate Ireland platform was developed by MaREI through funding from the EPA to support capacity building for local authority climate adaptation planning. It provides a number of useful resources as well as the delivery of training in collaboration with the CAROs. |

# 2.0 Summary of Policy and Legislative Context

## 2.1 Local authority development plans

The development plan is the mechanism that seeks to integrate international and EU climate agreements and policy, national climate legislation and policy, national and regional planning policies, and community input into an overall strategy for the proper planning and sustainable development of the local authority.

The development plan is recognised as *'the principal policy document of a local authority'* and *'the main policy document for each planning authority'* [4], [5]. The courts have consistently upheld the importance of the development plan.

The number of objectives to be included in the development plan has grown since the 1963 **Local Government (Planning and Development) Act** [6]. The **Planning and Development 2000 Act** introduced the concept of sustainable development to the regulatory framework for planning and the **Planning and Development (Amendment) Act 2010** introduced a further mandatory requirement for statutory development plans to include objectives to promote reduced energy use, reduced GHG emissions and adaptation to climate change, as well as promoting sustainable settlement and transportation strategies [1].

In addition, the Strategic Environmental Assessment (SEA) process, during the making of the development plan, is required to provide a formal, systematic evaluation of the likely significant environmental effects of implementing the development plan, including climate factors. The SEA process integrates environmental considerations at all stages of the development plan process from preparation to implementation and monitoring. Under the Planning and Development Regulations 2004 (SI No. 436 of 2004) as amended, planning authorities must conduct a SEA [7].

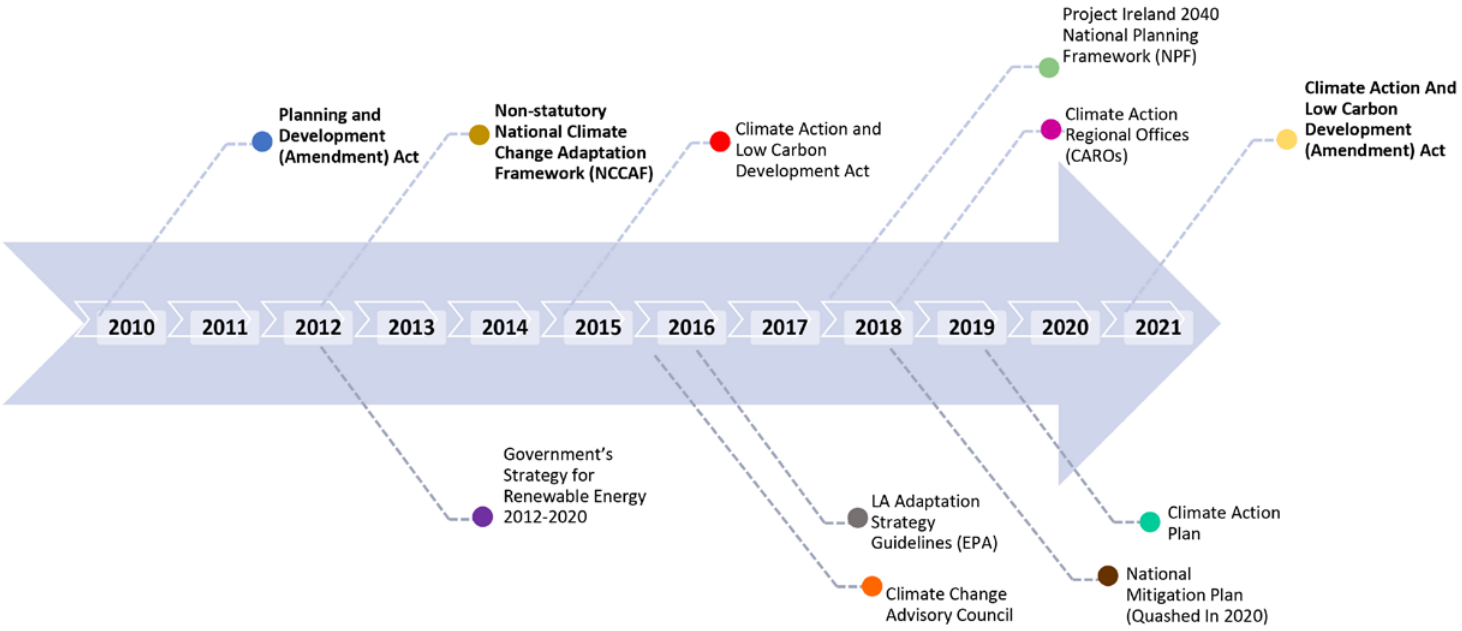
Therefore, from deciding on small planning applications to guiding local authority development to standing up in a court of law, the development plan is the means local authorities use to require, encourage, request, and influence sustainable development and climate action in their areas.

## 2.2 Legislative and policy developments linked to climate mitigation 2010 to present

Climate policy and legislation in Ireland relative to local authorities has accelerated since 2010. These new requirements are designed to ensure that developments plans have clear climate action measures, which are aligned with national strategies and targets.

As shown in the timeline provided in Figure 2-1 below there have been some important developments that highlight the increased significance of climate action planning at the local level.

**Figure 2-1** - Timeline of climate legislation relevant to the local authority between 2010-2021.




### 2.2.1 Climate action within planning legislation

**The Planning and Development (Amendment) Act 2010** (Section 10(2)(n))[1,2] requires that development plans include objectives for [1]:

*"the promotion of sustainable settlement and transportation strategies in urban and rural areas including the promotion of measures to—*

*i. reduce energy demand in response to the likelihood of increases in energy and other costs due to long-term decline in non-renewable resources;*

*ii. reduce anthropogenic greenhouse gas emissions and address the necessity of adaptation to climate change, taking account of the local authority climate action plan (within the meaning of Section 14B of the Climate Action and Low Carbon Development Act 2015), where such a plan has been made for the area in question;*

*in particular, having regard to location, layout and design of new development".*

[1] Section 10(2) of the Act does not specifically apply to Local Area Plans.

[2] The Climate Action and Low Carbon Development (Amendment) Act 2021 in Section 19, amends Section 10 (2) of the Planning and Development Act 2000, in paragraph (n)—it includes the substitution of subparagraph (ii) and deletion of subparagraph (iii).

Such objectives ensure that climate action is provided for in development plans. In addition, local authority CAPs, when adopted, will have to be taken into consideration in development plans [2]. **The Climate Action Plan** (2021) adds further emphasis on the *'pivotal role'* that local authorities play in achieving decarbonisation targets through spatial planning, the provision of public housing, transport infrastructure and the maintenance of biodiversity [8].

Emphasis on the link between climate action and the planning system is also stated in the National Planning Framework (NPF) where it specifies under National Policy Objective 54 the integration of climate action into planning in support of national targets for climate policy mitigation and adaptation [9].

This is an area that the OPR is required to focus upon in its statutory role strategically evaluating local authority development plans for their fit with national and regional planning policy – including climate action. This is provided for under Section 31 AM(2)(a) of the Planning and Development Act 2000 as amended in 2018 [10].

### 2.2.2 Local authority climate action responsibilities

The legislative foundation for local authority climate mitigation is perhaps clearest in relation to renewable energy generally and wind energy specifically. This is based on the planning guidelines from 2006 that set a requirement to identify on development plan maps the key areas where *"wind energy development will be acceptable in principle"* [11, p. 10].

In addition, the **Interim Guidelines for Planning Authorities on Statutory Plans, Renewable Energy and Climate Change** (July 2017) included a Specific Planning Policy Requirement (SPPR) for local authorities to:

*"Indicate how the implementation of the relevant development plan or local area plan over its effective period will contribute to realising overall national targets on renewable energy and climate change mitigation, and in particular wind energy production and the potential wind energy resource (in megawatts)"* [12, p. 2].

In the **Strategy for Renewable Energy** (2012-2020), a key action under Strategic Goal 1 to increase the share of on and offshore wind energy, was the development by Sustainable Energy Authority of Ireland (SEAI) of a template to assist local authorities to prepare renewable energy strategies [13].

The Methodology for **Local Authority Renewable Energy Strategies** (LARES) was published by SEAI the following year in 2013 [14] and an updated version is now in development.

The 2012 **European Energy Efficiency Directive** encouraged the public sector to lead by example in efforts to improve energy performance, setting a target for energy efficiency improvements of 33% by 2020 [15]. This introduced a need for a monitoring system to track progress against the energy efficiency targets. Within Ireland, local authorities submit their energy data to the monitoring and reporting system maintained by the SEAI [16]. This covers direct emissions from local authority owned property such as buildings, vehicles and public lighting.

However, with the introduction in the 2021 Climate Action Act of local authority CAPs, local authorities will now need to prepare a Baseline Emissions Inventory (BEI) for the entire administrative area. This is discussed further in Sections 2.2.3 and 5.6.

The **Climate Action and Low Carbon Development Act** (2015) introduced the **National Adaptation Framework** (NAF) to *"specify the national strategy for the application of adaptation measures in different sectors and by a local authority in its administrative area"* [17, p. 9].

The NAF was published in 2018, and was followed by **Local Authority Adaptation Strategy Development Guidelines** which importantly note that *"Completed local strategies should then be used to inform development plans and other statutory plans and policies of the local authority"* [18, p. 7].

### 2.2.3 Emerging areas for consideration

The publication of the **Local Authority Climate Action Charter** and the **Climate Action Plan** in 2019 placed a significant responsibility on local authorities to lead on climate action [19]. This was strengthened in the 2021 Climate Action Act, which greatly enhanced the role of local authorities in delivering climate action [2]. Most significantly, the introduction of local authority climate action plans dealing with both mitigation and adaptation measures. With regards planning, a key element of the 2021 Climate Action Act is the additional requirement for development plans to have regard to the actions set out in the CAPs.

In the National Climate Action Plan 2021, in contrast to the 2021 Climate Action Act, there is much less mention of the local authority sector. The focus is on how the public sector will lead by example, which refer to the local authority CAPs introduced in the 2021 Climate Action Act and the development of decarbonisation zones, taking forward the Portlaoise De-carbonising Zone example from the previous CAP 2019 [20].

The recently launched **Community Climate Action Programme** will see a significant strand of funding delivered through local authorities. During its first phase €30 million will be allocated. The vast majority of the funding delivered under Strand 1-Action: Building Low Carbon Communities, will see €24 million being provided to local authorities *"to support communities – large and small, rural and urban – to build low carbon communities in a considered and structured way"* [21].

The central focus of this case study paper is to explore how development plans have been integrating climate action to date. The development plan is the policy setter for decisions on individual planning applications and is guided by the SEA process. In turn, individual planning applications, particularly applications that require an Environmental Impact Assessment (EIA), must address climate factors.

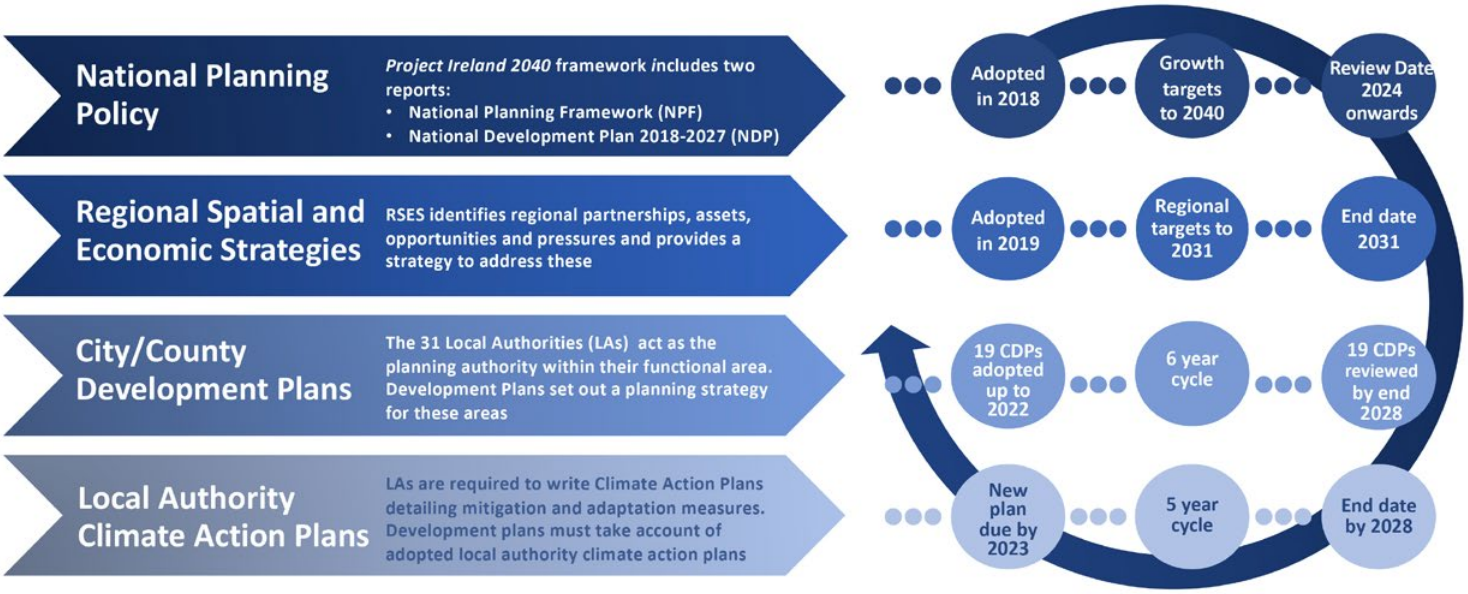
The SEA process considers zoning and development objectives from a sustainability perspective which enables a more coherent examination of the environmental impacts of future developments. Where there may be conflict with other development concerns such as population growth, increased demand for amenities, or industry it should result in the incorporation of countering measures to help mitigate against potential impacts.

It is vitally important that future developments are *'climate proof'* and support the achievement of ambitious emission reduction targets set at the national level. How proposed developments will impact future emissions will likely become a key planning consideration as carbon budgets place increasingly stringent limits on emissions.

## 2.3 Ireland's planning system hierarchy

The 2021 Climate Action Act promises to integrate spatial planning and climate legislation for the first time. Upon commencement of the legislative provisions (which at the time of writing is expected to be imminent) local authorities will be required to write CAPs within 12 months, meaning that local authority CAPs will potentially be prepared nearly at the mid-way point of the life of current development plans (most development plans were written after Regional Spatial and Economic Strategies (RSES) came into force in 2019 and 2020). The result is a collection of overlapping timeframes in the national planning hierarchy as shown in Figure 2-2 below.

**Figure 2-2** - Overlapping timeframes of National Planning Framework, Regional Spatial and Economic Strategies, LA Development Plans and LA Climate Action Plans.



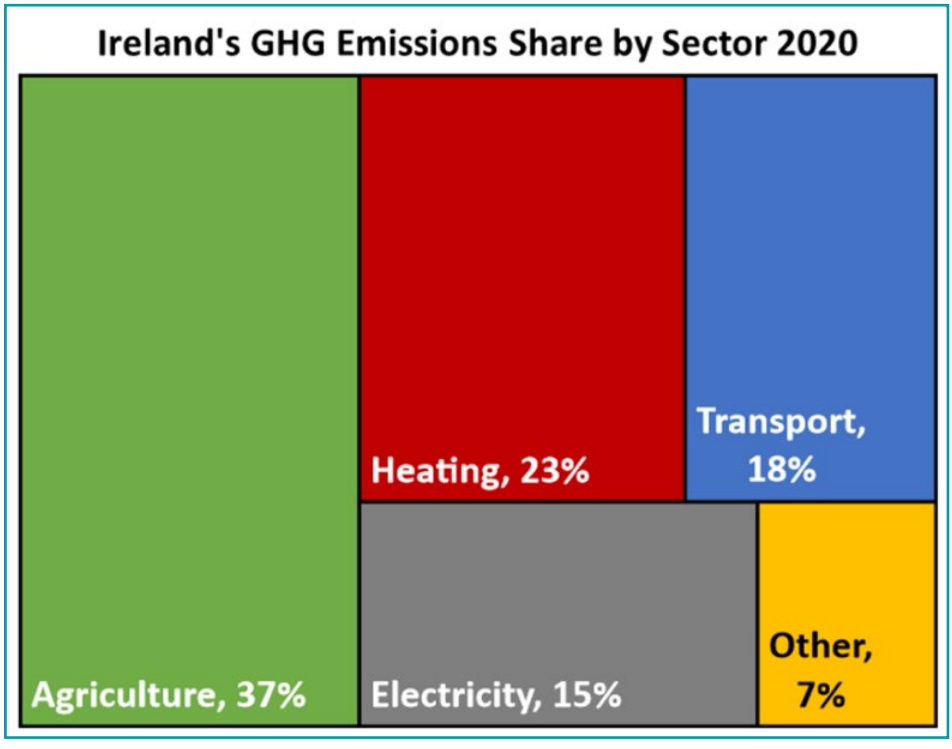
# 3.0 Framework to Understand Local Authority Climate Action Planning

## 3.1 Ireland's GHG emissions profile

Ireland's GHG emissions are recorded annually by the Environmental Protection Agency (EPA) through the National Inventory Report (NIR), which is submitted to the United Nations Framework Convention on Climate Change (UNFCCC) [22].

The most recent 2021 emissions inventory provides a breakdown of GHG sources by sector in 2020, as shown in Figure 3-1. Currently in Ireland, the largest contributing sector is agriculture (~37%), followed by transport (~18%), energy industries (~15%), and residential (~12%). Public services, which include local authority operations (excluding social housing), make up less than 2% of overall GHG emissions.

**Figure 3-1** - EPA latest emissions data - Ireland's greenhouse gas emissions share by sector in 2020 [22].



As noted in Section 2.2.2, under the current monitoring and reporting system maintained by the SEAI, local authorities keep a record of their direct emissions, which will likely be only 1 - 2 % of total GHG emissions in their administrative area. However, the new local authority CAPs will additionally need to outline actions for all sectors within the administrative area. This raises questions on the responsibility of local authorities and their ability to enact change, particularly in key sectors such as agriculture and transport that are coordinated more by national government departments, bodies, and their policies.

## 3.2 Framework to understand local authority climate action planning

Addressing the question of local authority influence on different elements of climate action planning, the framework within Figure 3-2 was developed.

It positions actions across three areas. In the inner circle, direct responsibilities of the local authority, on from this indirect responsibilities and finally, areas of limited influence where leadership is shown.

Local authorities, in their planning functions have limited influence on agriculture bar certain larger intensive agriculture development proposals, but they can more greatly influence patterns of development that drive demand for transport, energy related development and residential emissions.

It is generally accepted that promoting compact patterns in future development can lead to shorter trips to employment, education, shops, social contacts and activities, creating more possibilities for active and sustainable travel. Compact patterns of development also support moves towards district heating, reducing household emissions.

**Figure 3-2** - The role of the local authority in climate action planning.

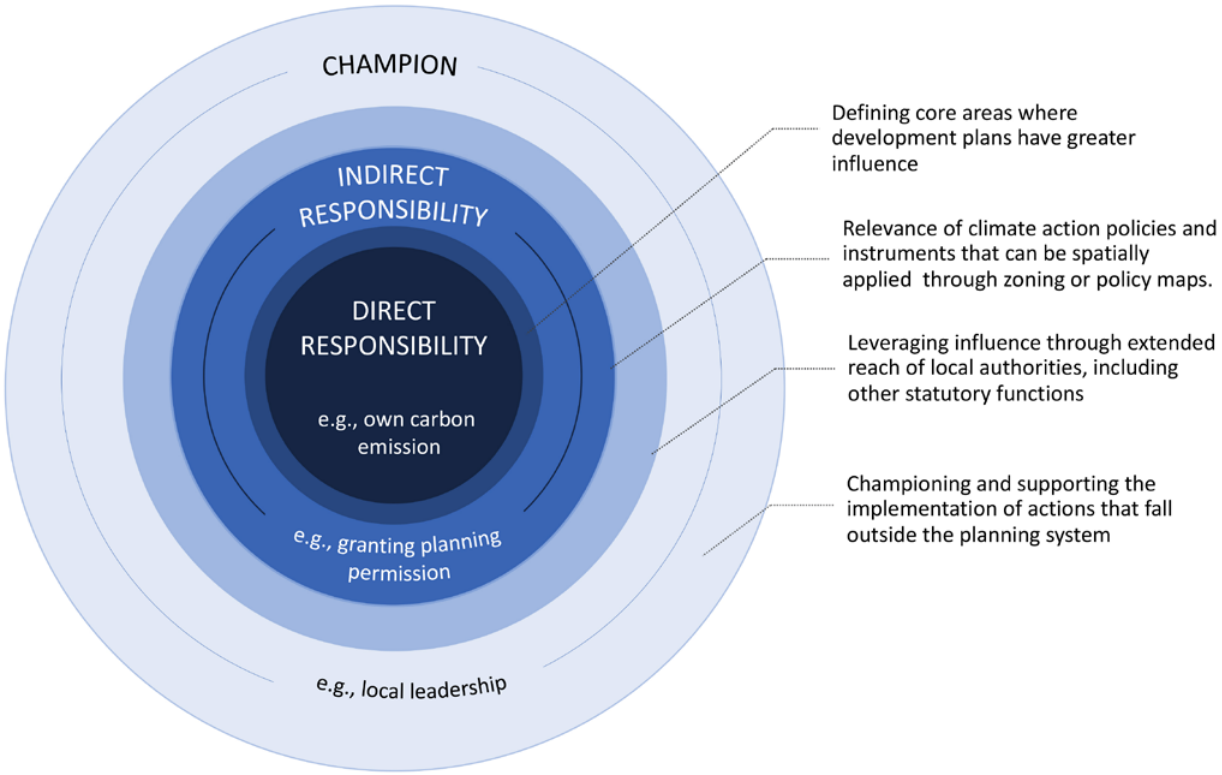
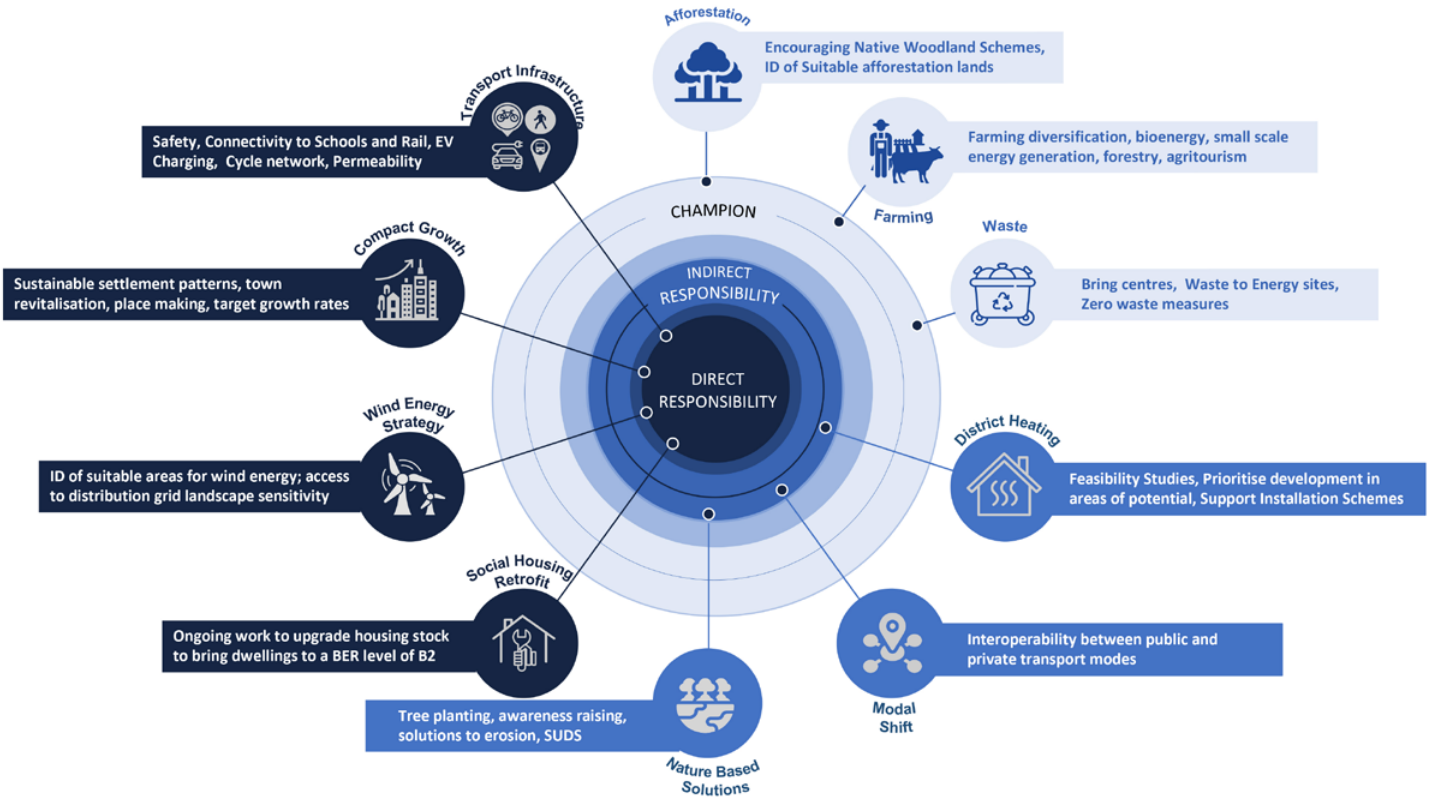


**Figure 3-3** - Examples of climate action mapped to the framework on the role of the local authority.




Making appropriate space for public transport and active travel modes in urban areas and through public transport and active travel oriented development generally reduces emissions from private cars. Local authority development of improved public realms and better cycleways can promote active travel.

Maximum car parking and minimum cycle parking requirements further promote active travel. Local authority planning for renewable energy—wind, solar, hydro, bio-energy— will also be key to delivering Ireland's decarbonisation goals. Figure 3-3 highlights some examples of local authority climate action planning mapped to the framework from Figure 3-2.

## 3.3 Bridging national policy ambition with local authority delivery

### 3.3.1 Supporting local authorities to take on the leadership role

Under Ireland's 2021 Climate Action Act, the role of the local authority in relation to climate action has been significantly expanded [2]. This includes developing local authority CAPs, the first of which is expected to be completed in 2022. Successful delivery of this role will require sufficient supports and resources in order to develop the plans, engage a variety of stakeholders on their content, and to co-ordinate with adjoining local authorities.

Delivering local authority CAPs will require sufficient personnel (dedicated climate action teams), and access to appropriate and necessary tools (e.g. baseline emissions), methods (e.g. to model emissions reduction strategies) and knowledge to carry out the tasks required.

It also requires timely and detailed national guidelines on different aspects of climate mitigation. In addition, there is a clear need for a facilitatory role to support the setting up and coordination of sub-county governance structures, offering advice to people interested in energy/climate projects, and also providing new forums for discussing the alignment of local needs and national objectives. Going further, with greater autonomy, a benefit of this role could be a clearer link between local deliberations and the content of local and regional plans.

### 3.3.2 Improving coherence between national, regional and local policy

National climate policy has advanced considerably over the past two years with significant increases in ambition in the two-year period from the Climate Action Plan 2019, through to the 2021 Climate Action Act, and the Climate Action Plan 2021.

In addition, the role of local authorities in climate action has grown, in particular as a result of Section 16 of the 2021 Climate Action Act. The analysis within this case study paper (in particular Sections 4 and 5) clearly shows positive development in the evolution of development plans towards increased climate action, but not in a consistent manner, with strong leadership demonstrated in some local authorities relative to others.

The engagement with local authorities (see Section 6) revealed both positive intent and challenges in meeting the ambitious national goal of a 51% reduction in GHG emissions by 2030 revolving around coherence between national targets and the enabling steps and *'shares'* of the ask at local level. Climate action policy in key sectors like transport and agriculture are the responsibility of national organisations/ government departments and clarity on the role of local authorities is needed.

Major policy measures are set out via the NPF and National CAP, again with more clarity required on where the role of local authorities fits in.

Finally, the role of regional assemblies as a bridge between national and local policy is a potential bright point on the horizon. Improving the coherence between national, regional, and local climate action policy is critical to meet Ireland's strong climate mitigation ambitions and could be a key *'raison d'etre'* for the regional dimension of local government.

## 3.4 The role of the CDP

The research undertaken has demonstrated that development plans that tackle the climate issue are the ones that clearly, succinctly, and effectively document the local aspects of climate action facing that local authority area.

Baseline emissions profiling is a major part of the above. While not suggesting that everything such profiling may identify is within the scope of the development plan and planning legislation-based policies to address, nevertheless it sets out the context for the communities and local authority in the various areas better understanding their specific contribution through the planning process in tackling climate action.

So, within the context of clear and effective national *'roadmaps'* to a carbon-free future, the local development plan can set out the local roadmaps that cumulatively reach the national targets, drawing out the specific contributions that the implementation of specific planning policies can make including:

- Reducing energy demands because of the implementation of a much more energy efficient overall strategic pattern of development.
- Realising potential for alternative sources of renewable energy by identifying the sources and areas of such potential and laying down a policy framework that will facilitate the activation of that resource; and
- Adapting to the known effects of the changes in our climate that have already been set in train and with contingency for the continuation of such effects.

While wider sectors are directly outside the scope of the development plan and planning policies, there is much benefit in the plan being able to set out its specific contribution in context – accepting that wider actions are the responsibilities of their wider policy owners.

# 4.0 High-level Review of City/County Development Plans

As we have outlined in Section 2 of this case study paper, there have been some important legislative and policy developments in the last ten years concerning climate action and the role of local authorities in promoting sustainable settlement patterns, reducing GHG emissions and more recently accounting for the upcoming requirement to produce local authority CAPs.

We carried out a high-level content analysis of the CDP's in order to explore how these new requirements are being introduced. Content analysis is a research technique which allows for a systematic description of data drawing from quantitative and qualitative insights. This process of analysis involved establishing the prevalence of words, themes and concepts associated with climate action and mitigation, as well as exploring their context and changes over time. Together with the subsequent pathfinder analysis (Section 5) of particularly innovative plans on climate, the analysis highlights a trend-line in the incorporation of climate issues in development plan policies.

The review includes an analysis of development plans pertaining to all thirty-one local authorities in the Republic of Ireland. This involved development plans in adopted and draft stages[3]. This study recognises that the preparation of draft development plans by the executive of local authorities tends to reflect the policy ambition at national level, whereas material amendments proposed by elected members can vary that ambition taking into account local issues and concerns.

This section is developed in three parts. First, we provide a situational analysis, which offers some relevant definitions of the main issues currently framing development plans in Ireland. Secondly, we identify and explore the prevalence of climate criteria in current development plans. Thirdly, we review a selection of climate criteria, and provide examples of trending and emergent practices with a view to showcasing pathfinder local authorities.

[3] Because of the timeframe of reviewing and writing development plans, there were 10 adopted and 21 draft development plans examined. More draft development plans are due to be published over the next few months; this study considers all that were published before 1 August 2021. To carry out a cross sectional analysis of the content of the plans we reviewed a further 5 adopted plans to enable a comparison between older and CDPs published post 2021.

## 4.1 Situational analysis: current issues framing CDP's in Ireland

### 4.1.1 Climate action in development plans

A significant feature in the plans surveyed was their inclusion of climate change/action as a dedicated chapter. Of the initial thirty-one plans surveyed, 22 (around 70%) included a chapter on climate change/action. In six additional plans, climate change and/or climate action formed a part of a chapter. Only three (10%) development plans did not have a chapter or section of a chapter on climate change/action. These three plans are reaching the end of their validity; they were adopted in 2015, 2017 and 2018 and prepared before the UN IPCC issued its stark warnings in 2018 that there were only 12 years left before a global warming of 1.5° C [23]. Whether devoting a chapter to climate or seeking to integrate it into the whole of the development plan, over the last six years, the topic has come to much greater prominence in development plans.

### 4.1.2 Changes in CDP content over time

To consider changes over time in more depth we also carried a comparative cross-sectional analysis of five older CDPs (those published pre-2016) and compared these to their replacements in draft form CDPs (those published in 2021 and pertaining to the same five local authorities). This analysis shows that concepts such as energy and settlement patterns have significantly increased in prevalence in the new draft plans.

Furthermore, we observed a higher incidence in the use of climate adaptation, climate mitigation and sustainability applied in multiple contexts which indicate a level of maturing of these concepts and their application from a local planning perspective. Another notable variation when comparing older and newer CDPs is that longer term targets and objectives associated with 2040 and 2050 time horizons are now a feature of the more recent plans.

Largely due to the influence of the NPF and the CAP (2019) the use of long-term goals and visions provides an important bridge between the big-vision sustainability narrative of national plans and the more practical local solutions within the CDPs. The adoption of larger time-horizons in the CDPs is an important feature in this new role of local authorities as key agents of change.

## 4.2 Cross-cutting issues relating to local authorities

Local authorities produce CDPs for the whole of their area seeking to guide future growth and development. These plans commonly focus their strategy on addressing issues within the context of their locality. However, we have observed a number of cross-cutting issues framing the manner in which strategies and key issues are defined. There are illustrated in Figure 4-1.

**Figure 4-1** - Cross-cutting issues found from high-level review of development plans.


These cross-cutting issues not only have direct implications to how climate action and climate mitigation are integrated into a complex set of social, economic and environmental dimensions within the local context, but also suggest a range of commonalities that can be addressed through stronger regional partnerships or cross-sectoral collaborations.

Climate policies in development plans necessarily need to be flexible in addressing different geographical contexts and this can present challenges and opportunities for local authorities in terms of introducing wider climate mitigation interventions.

Some of these issues for instance point to the opportunity to introduce compact growth innovations as a way to promote more efficient use of land and infrastructure and avoid sprawl. Yet, while there are opportunities arising from the cross-cutting issues they also introduce new and ambitious climate mitigation targets that can present added challenges.

## 4.3 An overview of emerging climate action and climate mitigation criteria

To survey the adopted and draft development plans, we developed a list of search terms taken primarily from the Local Authorities Climate Action Charter and the government's CAP (2019). The search terms take into consideration social, economic and environmental drivers of sustainability.

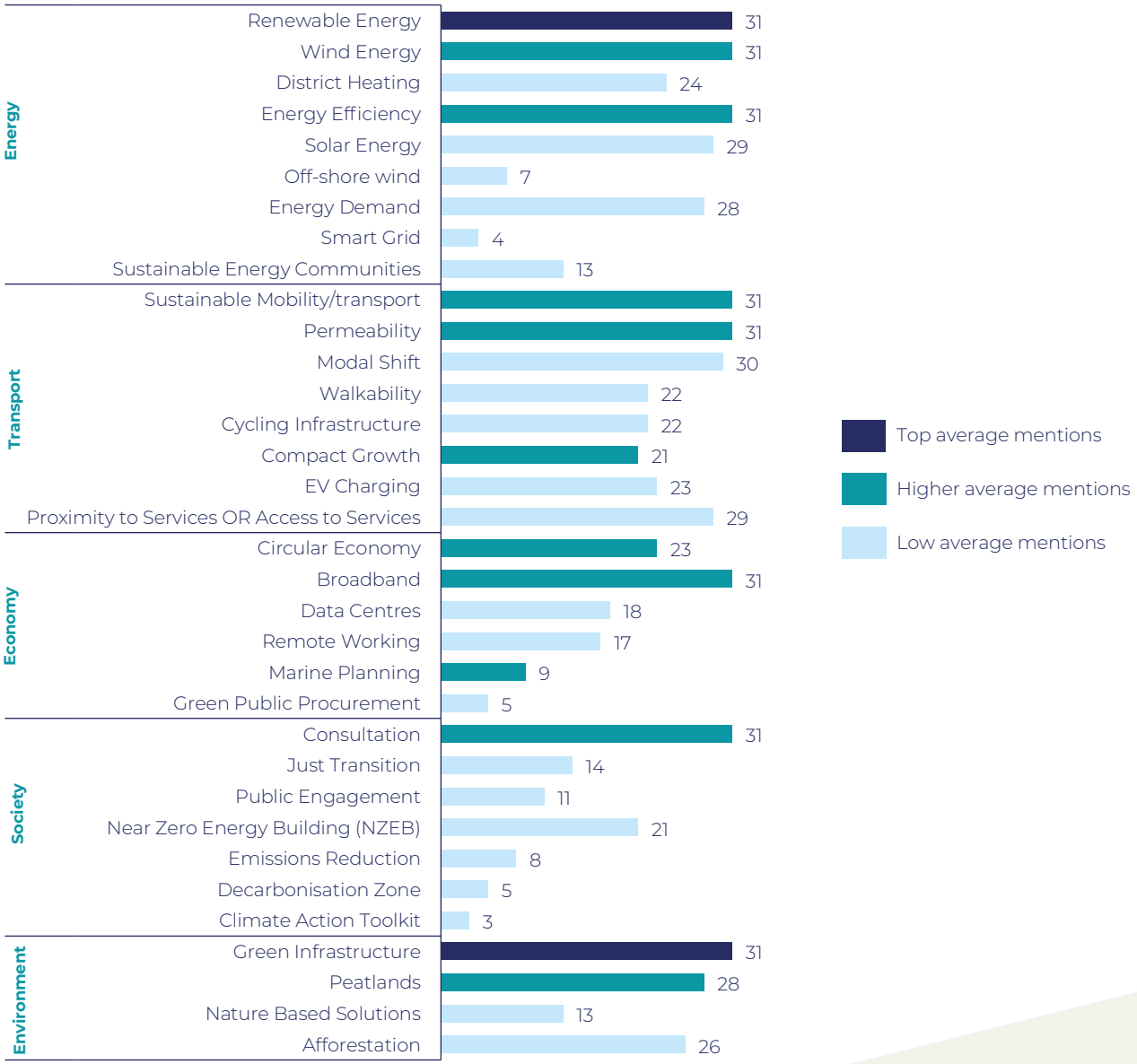
Local authorities have different levels of influence relative to different sectors and climate actions. However, the opportunities to encourage change through the development plan are diverse and growing. Thus, in our search terms we chose to offer a broad overview of relevant issues which consider not just areas that can be zoned, mapped, or spatially applied but also other actions that can be championed, supported, or extended through partnerships or through collaboration with other local authority statutory functions.

### 4.3.1 Which climate mitigation criteria feature more strongly in CDPs?

We identified 34 mitigation criteria, the list is not exhaustive but seeks to offer a broad exploration of actions from the perspective of local planning, land use regulation and other development synergies. It also seeks to consider multiple dimensions of climate mitigation including energy, transport, economy, society and environment. Given the evolving and complex nature of climate action and climate mitigation it is possible elements were omitted unintentionally.

As Figure 4-2 illustrates there are some criteria which feature more strongly than others in current development plans. We quantify the presence of these criteria across the development plans. Criteria such as renewable energy, wind energy, green infrastructure and energy efficiency appear in all the development plans. Because development plans have a six year life the older plans understandably do not include references to more recent planning policies and concepts like just transition, compact growth, solar energy, etc.

**Figure 4-2** - Content analysis of climate mitigation criteria across 31 CDPs and colour coded indication of average mentions.



It is clear from our research that these policies are now being introduced in the newer plans.

We also found a variation in the number of mentions of some of these criteria and we colour coded these in Figure 4-2. This reflects the fact that while criteria may be present in development plans the degree to which it is embedded or develops in the plan may be weaker. The colour coding in the table indicates in a darker shade those with top average mentions (those with 62-57 mentions across the plans reviewed), higher mentions (those with 25-10 average mentions across the plans reviewed) and in a lighter shade those with lower average mentions across all CDPs (those with 9-1 mentions).

It is particularly useful to note that lower level of mentions also suggests that these criteria are often referenced as part of a wider definition, indicating interest in these themes is in a very aspirational way that is seldom set into practice in a measurable form. For instance, emerging criteria such as *'off-shore wind', 'modal shift'* or *'just transition'* are incorporated in the narrative of the plan but they are not always identified within an objective or policy.

Thus, the list of criteria we offer, explores a range of practices and criteria in support of a broader portfolio of practical solutions and measures for CDPs in promoting climate action. We explore these criteria in the context of shifting legislative and societal conditions, which are likely to lead to evolving use of concepts and terminologies. It is also important to note that some criteria may not apply to all contexts, for instance offshore wind mentions are not likely to appear in some counties such as Longford or Laois.

Similarly, peatlands are not likely to appear as an issue for Dublin City or for Fingal. Finally, as a varied portfolio of solutions the findings above and in the section below stress the importance of innovation and adoption of emerging policy but indicate clearly that local authorities bring their own capacities and resources which emerge as strengths in some areas and weaknesses in others.

### 4.3.2 Review of selected climate mitigation criteria

In this section we offer a characterization of selected climate mitigation criteria drawing from insights into their prevalence in the CDPs. We acknowledge significant differences in the way that some interventions are incorporated (or not) in CDPs. Some criteria are subject to stronger policy or statutory requirements than others, differences due to geographical location or other contextual issues also influence the way interventions are incorporated. Despite these differences we also found evidence of best practice and innovation in the leveraging of these ideas. Table 4-1 outlines the key characteristics and features of the most prevalent climate mitigation criteria. We also identify pathfinder local authorities who appear strongest relative to specific criteria.

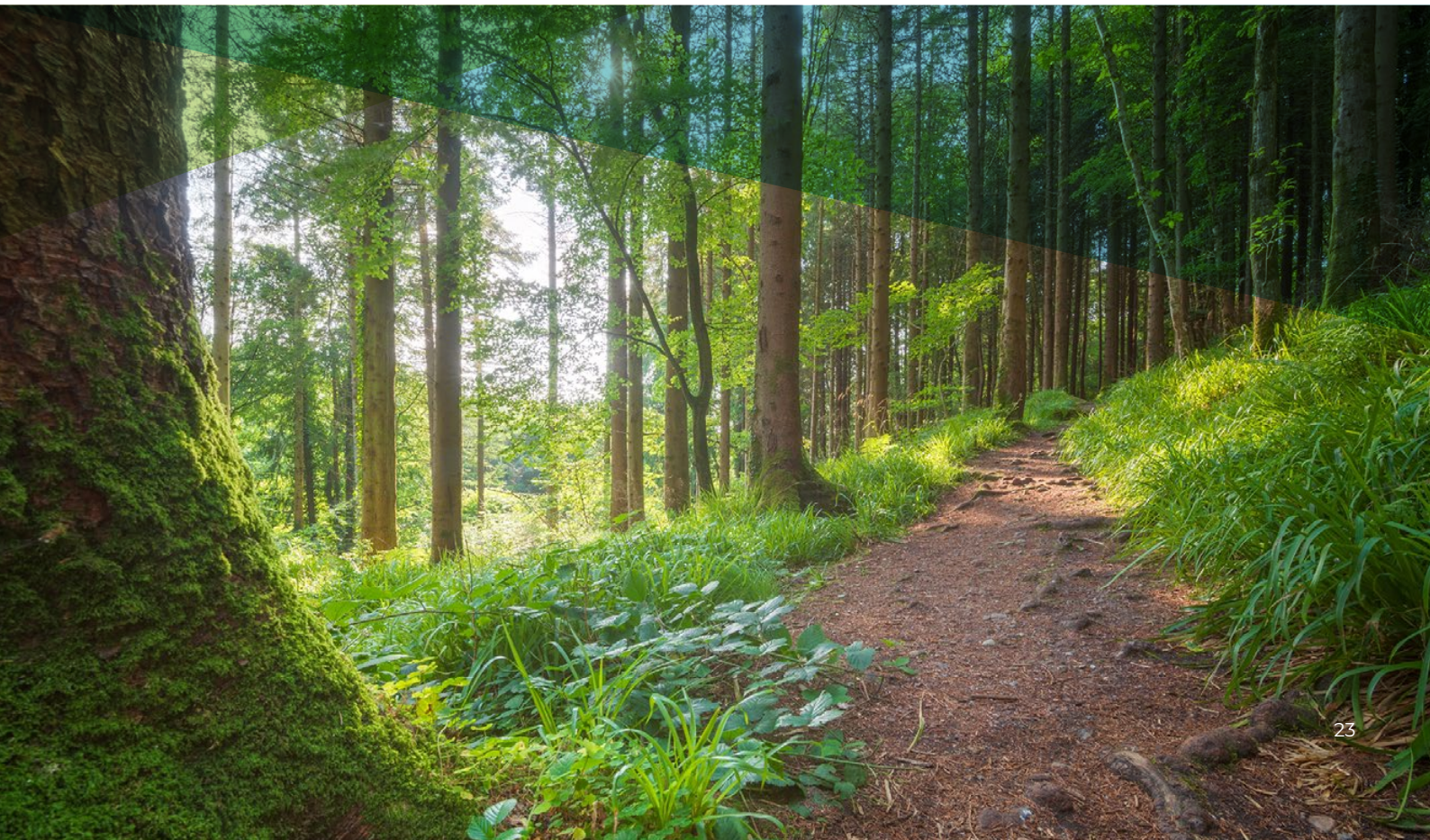
The characterization that we offer is based on a review of the practical application of these criteria within the CDPs. Given the fact that terminologies can vary, items in this review should be considered as an indicative set of steps and not as a comprehensive protocol. Thus, the aim is to consider the various ways in which these items appear within the development plan taking into account different regulatory forms where they emerge as relevant.

**Table 4-1** - Key activities and review insights of leading climate mitigation criteria.

| CRITERIA | KEY COMPONENTS | REVIEW INSIGHTS |
|---|---|---|
| **Renewable Energy (RE)** | > Assessment of current status.<br>> Identification of strategic energy zones.<br>> Setting targets.<br>> Renewable energy mix options and hybrid systems.<br>> Wind Energy Strategy.<br>> List of key issues and processes for emerging technologies (where there are no available guidelines).<br>> Options for large-scale, small-scale and micro-energy generation.<br>> Implementation plan with clear targets.<br>> Landscape and environmental impact assessments.<br>> Access to grid and storage capacity. | RE is mentioned in all CDPs reviewed. This is a strongly developed criteria.<br>Pathfinder LAs include: Cork County (2022-2028 *Draft*), Carlow County (2022-2028 *Draft*), and Clare County (2017-2023).<br>Strong CDPs ensure objective consistency by aligning these with clearly demarcated strategic energy zones and targets. For instance, Cork County outlines and maps key areas for RE, and in the absence of guidelines it defines key processes and issues regarding the development of solar energy projects. |

| CRITERIA | KEY COMPONENTS | REVIEW INSIGHTS |
|---|---|---|
| **Wind Energy** | > Mapping analysis of suitable areas for wind energy.<br>> Coordinated Regional Strategy.<br>> Identification of suitable areas for wind energy deployment.<br>> Landscape sensitivity.<br>> Implementation plan with clear targets.<br>> Applying national separation distances from dwellings or other sensitive structures.<br>> Access to distribution grid.<br>> Strategic use of legacy infrastructure.<br>> Potential for off-shore wind energy. | Wind Energy is mentioned in all CDPs reviewed and is the most prevalent renewable energy technology mentioned within all CDPs.<br><br>Pathfinder LAs include: Cork County (2022-2028 *Draft*), Kilkenny (2021-2027) and Offaly (2021-2027).<br><br>Cork County sets out a detailed strategy for off-shore wind, mapping out key steps and partnership opportunities. Offaly provides useful detail on the strategic use of legacy infrastructure. Common issues include lack of regional coordination and inconsistent use of separation distances between wind turbines and dwellings. Other issues include the lack of targets consistent with the Interim Guidelines SPPR, and other constraints (such as maximum output or number of turbines). |

| CRITERIA | KEY COMPONENTS | REVIEW INSIGHTS |
|---|---|---|
| **Green Infrastructure** | > Develop a varied Green Infrastructure (GI) network to complement wider ecological systems.<br>> Identify features linked to waterways, woodland, parks, grasslands and other areas of potential.<br>> Develop buffer areas to facilitate protected species and biodiversity.<br>> Leverage the role of tree planting, woodlands, peatlands and other habitats for carbon sequestration.<br>> Promote partnerships and co-ordination to support implementation of GI network.<br>> Incorporate green roofs in council buildings and other new builds. | GI is mentioned in all CDPs reviewed. This is a strong criteria across most CDPs.<br>Pathfinder LA's include: South County Dublin (2022-2028 *Draft*), Longford (2021-2027); and Westmeath (2021-2027).<br>South Co Dublin uses a *'layered approach'* to growth in order to protect natural resources and maximise development of GI. It also proposes a GI scoring system to monitor progress. Common issues include inadequate use of data sources for zoning decisions regarding deployment of SuDS and other GI. |



| CRITERIA | KEY COMPONENTS | REVIEW INSIGHTS |
|---|---|---|
| **Consultation** | > Three periods of public consultation.<br>> Engagement formats include public consultation evenings, public information days, stakeholder meetings, meetings with elected members.<br>> Consideration of written submissions by various stakeholders, landowners and the wider public.<br>> Detailed response to submissions on Chief Executive's report and the SEA process.<br>> Outlining number and type of events, engagement numbers and key areas of concern emerging from consultation process.<br>> Drawing in consultation tools for development and implementation of CDP objectives. | Mentioned in all CDPs reviewed but mostly addressed within the draft stages of the CDP.<br>Pathfinder LAs include: Fingal (2017-2023) and Dublin City (2016-2022).<br>Further consultation is drawn from the development of LAPs, public realm, and traffic management strategies. Good practice involves the inclusion of consultation into the creation and implementation of various policies and objectives. The use of digital technologies to communicate and showcase the CDP vision has increased engagement with the wider public. Review shows that stronger interactions are also stemming from leveraging the concept of partnership and community development to encourage meaningful engagement and support implementation of CDP visions. Outreach activities and materials targeting specific groups such as families, children, and people with disabilities, among other groups, would support wider engagement and strengthen the consultation process. |

Table 4-2 below looks in more detail at some criteria that do not feature strongly in current CDPs but that are relevant from a climate mitigation standpoint. As items with low average mentions, there is less evidence to support best practice and thus the pathfinders highlighted here provide very useful insights into how these criteria might best be set into practice in future development plans.

**Table 4-2** - Key activities and review insights of emerging climate mitigation criteria.

| CRITERIA | KEY COMPONENTS | REVIEW INSIGHTS |
|---|---|---|
| **Compact Growth** | > 40% of future housing development set within existing footprint of built-up areas.<br>> Settlement hierarchy and co-ordination with Metropolitan Area Strategic Plan (MASP) and Regional Centres Population Targets as outlined in the RSES.<br>> Infill, brownfield and vacant site development.<br>> Use of flexible performance-based design standards to enable brownfield development.<br>> Regeneration and revitalization of opportunity sites.<br>> Active land management (e.g. vacant site levy, derelict site levy and incentives).<br>> Implementing policy in rural areas to reduce dispersed development.<br>> Target growth rates into cities and towns.<br>> Greater mix of uses and housing choices.<br>> Development of key services, job opportunities, infrastructure and improvements on *'liveability'*. | 68% of all CDPs reviewed explicitly mention compact growth strategies. It is important to note that compact growth is a relatively new term and its inclusion can be largely attributed to its appearance in the NPF (*published in 2018*) as a strategic goal. This is confirmed by its growing prevalence in more recent plans.<br>**Pathfinder LA's include:** Cork City (2022-2028 *Draft*), Limerick (2022-2028 *Draft*), and Cork County (2022-2028 *Draft*).<br>Cork City offers supportive illustrations and examples regarding high-density developments. It provides a clear *'Density and Building Heights Strategy'* and direction on the relationship between density and planning standards. Limerick showcases *'The Living Limerick City Centre Initiative'* (LLCC Initiative) funded under the URDF as an opportunity to promote and adopt compact growth measures. |

| CRITERIA | KEY COMPONENTS | REVIEW INSIGHTS |
|---|---|---|
| **District Heating** | > Identify measures to enable district heating (DH) or heat networks where excess heat is being produced.<br>> Carry out feasibility studies and identify DH opportunity areas.<br>> Prioritise developments in areas of potential and within decarbonisation zones.<br>> Support and learn from pilot installation schemes.<br>> Support complementary technologies (e.g. RES opportunities).<br>> Look to connect to existing systems, where they exist. | 68% of all CDPs mention DH. However, DH is not strongly developed in most of these plans. There are many CDPs with one or two mentions and with no concrete or tangible objectives.<br>**Pathfinders LA's include:** South County Dublin (2022-2028 *Draft*) and Dún Laoghaire-Rathdown (2022-2028 *Draft*).<br>Insights from South County Dublin include performance indicators and commitment to monitoring progress through yearly updates that feed into an internal *'tracker system'*. As an emerging initiative it is also important to learn from projects such as the Tallaght District Heating Project. |

| CRITERIA | KEY COMPONENTS | REVIEW INSIGHTS |
|---|---|---|
| **Just Transition** | > Supporting communities to transition to a carbon neutral society.<br>> National Just Transition Fund for the Midlands Region.<br>> Creation of green enterprise hubs.<br>> Support of local businesses.<br>> Opportunities for reskilling.<br>> Exploring renewable energy potential.<br>> Research and exploratory studies.<br>> Set up of transition teams.<br>> Integrated peatland management.<br>> Tied community engagement process. | 45% of CDPs mention Just Transition which reflects the recent emergence of this concept.<br>**Pathfinder LAs include:** Longford (2021-2027), Cork City (2022-2028 *Draft*).<br>Longford offer a detailed number of County Policy Objectives, outlining key assets and opportunities. The strategy leverages potential supports from key national and European funds. Objectives also include partnership arrangements with Bord na Móna and other agencies.<br>Potential issues include ensuring new employment opportunities and zoned lands align with compact growth and sustainable transport targets. Cork City links transition to engagement to understand and mitigate against undue impact on those most vulnerable or frontline communities. |

| CRITERIA | KEY COMPONENTS | REVIEW INSIGHTS |
|---|---|---|
| **Afforestation** | > Support in planning for initial forestation and expansion.<br>> Consideration of new plantations in protected areas (i.e. restrictions).<br>> Co-operation with key stakeholders such as private landowners, Coillte and the Forest Service and adhering to Forest Service Guidelines.<br>> Forestry developments, be that afforestation, felling licence or forestry roads, are substantially dealt with and regulated by the Forestry Service (DAFM) and local authorities are consulted as part of this process. | 84% of CDPs mention afforestation, however, most mentions are aspirational with no clear targets.<br>**Pathfinder LAs include:** Leitrim (2015-2021) and Offaly (2021-2027).<br>Leitrim underscores the impact of forestry for landscape, environment and economy and calls for greater control through the planning system. It encourages *'farm scale'* forestry and considers synergies to promote amenities, cycle routes and carbon neutral wood harvesting. It outlines guidance for the appropriate location of forestry. |

## 4.4 Development planning for climate mitigation: Summary of high-level review

The high-level findings show variation in the presence and application of climate mitigation criteria in the CDPs. There are time disparities between the plans evaluated which are likely to have skewed the findings. We note here a strong correlation between the use of climate mitigation criteria and the more recent development plans. However, there are other important factors to consider relative to some of the weaker criteria we identified.

Firstly, we must acknowledge the constrained nature of the planning system which allows only for a limited degree of control over this larger portfolio of solutions. Understanding how planning aligns with these criteria is therefore important to explore in order to support the evolving role of the planning system and the CDPs in promoting and implementing climate action and climate mitigation at local level. There is also a discernible divide between urban and rural planning priorities which may account for the prevalence of some criteria in some areas and not in others. For instance, district heating is likely to have greater application in areas with larger urban centres. Finding alternative district heating systems that fit the rural context is important for the adequate adaption of these ideas into the rural space.

In the review we have outlined a number of pathfinders that have shown ambition as well as clear pathways and measures to achieve results. Pathfinders are varied.

Pathfinder development innovations include those who:

1. Show ambition
2. Outline clear pathways and specific measures to achieve results
3. Seek innovative ways to extend influence across different domains and sectors
4. Monitor climate action measures
5. Integrate climate change/action throughout the development plan

Pathfinders are not construed as perfect local authorities who are doing everything possible to encourage mitigation throughout their functional area - such a local authority does not exist. Rather, pathfinders serve as examples of ambitious climate mitigation in particular areas that can inspire other local authorities to broaden and intensify their climate mitigation efforts.

# 5.0 Local Authority Climate Action Planning Case Studies

This section will provide a number of case study examples of areas of climate action planning identified through the review of CDPs. It involved a thorough review of each adopted and draft development plan, with a particular focus on the various elements of climate action highlighted in the following sections. The examples of good practice were predominately identified based on the inclusion of different elements of climate action planning deemed to be important. The tables detailing this assessment can be seen in Appendix A.1.

## 5.1 Integrating climate action into the development plan

There are a number of ways in which climate action can be integrated. First and foremost, it can be given a dedicated chapter at the initial stages which puts a clear emphasis on climate action. As can be seen in Appendix Table A.2.1, the majority (24 of 31) of development plans included a specific chapter on climate action and where plans didn't include such a chapter, they tended to be older plans.

In the recent Draft South Dublin County Development Plan (2022-2028), climate action is set out as a key cross-cutting issue whose consideration is then woven into and across all chapters. In addition, the plan identifies policies which are positive in respect of climate change and includes a climate action audit at the end of each chapter outlining specific measures to address climate impacts.

In several other development plans, the integration of climate action objectives was generally made clear by the inclusion of a table listing how the specific policies in each chapter related to climate action or how each chapter supported climate action. For example, in the Climate Action and Energy Chapter of the Draft Laois County Development Plan (2021-2027), there is a table matching targets from the national CAP 2019 to local county targets under various action areas. In the Wicklow CDP (2016-2022), a climate change audit looking at the contribution to both mitigation and adaptation was included as an appendix.

The general absence of measurable development plan targets for climate action policy and objectives arguably weakens the current round of adopted plans and many of the draft plans. Crucially, while the vast majority (15 of 24 with climate action objectives) stated support for national or regional policy, they didn't provide measures specific to their area.

There were three interesting examples (highlighted in green in Table A.1.1), two of which are highlighted here: how Laois (CDP 2021-2027) presented their climate action objectives and South Dublin's (Draft CDP 2022-2028) climate audit at the end of each chapter. Looking to the future, a similar table or inclusion of such an audit could be a useful means of meeting the requirement for development plans to take account of the local authority CAPs. The audit in particular can not only act as an assessment of how different elements of the plan may support or hinder climate action efforts but could also serve to verify the alignment between the sectoral actions laid out in the CAP and corresponding strategies in the development plan.

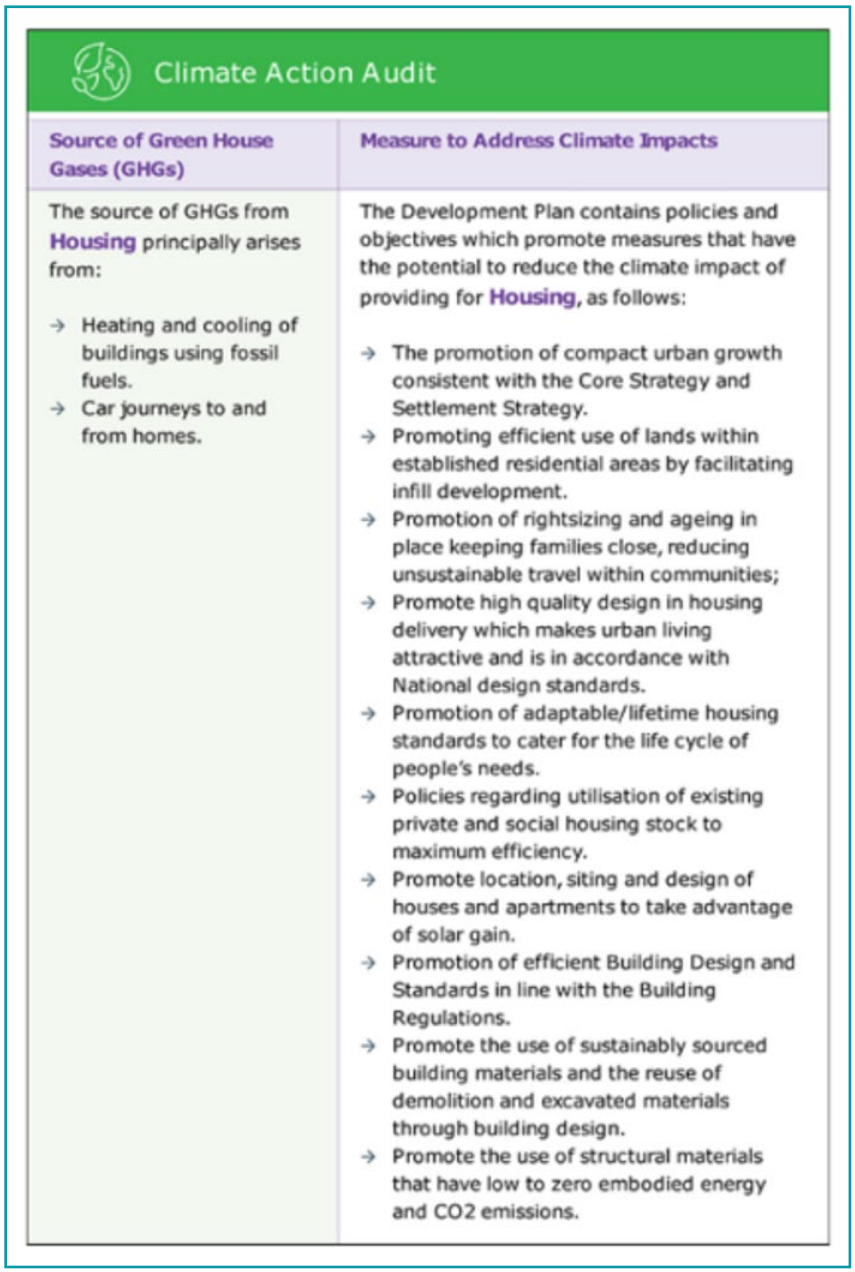
### 5.1.1 Laois (CDP 2021-2027)

The Laois table (see Figure 5-1 below) outlining the climate mitigation and adaptation objectives is a particularly good example of how climate action measures could be identified for three reasons. Firstly, the commentary on the left side provides a summary of the *'action area'* and why it's important with regards climate action. Secondly, the side-by-side comparison of national and county targets. Thirdly, the listing of specific climate adaptation and mitigation objectives under each action area is noteworthy.

**Figure 5-1** - Laois (Draft CDP 2021-2027) - Table of Climate Action measures.

| ACTION AREA 1 – SUSTAINABLE TRANSPORT | | |
|---|---|---|
| **COMMENTARY** | **NATIONAL TARGET** | **LOCAL COUNTY TARGET** |
| The transport sector is one of the biggest contributor of GHG emissions in the County where the predominant mode of transport is the private car. This is evident in the number of commuters leaving the county for work purposes which equates to 12,000 per day. How we travel between places will also need to be addressed, promoting a modal shift away from car dependency for more sustainable and active transport modes. | • Reduce CO2 eq. Emissions From The Sector By 45 % To 50 % Pre NDP Projections<br>• Increase the no of EV to 936,000<br>• Build the EV charging network to support the growth of EVS at the rate required | • Delivery of a public transportation hub in the key town of Portlaoise by 2027;<br>• The prioritization and delivery of Public bus measures in the key towns of Portlaoise and Graiguecullen by 2027;<br>• The prioritisation of pedestrian linkages and creation of blueways / Greenways in the key town of Portlaoise/ Graiguecullen and Portarlington<br>• Additional 30 EV charge Points in Portlaoise by 2027 |

**Figure 5-2** - South Dublin County (Draft CDP 2022-2028) - Climate Action Audit.



**Climate Action Audit**

| Source of Green House Gases (GHGs) | Measure to Address Climate Impacts |
|---|---|
| The source of GHGs from **Housing** principally arises from:<br>→ Heating and cooling of buildings using fossil fuels.<br>→ Car journeys to and from homes. | The Development Plan contains policies and objectives which promote measures that have the potential to reduce the climate impact of providing for **Housing**, as follows:<br>→ The promotion of compact urban growth consistent with the Core Strategy and Settlement Strategy.<br>→ Promoting efficient use of lands within established residential areas by facilitating infill development.<br>→ Promotion of rightsizing and ageing in place keeping families close, reducing unsustainable travel within communities;<br>→ Promote high quality design in housing delivery which makes urban living attractive and is in accordance with National design standards.<br>→ Promotion of adaptable/lifetime housing standards to cater for the life cycle of people's needs.<br>→ Policies regarding utilisation of existing private and social housing stock to maximum efficiency.<br>→ Promote location, siting and design of houses and apartments to take advantage of solar gain.<br>→ Promotion of efficient Building Design and Standards in line with the Building Regulations.<br>→ Promote the use of sustainably sourced building materials and the reuse of demolition and excavated materials through building design.<br>→ Promote the use of structural materials that have low to zero embodied energy and CO2 emissions. |

### 5.1.2 South Dublin (Draft CDP 2022-2028)

The South Dublin Climate Action Audit at the end of each chapter was a unique example of how to integrate the climate action objectives in the development plan. Similar to the Laois example, it importantly identifies the sources of GHG emissions, and the measures set out to address them. Including it in each chapter as opposed to a single table in the climate chapter strengthens the integration as a cross-cutting issue. Looking to the future, this audit could be further enhanced by including reference to the baseline emissions in each sector, which will be determined through the local authority climate action plans (see Section 5.6).

## 5.2 Renewable energy strategy

A full overview of the review is provided in Appendix Table A.1.2. There were seven instances when the Renewable Energy Strategy (RES) was just a wind energy strategy solely dealing with onshore wind, and another seven that hadn't included a RES.

Fewer local authorities analysed or mapped resource potential for technologies other than onshore wind (e.g. offshore wind, solar, bioenergy, geothermal, district heating, hydroelectricity), but a large number outlined development management standards as a means to facilitate such applications. However, clearer guidance at the national level will be important to ensure consistency in approach. Another key issue that emerged, as is the case nationally, was the focus on electricity generation and lack of detail on heating and transport.

There were four stand out examples: Carlow, Clare, Waterford, and Wexford (highlighted in green in Table A.1.2). Carlow and Clare are the two highlighted here as they considered a wider range of technologies and set targets more closely aligned with the national ambition.

### 5.2.1 Clare (Existing CDP 2017-2023)

There are a number of elements to the Clare RES that make it a stand out example. Firstly, starting from a good evidence base with the historical energy demand by fuel and sector, and unlike a number of other examples providing the source for this data. Secondly, determining the total potential from each resource and an appropriate target for the six year period.

Thirdly, considering a range of technology options in both electricity and heating. Finally, not just covering the minimal statutory requirement of areas suitable for wind energy but also including maps for: current installed capacity, accepted applications, heating demand with high demand clusters identified, offshore wind, small-scale hydroelectric, bioenergy resource, ocean energy and grid infrastructure.

There are two elements that could be added to this example to improve the policy framework.

Firstly, the creation of a clearer link between the RES targets and both the county's own energy demand and the overall national targets in the Climate Action Plan 2021. The target established should take into account the fact that the capacity for renewable energy sources will vary across different local authority areas, so that if only a bare minimum was provided for under each development plan, the overall national target would likely be missed. Targets for solar and other expected renewable energy sources should also be provided.

Secondly, in designating areas as acceptable in principle or open for consideration for renewable energy related development, it is essential that the plan identifies sufficient areas to meet the RES targets, taking account of project attrition rates and other environmental and amenity constraints, so that the plan is well grounded. This will be a multiple of the minimum to deliver the equivalent number of turbines, or solar infrastructure, and should be clear and evidence-based.

**Figure 5-3** - Clare (Existing CDP 2017-2023) - Energy demand by fuel and sector.

**County Clare - Evolution of Energy Use by Fuel Source**[12]

| Year | Oil | Electricity | Natural Gas | Coal | Peat | Renewables | Grand Total |
|---|---|---|---|---|---|---|---|
| 2000 | 1,998 | 563 | 382 | 127 | 92 | 41 | 3,203 |
| 2005 | 2,413 | 665 | 465 | 157 | 83 | 67 | 3,850 |
| 2008 | 2,510 | 723 | 523 | 134 | 85 | 84 | 4,059 |
| 2010 | 2,185 | 682 | 505 | 111 | 77 | 108 | 3,669 |
| 2020 Baseline | 2,399 | 776 | 613 | 55 | 42 | 110 | 3,996 |
| 2020 NEEAP/ NREAP | 2,035 | 750 | 468 | 52 | 39 | 294 | 3,638 |

*(All figures in GWh/y)*

**County Clare Evolution of Energy Consumption 2000 to 2020**[10]

| Year | Agriculture | Commercial | Industry | Residential | Transport | Total |
|---|---|---|---|---|---|---|
| 2000 | 175 | 374 | 902 | 768 | 984 | 3,203 |
| 2005 | 186 | 473 | 949 | 898 | 1,344 | 3,850 |
| 2008 | 166 | 517 | 879 | 970 | 1,527 | 4,059 |
| 2010 | 153 | 500 | 725 | 997 | 1,294 | 3,669 |
| 2020 Baseline | 213 | 569 | 799 | 968 | 1,448 | 3,996 |
| 2020 (as per NEEAP / NREAP4 | 213 | 461 | 787 | 774 | 1,404 | 3,638 |

*(All figures in GWh/y)*

**Figure 5-4** - Clare (Existing CDP 2017-2023) - Resource potential by renewable source maximum and planned.

**County Clare Gross Renewable Energy Resource – Unconstrained**[13]

| Chapter | Renewable Energy Resource:- Unconstrained | County Clare GWh/y | MW |
|---|---|---|---|
| **Thermal** | | | |
| 6 | Forest wood fuel & wood Process by-product | 256.5 | 48.8 |
| 6 | Energy Crop (SRC-Miscanthus) | 700.0 | 159.8 |
| 7 | Geothermal | 306.5 | 140.0 |
| 6,7 | Micro Thermal | 962.8 | 549.1 |
| **Sub Total** | | **2,225.8** | **897.7** |
| **AD-CHP*thermal** | | | |
| 12 | AD - Grass Silage | 181.0 | 23.0 |
| 12 | AD - Animal wastes | 32.0 | 4.1 |
| 12 | Municipal Organic MSW | 226.0 | 28.7 |
| 6 | Micro CHP | 74.7 | 10.7 |
| 6,13 | Biomass CHP | 460.5 | 58.4 |
| **Sub Total** | | **974.2** | **124.8** |
| **Electric** | | | |
| 9 | Onshore wind | 13,766.0 | 4,761.6 |
| 10 | Offshore wind | 819.0 | 311.6 |
| 11 | Hydro | 467.8 | 89.0 |
| 10 | Wave | 19,700.0 | 7,496.2 |
| 10 | Tidal | 367.0 | 127.0 |
| 5 | Micro Gen elec | 48.6 | 14.9 |
| 5,6,13 | CHP electric | 584.5 | 35.0 |
| **Sub Total** | | **35,752.9** | **12,835.4** |
| 15 | Transport | 1,404.0 | 200.3 |
| | | **40,356.9** | **14,058.2** |

**Renewable Energy Resource Targets (Technical & Practical)**

| Chapter | Renewable Resource Technical & Practical | County Clare GWh/y | MW |
|---|---|---|---|
| **Thermal** | | | |
| 6 | Forest wood fuel & Wood Process by-product | 128.3 | 29.3 |
| 6 | Energy Crop (SRC-Miscanthus) | 175.0 | 39.9 |
| 7 | Geothermal | 134.9 | 61.6 |
| 6,7 | Micro Thermal | 529.5 | 302.0 |
| **Sub Total** | | **967.6** | **432.8** |
| **AD-CHP*thermal** | | | |
| 12 | AD - Grass Silage | 60.3 | 7.6 |
| 12 | AD - Animal wastes | 16.0 | 2.0 |
| 12 | Municipal Organic MSW | 75.3 | 9.5 |
| 6 | Micro CHP | 3.7 | 0.5 |
| 6,13 | Biomass CHP | 460.0 | 58.3 |
| **Sub Total** | | **615.3** | **78.1** |
| **Electric** | | | |
| 9 | Onshore wind | 2,753.2 | 952.4 |
| 10 | Offshore wind | 272.7 | 103.8 |
| 11 | Hydro | 468.0 | 89.0 |
| 10 | Wave | 197.0 | 75.0 |
| 10 | Tidal | 110.1 | 41.9 |
| 5 | Micro Gen elec | 16.1 | 4.8 |
| 5,6,13 | CHP electric | 307.6 | 29.2 |
| **Sub Total** | | **4,124.8** | **1,296.0** |
| 15 | Transport | 140.4 | 20.0 |
| **Overall Total Renewable Target** | | **5,848.1** | **1,826.9** |

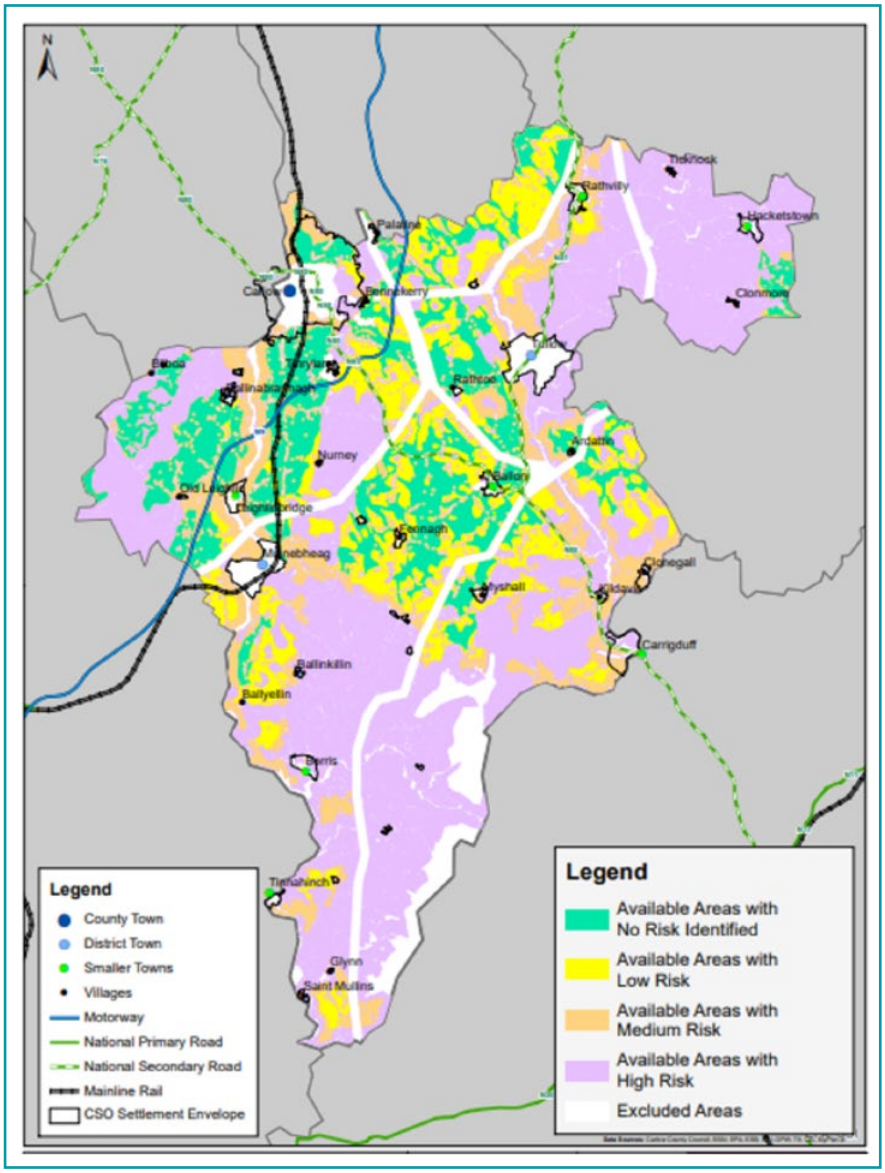
**Renewable Energy Resource Targets (Accessible - Planned)**

| Chapter | Renewable Energy Resource Accessible - Planned | County Clare GWh/y | MW |
|---|---|---|---|
| **Thermal** | | | |
| 6 | Forest wood fuel & Wood Process by-product | 128.3 | 29.3 |
| 6 | Energy Crop (SRC-Miscanthus) | 175.0 | 39.9 |
| 7 | Geothermal | 34.0 | 15.0 |
| 6,7 | Micro-Thermal | 175.7 | 92.8 |
| **Sub Total** | | **513.0** | **177.0** |
| **AD-CHP*thermal** | | | |
| 12 | AD - Grass Silage | 20.1 | 2.5 |
| 12 | AD - Animal wastes | 15.8 | 2.0 |
| 12 | Municipal Organic MSW | 25.1 | 3.2 |
| 6 | Micro CHP | 2.0 | 0.5 |
| 6,13 | Biomas CHP | 460.0 | 58.3 |
| **Sub Total** | | **523.0** | **66.6** |
| **Electric** | | | |
| 9 | Onshore wind | 1,590.0 | 550.0 |
| 10 | Offshore wind | 27.3 | 10.0 |
| 11 | Hydro | 468.0 | 89.0 |
| 10 | Wave | 59.1 | 20.4 |
| 10 | Tidal | 66.1 | 20.0 |
| 5 | Micro Gen - elec | 7.2 | 2.1 |
| 5,6,13 | CHP electric | 261.5 | 29.2 |
| **Sub Total** | | **2,479.2** | **720.8** |
| 15 | Transport | 14.0 | 2.0 |
| **Overall Total Renewable Target** | | **3,529.2** | **966.4** |

**Figure 5-5** - Carlow (Draft CDP 2022-2028) - Direct and indirect job creation from renewable energy in Ireland.

| Technology | Installed Capacity 2018 (MW) | Number of Jobs (Direct & Indirect) | Number of Jobs/ MW Installed |
|---|---|---|---|
| All Renewable Energy | 3,890 | 6,988 | 1.8 |
| All Wind Energy | 3,518 | 4,200 | 1.2 |
| All Bioenergy | 106 | 2,100 | 19.8 |
| Solid Biofuels | 45 | 1,700 | 37.8 |
| Biogas | 62 | 300 | 4.9 |
| Renewable Hydropower | 237 | 200 | 0.8 |
| Geothermal Energy | – | 188 | – |
| Renewable Municipal & Industrial Waste | 39 | 100 | 2.6 |
| Solar PV | 29 | 100 | 3.5 |

**Figure 5-6** - Carlow (Draft CDP 2022-2028) - Areas identified for solar development.



## 5.3 Modal shift

The majority (21 out of 31) of development plans had a dedicated sustainable transport chapter, which was generally called either *'sustainable transport'* or *'movement and mobility'*. Those that didn't have a dedicated chapter had included transport within the infrastructure chapter, with a primary focus on roads. An overview of the review is provided in Appendix Table A.1.3.

Two commonly noted concepts were the *'10/15-minute town/city'* and *'avoid shift improve'* framework. These place a strong emphasis on active modes and a reduction in car use. The vast majority of development plans mention the promotion of sustainable travel (public transport, walking and cycling) or modal shift, with objectives and policies outlining support for the development of necessary infrastructure, requirements that settlement patterns reduce car dependence and parking requirements and increase cycle parking for new developments.

However, there was a limited number of examples where the existing modal share data was included, and in particular very few with actual targets for modal shift set. There was only a handful of efforts at mapping potential active (5) or public transport (6) opportunities, and also quite a limited number of plans that listed specific projects to be implemented (11), see Appendix Table A.1.3.

Notwithstanding that detailed proposals may be intended to be addressed in the LAPs for towns within the county, the identification of specific projects in the CDP is important to demonstrate that the plan contains objectives for the promotion of a sustainable settlement and transportation strategy as required by Section 10(2n).

The two examples highlighted here are the Draft South Dublin County Development Plan (2022-2028) and the Draft Cork City Development Plan (2022-2028) (highlighted in green in Appendix Table A.1.3). The former was one of the few examples to have current and desired modal shares, as well as a clear list of projects to achieve the targets. The latter likewise had these three elements, and in addition included maps of proposed bus and cycling routes.

### 5.3.1 South Dublin (Draft CDP 2022-2028)

There are two good elements of South Dublin's approach to promoting more sustainable travel. In particular, the inclusion of specific percentage targets for walking, cycling, bus, train and private transport with actions and objectives to achieve the target for each mode is noteworthy. Another useful element is the outlining of proposed projects along with indicative timelines. This long-term perspective is important for transport planning as the project delivery may span more than one development plan period. The approach could be enhanced by the mapping of potential sustainable projects.

**Figure 5-7** - South Dublin (Draft CDP 2022-2028) - Proposed cycle routes and projects.

**Cycle South Dublin Routes and Projects**
(Cycle South Dublin routes are indicated on Development Plan Maps)

| 'Now' Schemes | | 'Soon' Schemes | | 'Later' Schemes | |
|---|---|---|---|---|---|
| Route No. | Route/Project | Route No. | Route/Project | Route No. | Route/Project |
| 1 | Lucan Canal Loop | 3 | Corkagh Park to Grand Canal<br>(A) Clondalkin Village to Grand Canal<br>(B) Corkagh Park | 20 | Newcastle to Rathcoole |
| 2 | Grand Canal extension | 4 | Tallaght to Clondalkin Village | 21 | Fortunestown Lane<br>(A) Citywest Avenue to junction with Citywest Road<br>(B) Ardmore Drive to its junction with Cookstown Road |
| 5 | N81<br>(B) Jobstown Junction | 5 | N81<br>(A) Jobstown Junction to N82 junction | 22 | Citywest Road - Citywest Avenue to N81 |

**Figure 5-8** - South Dublin (Draft CDP 2022-2028) – Sustainable Mobility Objectives, Modal Share Current and Target.

**Policy SM1: Overarching – Transport and Movement**

Promote ease of movement within, and access to South Dublin County, by integrating sustainable land-use planning with a high-quality sustainable transport and movement network for people and goods.

**SM1 Objective 1:**
To achieve and monitor a transition to more sustainable travel modes including walking, cycling and public transport over the lifetime of the County Development Plan, in line with the County mode share targets of 15% Walk; 10% Cycle; 20% Bus; 5% Rail; and 50% Private (Car/Van/HGV/Motorcycle).

**SM1 Objective 2:**
To ensure consistency with the NTA's Transport Strategy for the Greater Dublin Area (2016-2035) and any superseding document, as required by RPO 8.4 of the RSES.

**SM1 Objective 3:**
To support the delivery of key sustainable transport projects including DART and Luas expansion programmes, BusConnects and the Greater Dublin Metropolitan Cycle Network in accordance with RPO 5.2 of the RSES/MASP.

**SM1 Objective 4:**
To ensure that future development is planned and designed in a manner that facilitates sustainable travel patterns, with a particular focus on increasing the share of active modes (walking and cycling) and public transport use and creating a safe and attractive street environment for pedestrians and cyclists, in accordance with RPO 5.3 of the RSES/MASP.

**SM1 Objective 5:**
To ensure that future development is planned and designed in a manner that maximises the efficiency and protects the strategic capacity of the metropolitan area transport network, both existing and planned, and to protect and maintain regional accessibility, in accordance with RPO 8.3 of the RSES.

| Mode | SDCC Existing Mode Share (%) | SDCC Target Mode Share (%) |
|---|---|---|
| Walk | 13 | 15 |
| Cycle | 5 | 10 |
| Bus | 17 | 20 |
| Train | 3 | 5 |
| Private (Car, Van, HGV, Motorcycle) | 62 | 50 |

### 5.3.2 Cork City (Draft CDP 2022-2028)

As with the South Dublin example, Cork City also had a comparison of current and target modal share for commuting traffic, as well as a list of projects with expected timelines. In addition, there was the inclusion of expected new cycle and bus routes for the six years covered by the plan.

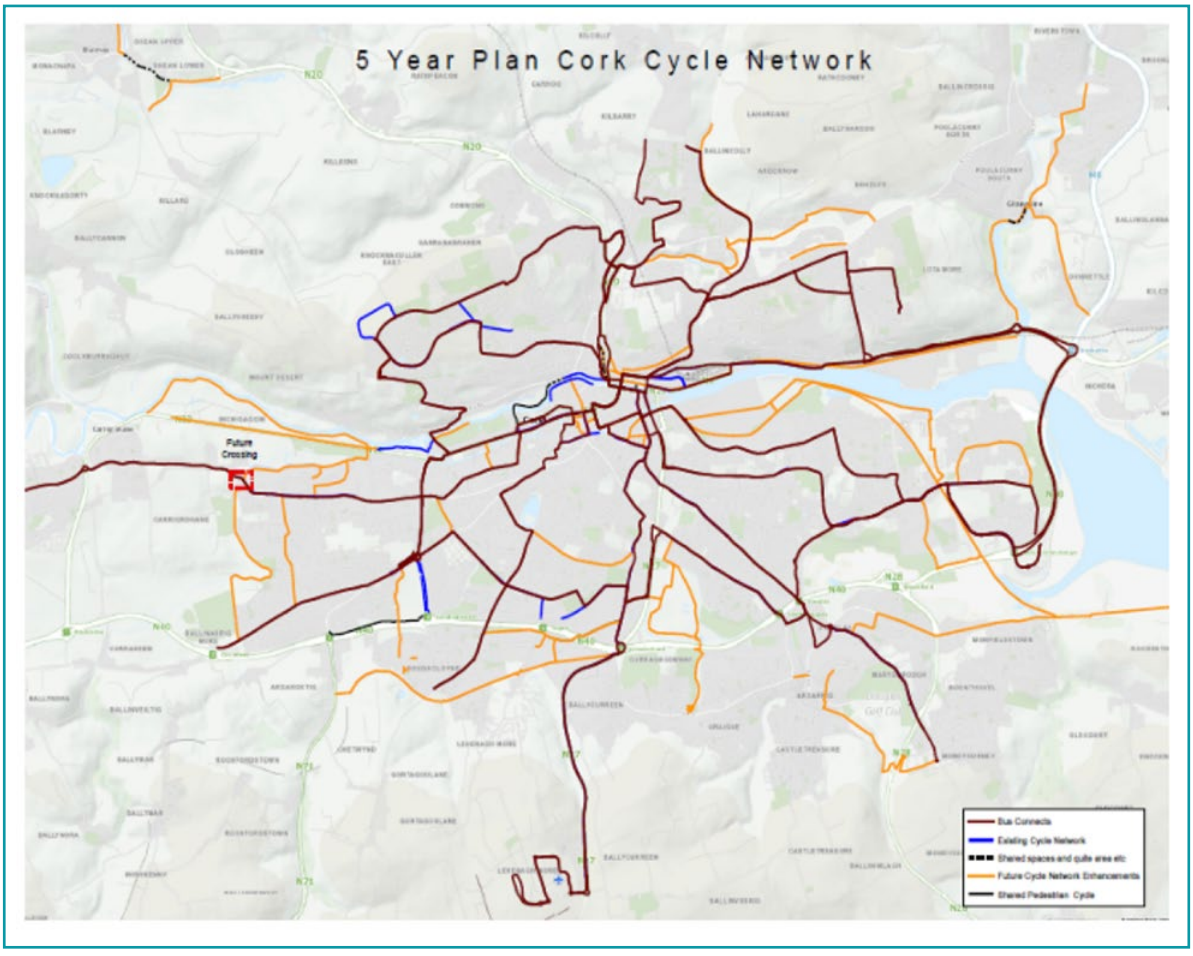
The target for cycling is 4%, which is well below the target of 10% set in the 2009 National Cycle Policy Framework [24]. This demonstrates that while setting a target is important, it is only the first step towards meaningful climate mitigation. There was also a strong focus on walkable neighbourhoods in the Core Strategy.

**Figure 5-9** - Cork City (Draft CDP2022-2028) - Walkable neighbourhoods graphic.

**Figure 5-10** - Cork City (Draft CDP 2022-2028) - Sustainable transport projects with expected delivery timeline.

| Transport Intervention | Timeframe | | | Approximate Cost |
|---|---|---|---|---|
| | Short Term up to 2026 | Medium Term up to 2031 | Long Term up to 2040 | |
| **Suburban Rail** | | | | |
| Through running at Kent Station | | | | |
| Kent Station platform improvements | | | | |
| Bypass loops at new stations online north of Kent Station | | | | |
| Mallow platform improvements | | | | |
| New rail stations | | | | |
| Cobh platform improvements | | | | |
| Purchase of rolling stock | | | | |
| Dual track to Midleton | | | | |
| Electrification | | | | |
| Purchase of rolling stock | | | | |
| **Suburban Rail Approximate Cost** | | | | **€274,000,000** |

**Figure 5-11** - Cork City (Draft CDP2022-2028) - 5-year cycle route plan.



## 5.4 Compact growth

The implementation of compact growth is a key means by which planning can help reduce emissions associated with heating and transport. It will have little impact on existing emissions, but the future proofing of new developments is important. Compact growth featured heavily in the core strategy of the CDPs published since the NPF was adopted in 2018.

The focus within housing targets was strong on land requirements and how much of it could be satisfied by brown/infill sites. The vast majority included a core strategy objective based on the NPF target for new housing to be delivered within the existing built up areas on infill and/or brownfield sites: 50% of development in the case of the five main cities and 30% in other areas [9]. The Cork City Draft CDP (2022-2028) went beyond this target, aiming for 66% of all new homes to be provided within the existing footprint of the city, and Dún Laoghaire-Rathdown Draft CDP (2022-2028) has an ambitious policy objective to deliver 100% of all new homes within the existing footprint.

The integration of spatial planning with transport planning was widely referenced. However, the link between sustainable transport options and the housing targets set for each settlement was generally weak. There were some examples of maps with the settlement hierarchies and sustainable transport routes highlighted but limited connection made between the two when discussing housing targets. The mapping of vacant/brownfield/infill sites was likewise limited.

As referenced in relation to sustainable transport projects above, where it is intended to deal with this matter in LAPs, the inclusion of an appropriate level of detail within the CDP is still important to demonstrate that the plan contains objectives for the promotion of a sustainable settlement and transportation strategy as required by Section 10(2n).

All of the CDPs had an objective *"to maintain and update as required a Vacant Sites Register"*, as introduced by the **Urban Regeneration and Housing Act 2015** [25]. However, there was no example where this register had clearly informed the settlement and housing strategy. Meath CDP (2021-2027) did note that there were 18 sites registered and provided a link to the database.

The key benefits of compact growth highlighted tended to be focused around economic development and quality of life as opposed to supporting emission reductions. There was a strong emphasis on *'placemaking'* or *'healthy placemaking'* to make cities, villages, and towns more accessible and liveable for people, as well as encouraging local job opportunities.

### 5.4.1 Roscommon (Draft CDP 2021-2027)

The Core Strategy Table, in addition to population and housing projections that were provided in the vast majority of plans, also includes densities and the number of units that could be delivered on brown/infill sites. What is particularly nice about this example is the clear presentation in the table.

**Figure 5-12** - Roscommon (Draft CDP 2021-2027) – Core strategy table.

**Table 2.2: Core Strategy Allocations**

| Settlement | 2016 Population | Population Growth 2021-2027 | New Residential Units | Proposed Densities | Residential zoned land requirement | Units to be delivered on infill/brownfield lands |
|---|---|---|---|---|---|---|
| **Settlement Type: Regional Growth Centre** | | | | | | |
| **Athlone (Monksland/ Bellanamullia)** | 21,300 (4,350 in Monksland/ Bellanamullia) | 1,763 | 658 | 50 units/Ha | 13.16 Ha | 197 |
| **Settlement Type: Key Town** | | | | | | |
| **Roscommon** | 5,900 | 1,514 | 565 | 35 units/Ha | 16.14 Ha | 170 |
| **Carrick-on-Shannon (Cortober)** | 4,100 (640 in Cortober) | 188 | 70 | 35 units/Ha | 2 Ha | 21 |
| **Settlement Type: Self- Sustaining Growth Town** | | | | | | |
| **Boyle** | 2,570 | 541 | 202 | 20 units/Ha | 10.1Ha | 61 |
| **Settlement Type: Self- Sustaining Towns** | | | | | | |
| **Ballaghaderreen** | 1,800 | 340 | 127 | 20 units/Ha | 6.35 Ha | 38 |
| **Castlerea** | 1,990 | 354 | 132 | 20 units/Ha | 6.6 Ha | 40 |
| **Strokestown** | 825 | 155 | 58 | 20 units/Ha | 2.9 Ha | 17 |
| **Elphin** | 565 | 107 | 40 | 20 units/Ha | 2 Ha | 64 |
| | | **4,962** | **1,852** | | **59.25 Ha** | **556** |

### 5.4.2 Cork City (Draft CDP 2022-2028)

There are a few elements to the Cork City Draft CDP (2022-2028) Core Strategy to highlight. Firstly, tying the entire plan together with the concept of compact *'liveable'* growth. Secondly, providing a map of density and building height zones.

Thirdly, something that was missing from the vast majority of plans was to make a clear link to sustainable transport options, Cork City addressed this with: graphics and maps of walkable neighborhoods, a map of Cork City 2040 transport plan including settlements, and breakdown of sustainable transport options for key settlements.

**Figure 5-13** - Cork City (Draft CDP 2022-2028) - Strategic objectives for Cork City 2022-2028.

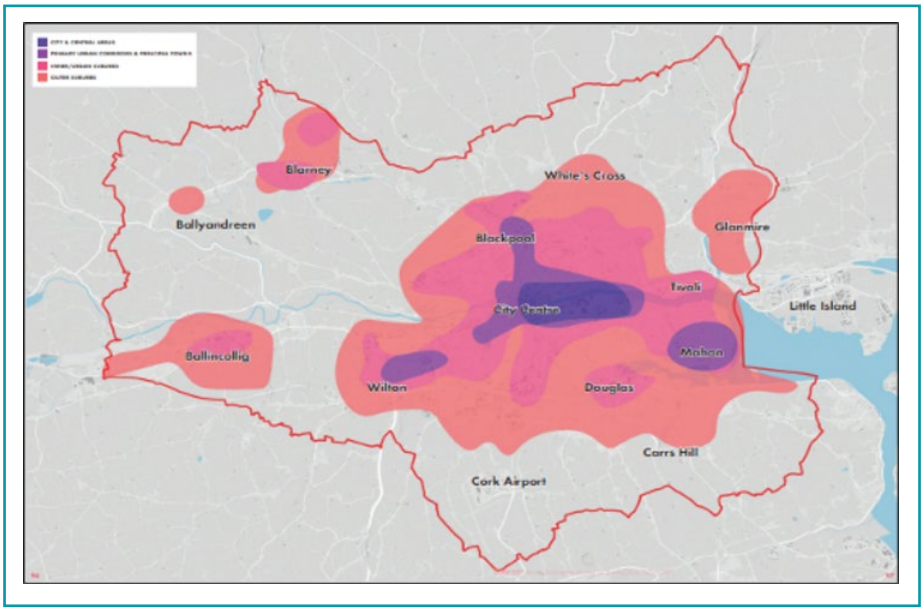



**Figure 5-14** - Cork City (Draft CDP 2022-2028) - density and building heights strategy.

| Density and Building Heights Strategy | Density | | | | | Heights | | | |
|---|---|---|---|---|---|---|---|---|---|
| | FAR | | Dwellings Per Hectare | | | No. of Storeys | | | |
| | Prevailing | Target | Prevailing | Target* | | Prevailing | | Target | |
| | | | | Lower | Upper | Lower | Upper | Lower | Upper |
| **City** | **2.5 - 7** | **4+** | **10 - 25** | **100** | **N/A** | **2** | **5** | **4** | **8**** |
| City Centre | 2.5 - 7 | 4+ | 10 - 25 | 100 | N/A | 2 | 5 | 4 | 6 |
| North Docks | 0.5 - 1 | 3+ | 0 - 40 | 100 | N/A | 2 | 3 | 4 | 7 |
| South Docks | 0.5 - 1.5 | 4+ | 0 - 10 | 100 | N/A | 2 | 4 | 5 | 10** |
| **Fringe / Corridor / Centre** | **1.0 - 3.5** | **2.5 - 4+** | **25 - 100+** | **50** | **150** | **2** | **6** | **4** | **7** |
| City Fringe / Corridor | 1.5 - 3.5 | 2.5 - 4.5 | 25 - 100 | 50 | 150 | 3 | 6 | 5 | 7 |
| Mahon | 0.5 - 3.5 | 1 - 4 | 10 - 40 | 50 | 120 | 2 | 5 | 4 | 6 |
| Blackpool | 0.5 - 3.0 | 1 - 4 | 0 - 40 | 50 | 120 | 2 | 5 | 4 | 6 |
| Wilton | 0.5 - 3.5 | 1 - 4 | 10 - 25 | 50 | 120 | 2 | 4 | 3 | 5 |
| **Inner Urban Suburbs** | **0.2 - 1.5** | **0.5 - 2.5** | **10 - 40** | **45** | **100** | **2** | **4** | **3** | **5** |
| 1. The Urban North | 0.2 - 0.7 | 0.5 - 1.5 | 10 - 25 | 50 | 100 | 2 | 3 | 3 | 4 |
| 2. Tivoli | 0.2 - 0.7 | 0.5 - 3.5 | 0 - 10 | 50 | 100 | 2 | 4 | 3 | 5 |
| 3. Ballintemple & Blackrock | 0.2 - 1.5 | 0.5 - 1.5 | 10 - 25 | 40 | 80 | 2 | 4 | 3 | 5 |
| 4. Douglas | 0.2 - 2.5 | 0.5 - 3.5 | 5 - 20 | 50 | 100 | 2 | 3 | 3 | 4 |
| 5. South Link Road Corridor | 0.2 - 1.5 | 0.5 - 2.5 | 15 - 40 | 50 | 100 | 2 | 3 | 3 | 4 |
| 6. South West Corridor | 0.2 - 1.5 | 0.5 - 2.5 | 20 - 40 | 50 | 100 | 2 | 3 | 3 | 4 |
| 7. North West | 0.2 - 1.5 | 0.5 - 1.5 | 10 - 25 | 40 | 80 | 2 | 2.5 | 2 | 4 |
| 8. North Blackpool | 0.2 - 1.5 | 0.5 - 1.5 | 0 - 25 | 40 | 100 | 2 | 4 | 3 | 5 |
| 9. Central Ballincollig | 0.5 - 3.0 | 0.7 - 3.5 | 10 - 25 | 50 | 100 | 2 | 4 | 3 | 5 |
| 10. Blarney | 0.2 - 1.5 | 0.5 - 1.5 | 0 - 25 | 25 | 50 | 1 | 2 | 2 | 3 |
| 11. Stoneview | 0.2 - 0.7 | 0.5 - 1.5 | 0 - 25 | 40 | 80 | 1 | 2 | 2 | 3 |
| **Outer Suburbs** | **0 - 1.5** | **0.2 - 1.5** | **0 - 25** | **35** | **60** | **2** | **3** | **2** | **4** |

* Assuming resi-led scheme.
** Potentially suitable for exceptional tall building(s).

## 5.5 Development management

There are tensions between national regulations/guidance and setting development management standards within development plans, as was raised in a number of interviews (Section 6). However, there were some examples that are nonetheless worth highlighting.

There were two areas of interest: requirements for new buildings and considerations for renewable energy such as solar PV that currently lack national guidance. Just over half of CDPs (17 out of 32) had a dedicated development management chapter, which generally had a section on climate action or energy. In six cases it was provided as part of the appendix, and there were a number of instances where the development management guidance for renewables was outlined in the Renewable Energy Strategy or energy chapter. The most common inclusions were green infrastructure, bicycle parking, passive solar design or maximizing solar gain, and solar energy.

A number of CDPs had a requirement for an energy, sustainability or climate action report to accompany applications for commercial developments greater than 1,000m$^2$ and residential developments greater than 30 units, or in the case of South Dublin Draft CDP (2022-2028) greater than 20 residential units and in the case of Galway County Draft CDP (2022-2028), Offaly CDP (2021-2027) and Tipperary Draft CDP (2022-2028) greater than 10 residential units. An interesting addition in the Limerick Draft CDP (2022-2028), was to *"Encourage the use of structural materials that have low to zero embodied energy and $CO_2$ emissions"*.

The Dublin City Draft CDP (2022-2028) is highlighted here as it also had detailed requirements for buildings to be *"district heating enabled"*.

The renewable energy development standards often covered potential impacts or siting considerations for a range of different technologies: solar, hydro, bioenergy and geothermal. Solar PV was the most well covered, appearing in half of the CDPs. Clare CDP (2017-2023), Kilkenny CDP (2021-2027), Meath CDP (2021-2027) and Wexford Draft CDP (2021-2027) in addition to outlining siting considerations these plans provided a list of reports expected to accompany a planning application.

### 5.5.1 Dublin City (Draft CDP 2022-2028)

There are two elements to the development management standards within the Dublin City CDP (2022-2028): the *'Climate Action Energy Statement'* to accompany new builds and detailed requirements for 'District Heating Enabled' developments.

**Table 5-1** - Dublin City (Draft CDP 2022-2028) - Climate action energy statement.

Proposals for all new developments in excess of 30 or more residential units or 1,000 sq.m. or more of commercial floor space, or as otherwise required by the planning authority, will be required to include a Climate Action Energy Statement.

The purpose of this statement is to demonstrate how low carbon energy and heating solutions have been considered as part of the overall design and planning of the proposed development. Having regard to the above, the statement, which shall be prepared by a certified engineer, shall address:

> the technical, environmental and economic feasibility of on-site renewable energy generation including solar PV and small scale wind power;

> the technical, environmental and economic feasibility of/at a minimum, the following high-efficiency alternative energy supply and heating systems:

- decentralised energy supply systems based on energy from:
- renewable and waste heat sources;
- co-generation (combined heat and power);
- district or block heating or cooling, particularly where it is based
- entirely or partially on energy from renewable and waste heat sources;
- heat pumps

The plan is particularly strong on the district heating support. There is a very detailed map of heating densities provided, the outline within Table 5-16 below and a list of relevant technical data to be submitted within the Climate Action Energy Statement such as: peak heat demand (kW), annual heat demand (MWh), and floor area ($m^2$).

**Table 5-2** - Dublin City (Draft CDP 2022-2028) - District heating enabled outline.

Where it is not feasible for a development to be district heat enabled, the statement must provide a clear explanation as to why this is would not be the case, and must also demonstrate that the proposed development offers a similarly efficient and low carbon energy and heating solution.

For the avoidance of doubt, for a development to be *'District Heating Enabled'*, it should incorporate an efficient, low carbon building heat network, and/or a block communal heating network, in order to facilitate a future connection to a district heating network, without the need for significant additional retrofitting. To this end, *'District Heating Enabled'* development should provide for:

- an efficient, centralised, wet-based heat network within the building or within the area of the development as a whole (as appropriate);
- the allocation of sufficient space in plant rooms to accommodate suitable district heating equipment, such as heat exchangers etc.;
- the provision and safeguarding of suitable pipe routes throughout the building and complex;
- the provision and safeguarding of suitable district heating network connection routes at and beyond the site boundary.

### 5.5.2 Wexford (Draft CDP 2021-2027)

The Wexford Draft CDP (2021-2027) includes development management standards for anaerobic digestion and solar PV.

There are two parts to it: firstly, providing a list of reports or assessments that should accompany an application, and secondly, a list of siting considerations. In addition, there is a detailed explanation of *'glint and glare'* provided for solar PV.

**Table 5-3** - Wexford (Draft CDP 2021-2027) - List of considerations for solar PV planning applications.

Applications for solar farm developments should be accompanied by the following:

- A description of project including the method of construction. The use of driven or screw pile foundations should be used where possible to ensure that there is no long-term loss of agricultural land.
- An indication of the generation capacity of the proposed development.
- A timeframe for completion and commissioning of the project and the expected lifetime of the proposed development.
- Details showing the extent of any site levelling works proposed.
- The location and design of cabinets/building(s) to house inverters, transformers, switchgear/substations and spare parts.
- The location of onsite cables (to be underground).
- Details of proposed grid connection.

**Siting of New Developments**

- Solar PV farms should generally be located on lower slopes or within folds in gently undulating lowland landscapes or on flat plateau sites, and in landscapes with a sense of enclosure.
- The layout and design of schemes should follow the contours and enclosure patterns of the landscape - siting of panels/arrays that are remote from the rest of the group should be avoided.
- The site should be compact and not fragmented over a large landholding.
- Cabinets or buildings should be carefully sited and should generally avoid high or exposed locations – the use of existing and locally occurring vegetation should be used to screen such features where possible.
- Inverters should be housed in existing buildings where possible, particularly where these are of local vernacular and located near the site.
- Access tracks should be kept to a minimum.

**Glint and Glare**

Glint and glare has the potential to impact on the amenity of nearby residents, road and rail users and on aviation. A glint and glare assessment should accompany all applications for solar farms and should include the following:

- A description of the magnitude of effects on nearby dwellings and rail/roads.
- An assessment of the cumulative impacts with nearby existing and permitted solar farms, as well as other planning applications which have been lodged with the council or An Bord Pleanála, and other structures/landscape features as appropriate.
- Within a 15km radius of airports, the glint and glare Assessment should consider potential glint and glare towards existing and planned aviation receptors which include: i) flight approach paths to runways and ii) air traffic control towers. Any applications within 15km of Waterford Airport will be referred to the Irish Aviation Authority for comment.
- The potential for PV panels, frames and supports to have a combined reflective quality should be assessed. This assessment should consider the likely reflective capacity of all of the materials used in the construction of the solar farm.

## 5.6 Climate mitigation baseline

An essential starting point for climate mitigation planning is to build an understanding of the current sources of emissions within the area of interest. An emerging consideration for development plans and planning policies and objectives is the Baseline Emissions Inventory (BEI) that will be developed as part of local authority climate action plans. Climate policies and objectives should target key sources of emissions identified by the BEI.

There are a number of existing examples of local authorities preparing BEI for their administrative area. This has generally been as part of joining the Covenant of Mayors.

The launch of the Covenant of Mayors by the European Commission in 2008 set the ambition to gather local governments voluntarily committed to achieving and exceeding the EU climate and energy targets [26]. The first step after signing up to the initiative is to prepare a BEI [27], and what was originally called a Sustainable Energy Action Plan (SEAP) [28], but is now a Sustainable Energy and Climate Action Plan (SECAP) [29]. At present, 19 out of 31 Irish local authorities have signed up to the initiative and so far, 12 have submitted action plans [30].

Within Ireland, Codema (Dublin's energy agency) have prepared detailed guidance on how they determined energy-related $CO_2$ emissions in the four Dublin local authorities: *"Developing $CO_2$ Baselines: a step-by-step guide for your local authority"* [31]. As noted in Section 1.4 and 2.2.3, the government is preparing statutory guidance on the development of local authority climate action plans. These will have an appendix dedicated to climate mitigation planning, with a particular focus on the approach to be taken to determine the BEI. A summary of the necessary calculations for a BEI is provided in Appendix A.2 of this case study paper.

From the research undertaken, there were only three examples (Dún Laoghaire-Rathdown Draft CDP (2022-2028), Kilkenny Draft CDP (2021-2027) and South Dublin Draft CDP (2022-2028)) where development plans contained figures from a BEI, and a number of others with energy demand by sector but not emissions (Carlow Draft CDP (2022-2028)). However, there are a number of existing SEAP, SECAP and CAPs as outlined in Appendix A.2. There are two innovative examples we wish to highlight here: the 3 Counties Energy Agency (3CEA) online portal *'Energyhub'* and Codema's spatial heat energy analysis.

There are two key challenges with preparing the mitigation baseline: data and knowledge gaps. As noted in the Dublin City Development Plan: *"The Dublin City Climate Action Plan sets targets for the Council's buildings, operations and social housing. These account for less than 4% of the total emissions in Dublin City, which highlights the need to work with stakeholders and tackle the remaining 96% of emissions produced citywide"* [32, p. 95].

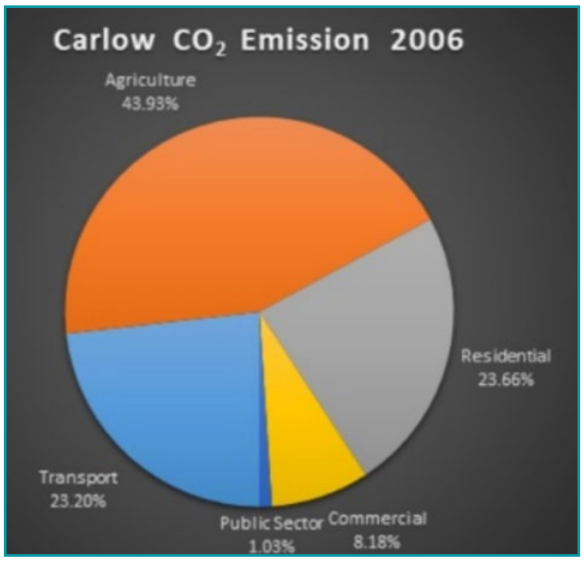
The vast majority of emissions, not covered by the public sector Monitoring & Reporting system maintained by SEAI, have very limited data available. The absence of energy or emissions data below the national level means there is a reliance on proportioning national data. This is a rather crude approach failing to account for local deviations such as transport options, economic activity or type of housing. In addition to the poor granularity of data there is also a temporal issue as much of the indicators used come from the Census, which is only updated every five years. These issues present a particular challenge for the tracking of progress over time, as the current approaches to preparing a BEI do not readily support such monitoring.

The second key challenge in the preparation of BEIs and local authority climate action plans is the technical skillset missing from many local authorities. It is no coincidence that the examples shown here and many of the case studies throughout Section 5 are local authorities that have the support of an energy agency.

### 5.6.1 Carlow, Kilkenny and Wexford Energy

The 3CEA has prepared an online portal for Carlow, Kilkenny and Wexford in order to display the energy and emissions data [33]. The **Energyhub – Emissions and Energy Data Observatory** is intended to offer a means of tracking and displaying progress toward emission reduction targets.

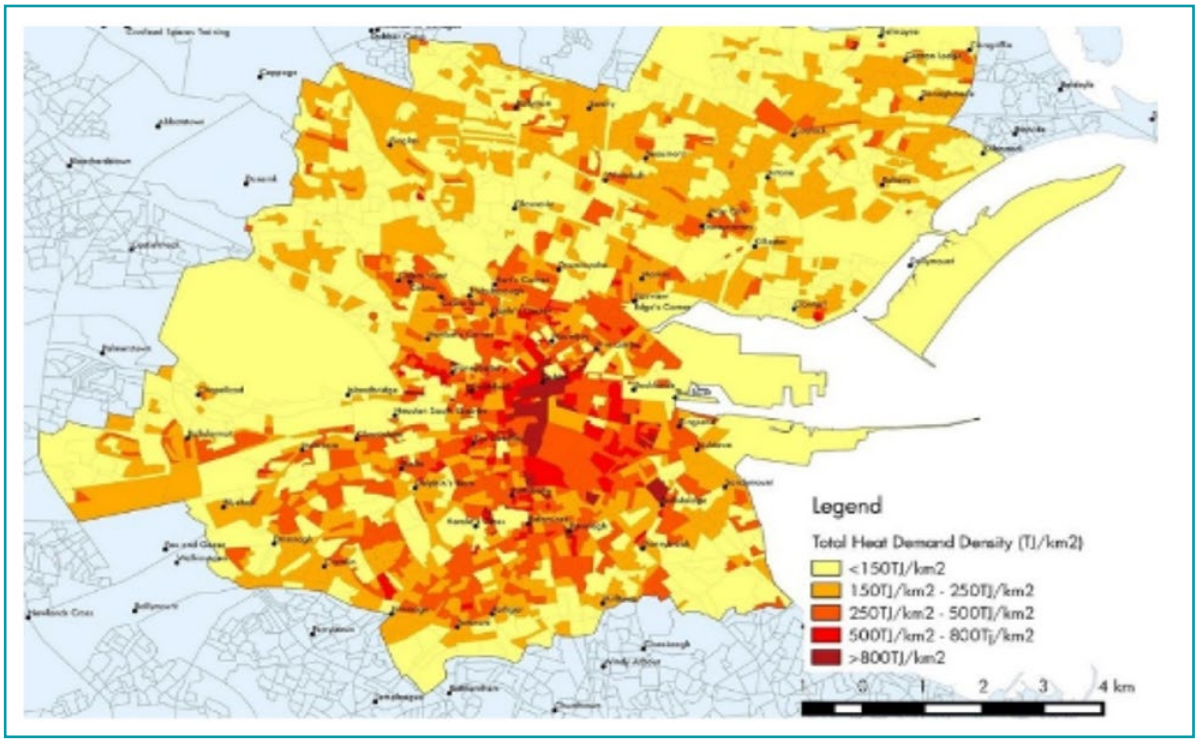
**Figure 5-15** - Carlow BEI - Example of $CO_2$ emissions by sector [33].




### 5.6.2 Dublin City spatial heat energy analysis

An innovative approach to the initial estimate of energy demand and associated emissions is the effort of Codema to map the heat demand [34]. This helps to identify clusters of high demand, which can inform the deployment of district heating and also a more strategic approach to household retrofits.

**Figure 5-16** - Dublin City Spatial Energy Demand Analysis - Heat energy demand density map [34].



# 6.0 Engagement with Planning Authorities

## 6.1 Overview of engagement process

The engagement process involved interviews with planning staff (11 no.) from a sample of seven local authorities covering the four Climate Action Regional Offices (CAROs). The interview process used an open and narrative style approach to obtain practical insights and reflections. We used one leading question and followed this with prompt questions based on the narrative content. The question was:

*"Please recount your experience, all the events and activities that have been important in the development of the most recent development plan, with emphasis on aspects addressing climate mitigation".*

We analysed the content of these interviews considering predominant topics of discussion across all interviews, as well as examined the main reference points in which these topics are discussed. In the next two sub-sections we outline the key findings that we have drawn from this engagement process which seeks to share the learning from the planning staffs' experiences and involvement in the development of CDPs.

## 6.2 Key messages

The key points outlined below offer a set of findings that are recurring themes across the interview material we collected. These represent either issues and considerations that were repeated by at least two of the eleven planners interviewed (defined as niche themes), themes repeated by three or more participants (defined as strong themes), and themes that were dominant across all the interviews.

### 6.2.1 Integration of climate action into planning

New concepts and terminologies associated with national and regional targets such as compact growth and modal shift have made it necessary for planners to include and integrate a wider set of strategies into new development plans. The need for more defined and measurable strategies is acknowledged but within a constrained environment, where some measures are seen to either fall outside the control of local authorities or presently do not sit well within a planning framework. Another level of difficulty includes managing the development plan process which involves many stages and is subject to changes giving due regard to the consultation process, SEA process and inputs from elected members. The following table provides a more detailed breakdown of key messages related to integration of climate action into planning.

**Table 6-1** - Emerging themes from the interviews on climate action integration into planning.

| CLIMATE INTEGRATION THEMES | PREVALENCE |
|---|---|
| Practical difficulties with integrating climate action objectives within the local context, circumstances, and requirements. | Dominant theme |
| The Climate Act is broad, and there is a need for more realistic and measurable top-down objectives to bridge national visions and local planning. | Strong theme |
| Provision of transport, agriculture, national building regulations among others are outside the control of local authorities and development plan objectives for these can be aspirational. | Strong theme |
| Strengthening climate change and climate mitigation considerations within the existing SEA screening process. | Strong theme |
| Good and consistent planning frameworks are also sustainable development frameworks and ensuring a balanced approach to development will support climate action and climate planning. | Niche theme |
| Climate mitigation sometimes competes with other environmental issues such as biodiversity and nature conservation, where particular interventions to encourage more walking or cycling themselves pose challenges in relation to habitat and nature conservation (e.g. greenways, siting of RE, etc). | Strong Theme |

### 6.2.2 Opportunities to strengthen climate action at local authority level

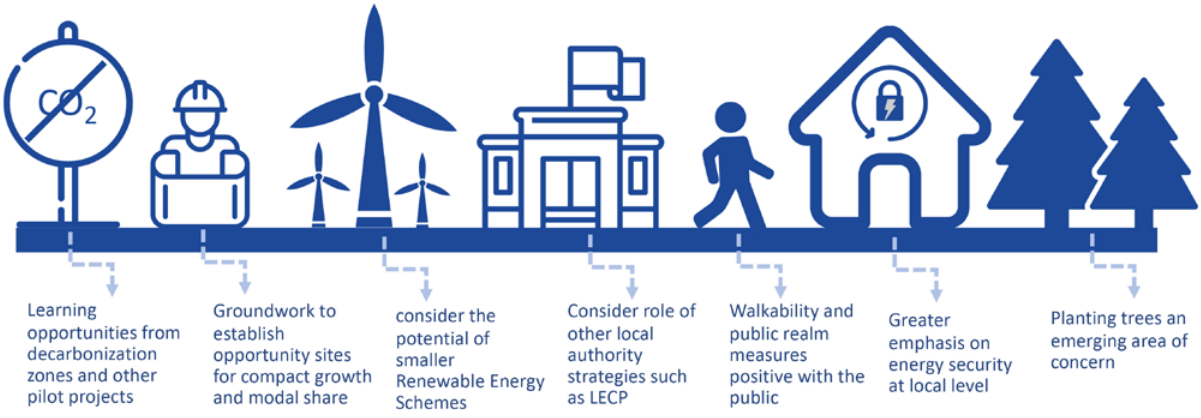
The ongoing move towards local climate action has presented local authorities with new opportunities to learn, invest, and engage with stakeholders in innovative processes. From demonstration sites and pilot studies that draw on practical guides and examples, to the consideration of new uses for areas of land and its potential to trigger new climate interventions, these new opportunities are expressed as leading to accumulated improvements in resources and the practical execution of projects.

Opportunities for urban renewal linked to European Regional Development Funds (ERDF), and opportunities to build on other local authority led strategies such as the Local Economic and Community Plan (LECP), are also advanced as areas with further scope to strengthen climate action at local authority level. The following table outlines a range of opportunities and areas of potential suggested during the interviews.

**Table 6-2** - Emerging themes from the interviews on climate action opportunities.

| OPPORTUNITY THEMES | PREVALENCE |
|---|---|
| Significant opportunities to draw lessons and practical insights from pilot initiatives such as the proposed decarbonisation zones initiatives to learn, monitor and upscale. | Dominant theme |
| Regeneration work on foot of the ERDF and RRDF. Impact of this work is well received locally. These funds also leading to expansion of teams and skill set within the local authority. | Niche theme |
| To build on public support for regeneration and walkability measures. | Niche theme |
| Developing further groundwork and fieldwork strategies conveyed as an important process in order to establish opportunity sites for compact growth and modal share (i.e., survey proximity to services, cycling, bus stops, etc.). | Niche theme |
| To consider more carefully the role and impact of other local authority led plans such as the LECP in terms of climate change measures. | Niche theme |
| To place greater emphasis on energy security at local level and to develop climate resilience through stronger local renewable energy infrastructure capabilities. | Niche theme |
| To engage with emerging areas of action and build capacities such as planting trees. | Niche theme |
| To consider the potential of smaller RES in industrial parks and other sites outside of areas already zoned for larger schemes and to welcome more opportunities for community-led proposals. | Niche theme |
| Leverage existing capabilities by scoping and mapping within each local authority current knowledge sources and capabilities and outline any essential gaps and pathways toward obtaining data. | Niche theme |
| To engage with emerging areas of action and build capacities such as planting trees, afforestation, and district heating (both in towns and in rural areas). | Niche theme |

**Figure 6-1** - Visual depiction of some key opportunities from interviews with local authorities.




### 6.2.3 Challenges to strengthen climate action at local authority level

Although all participants are keen to stress the progress achieved in applying national climate action objectives into the county and city development plans, all interviewees convey that challenges remain. These include challenges in the siting of large-scale renewable energy and wind energy sites, ensuring the implementation of objectives, responding to the fast pace of change in policy, and accurately measuring and monitoring the impact of different objectives relative to key national climate action targets. This is the area where most dominant themes emerge from the interview process, including the need to find ways to conciliate national visions and targets for climate action within the local context and bridging national decision-making structures with the local democratic process.

### 6.2.4 Reflections on long-term planning considerations

The climate action agenda requires long-term thinking, and this emerges as a consideration for planners. In the table below we offer some reflections on long-term planning issues, taking account of future trends, needs and concerns. The insights offered mainly focus on ensuring that the local planning authority has the required tools, skills and institutional set-up necessary to deliver on its role and to adequately respond to emerging issues. This is a broad thematic area that includes both practical issues such as finding steps to speed up the long-term timeline associated with the delivery of wind-energy projects, to more general considerations about equitable climate mitigation at local level. Defining more concrete pathways into the future of planning in the context of climate action is also stressed and issues include the need to re-define roles and to look for new ways to integrate national, regional and local visions of change.

**Table 6-3** - Emerging themes from the interviews on climate action challenges.

| CHALLENGE THEMES | PREVALENCE |
|---|---|
| The fast pace of change in policy and legislation sometimes makes climate action difficult to address within the development plan that follows a six-year cycle. | Dominant theme |
| Absence of more up-to-date guidelines on wind energy and renewable energy undermines effective development of measures in this area. | Dominant theme |
| Community acceptance of wind energy developments is low. | Dominant theme |
| Planning operates as a framework to *'guide'* development and there remain difficulties and obstacles in ensuring the visions proposed are taken up by local communities, developers, investors and other stakeholders. | Dominant theme |
| There are limited data sources to measure impact of different objectives on climate within the plan-making process. | Dominant theme |
| Consistency and strategic direction is needed on baseline measurements. | Dominant theme |
| Flagship climate action projects necessitate engagement with bidding processes (e.g. ERDF), which require additional time and resources. | Niche theme |
| Baseline information required is out of date and modelling tools onerous to replicate at local level. | Niche theme |
| Compact growth targets are often undermined by lack of core services in cities and towns (i.e. water treatment, public transport, schools). | Niche theme |
| There is a need to bridge NPF and local objectives (e.g., NPO54 on reducing the carbon footprint is very broad and offers insufficient direction). | Niche theme |
| Housing in rural areas is a key local issue in many communities that can be difficult to reconcile with climate action notwithstanding some sectors of society and elected members not accepting that. | Niche theme |

**Table 6-4** - Emerging themes from the interviews on long-term climate action planning.

| LONG-TERM PLANNING THEMES | PREVALENCE |
|---|---|
| While many development plans had specified renewable energy delivery targets, many grants of planning permission for renewable energy projects had not yet been commenced for a variety of reasons outside the control of the local authority. | Strong theme |
| To ensure an equitable approach, Government needs to set out what would be regarded as a fair share for each local authority to contribute to realising overall national renewable energy targets. | Strong theme |
| The expectations in relation to the development plan as a vehicle for addressing climate change need to be clearly spelled out. | Strong theme |
| The delivery of *'hard'* strategic objectives such as the development of large, centrally controlled renewable energy projects should be balanced by the introduction of complementary *'soft'* solutions, that are decentralised and focus on smaller scale projects, energy efficiencies, energy conservation and energy behaviour change. | Niche theme |
| Shared goals and objectives across different scales and sectors are key to negotiating and coordinating future climate action. Objectives need to reflect the need to consider new partnership arrangements that underline core partner responsibilities. | Niche theme |
| To comply with various evolving climate change legislation and assessments the development plan is becoming an exceptionally long document. | Strong theme |

## 6.3 Reflections from the interviews on the local authority 'journey' into climate action planning

The setting of mandatory objectives relating to climate action in local authority development plans represents a *'call to action'* by the legislature for planning authorities to develop innovative and impactful city and county development plans that play their part in wider actions on climate.

Both the National Climate Action Plan and forthcoming local authority climate actions plans will be key statutory considerations in the preparation of development plans. The development plan is seen as an important vehicle to promote change and the planning process is now tasked with translating the climate action agenda into tangible solutions.

A number of interviewees highlighted that this journey into climate action planning is important to trace in order to understand the resources, motivations and experiences driving this process. They also identified barriers encountered and described it as a demanding and cyclical strategy that involves different stages and various stakeholders.

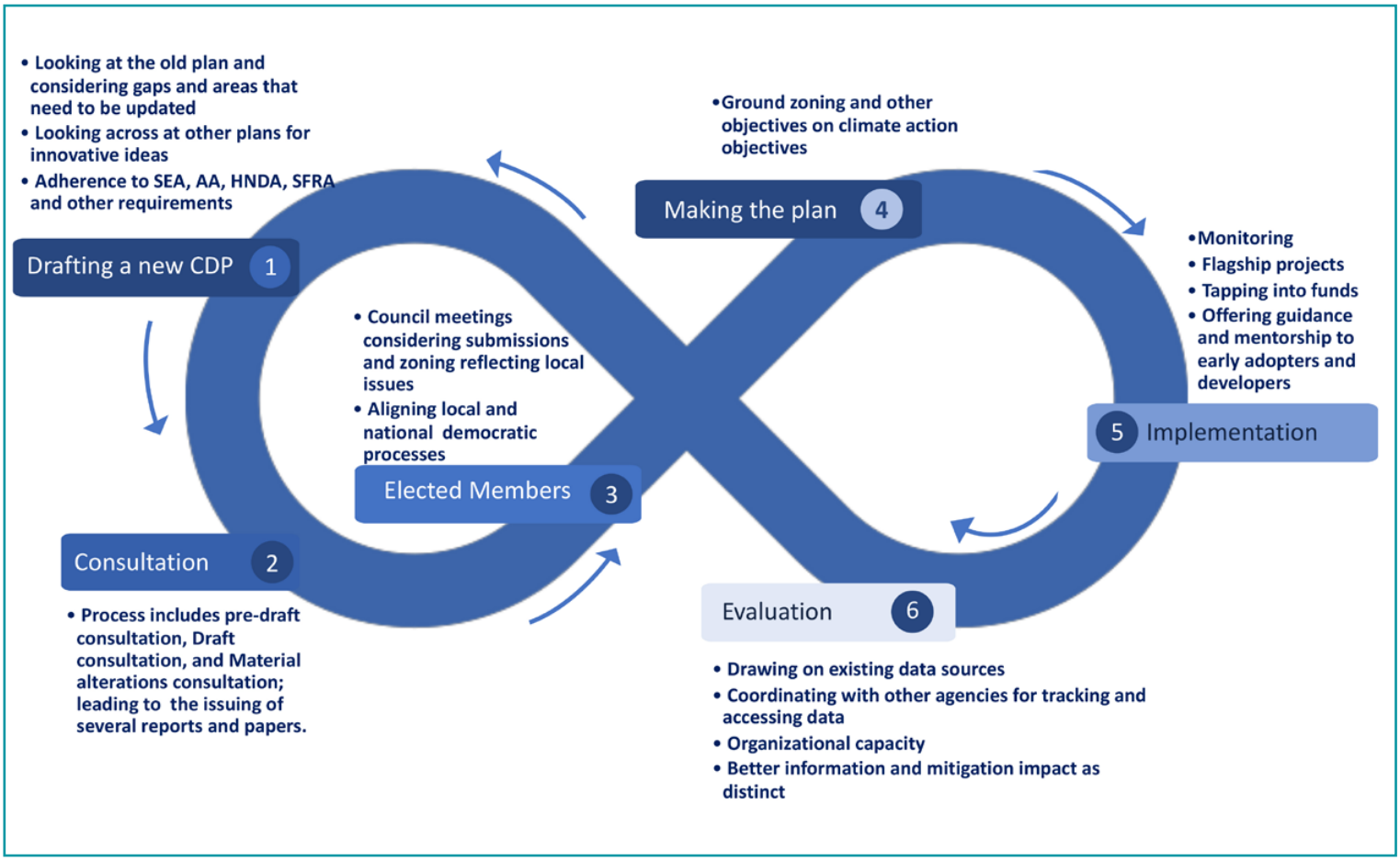
At draft stage some of these challenges include understanding emerging opportunities to become early adapters on climate mitigation, developing skills, creating a climate team with multidisciplinary capabilities, and integrating new terminologies and strategies drawing from emerging legislative requirements.

Consultation is seen as an important stage of the planning process, yet planners struggle to address many submissions that fall outside the planning context. There are positives in the consultation process, and these include identifying areas where there is robust public support such as town regeneration and active travel. Engagement with the local democratic process and with elected members is another important stage, leading to a transparent process for accounting for the needs and requirements of local communities. This also creates challenges, such as the lack of support for siting of renewable energy infrastructure and zoning for housing.

The making of the plan stage is described as a step-by-step process that requires a balanced approach to development in terms of location, layout, design, energy usage and water management. Challenges in plan-making include addressing grey areas where planning is less influential and where it requires additional follow up and cross-sectoral collaboration and partnership.

The implementation stage has its strengths in terms of flagship projects to showcase ideas, gain experience and offer practical guidance for championing innovative climate action initiatives. The evaluation stage requires robust baseline data which is difficult to obtain at local level and it requires a set of measurable objectives that can be tracked over the six-year cycle of the CDP.

**Figure 6-2** - The different stages of climate action planning in the context of the preparation of a development plan.



# 7.0 Conclusion

## 7.1 What needs to change?

### 7.1.1 The focus on 2% of local authority emissions

Up until recently, local authorities have focused a lot of their efforts on reducing the GHG emissions that they are directly responsible for, namely energy use in the local authority offices, water pumping, street lighting, local authority transport, etc. This represents typically 1%-2% of the GHG emissions in the local authority area. In order to contribute to the overall national ambition to reduce total GHG emissions by 51% by 2030, local authority climate action plans now need to more widely analyse and address total GHG emissions within the overall local authority area, identifying various pathways to reducing these emissions, whether it is through direct responsibility (e.g. social housing), indirect responsibility (e.g. planning permission) or championing (e.g. forestry). The experience of local authorities suggests that *'softer'* measures (for example cycle lanes, LED public lighting, bus stops) are easier to deliver than *'harder'* measures (for example wind farms, district heating and flood relief).

### 7.1.2 The role of development management in climate action

Approving permission for different types of developments and infrastructure can contribute significantly to emissions growth or to emissions reduction. The role of development management in climate action could be made more visible, such as checklists or comprehensive and cumulative climate impact considerations in the decision-making process. This requires further exploration to understand how it can better facilitate emissions reduction.

### 7.1.3 Renewable energy strategies narrow focus on electricity and in particular wind energy

As noted in Section 5.2, there are five blind spots in the renewable energy strategies at present.

1. With the current guidance limited to onshore wind energy, the strategies likewise tend to neglect offshore wind and solar PV as well as other options such as bioenergy, district heating and hydroelectricity.
2. There is a narrow focus on electricity, with heating and transport omitted in the vast majority of cases or simply noting national ambition in these areas. As part of this, a recurring issue was the conflation of energy and electricity within the strategies, which needs to be addressed.
3. While the vast majority provide maps of areas suitable for wind energy, there were very few examples that had identified the planned MW installs for the period of the plan or 2030.
4. There were only six cases where current energy demand and supply was outlined at the start of the strategy.
5. The renewable transport options (such as biofuels or electric vehicles) were very poorly covered despite accounting for around 40% of energy-related $CO_2$ emissions nationally [35].

### 7.1.4 Lack of measurable climate action objectives

During the research, few measurable targets were found, even in dedicated climate action chapters. For the most part, these objectives and policies only support national and regional policy or even simply restated the statutory requirements of local authorities, such as the requirement to reduce anthropogenic greenhouse gas emissions within the 2010 Planning Act.

While the setting of measurable targets is noted as an important element of good practice (Section 7.2.1), it is acknowledged that monitoring and tracking progress toward such targets is difficult. As highlighted by some of the interviewees (Section 6.2), there is a need for more clarity from a Government perspective in relation to the local authority responsibilities in meeting sectoral carbon budgets, issues around data availability and timing of its reporting. In addition, there are the political challenges that arise from the benefits of far-seeing policies being hard to see over the course of a development plan against the here-and-now pressures from vested interests that will have much stronger political traction.

### 7.1.5 Just transition

Ensuring a just transition to a climate neutral Ireland is a core strategy within the CAP. However, our high-level review confirms that, given the relative novelty of the term, less than 50% of CDPs mention just transition to date. It was found that just transition ideas are largely aspirational and where they exist, they are focused on the Midlands region where there is dedicated funding to address this.

Insights stemming from the interviews we carried out further emphasize the need for a balanced approach to development that includes an understanding of the environmental, social and economic implications of climate action at local level.

The cessation of peat harvesting in the Midlands for instance is largely experienced in terms of loss of employment for local people and commercial rates for local authorities, leading to diminished resources locally. A balanced approach in this context requires the identification of new and greener enterprise opportunities, coordination with local industry and community groups and dedicated resources in order to shape and structure new social and economic pathways for communities to thrive.

Another dominant message from the research was the need to understand the share of renewable energy uptake across the different counties.

### 7.1.6 Excluded communities

The draft **Development Plans Guidelines for Planning Authorities 2021** highlight the importance of effective stakeholder and public engagement drawing from a variety of communication and participation mechanisms in the production, as well as the buy-in of the development plan.

The guidelines emphasize the role of purposeful public consultation that leverages modern digital methods and innovative and creative ways to share insights with citizens and stakeholders, including children and youth and those who normally would not engage with the development plan process.

This call is particularly relevant in the context of climate action, as the acceleration and potential disruption of these measures may lead to added tensions and concerns with the wider public, thus raising the possibility of push-back on more climate ambitious targets.

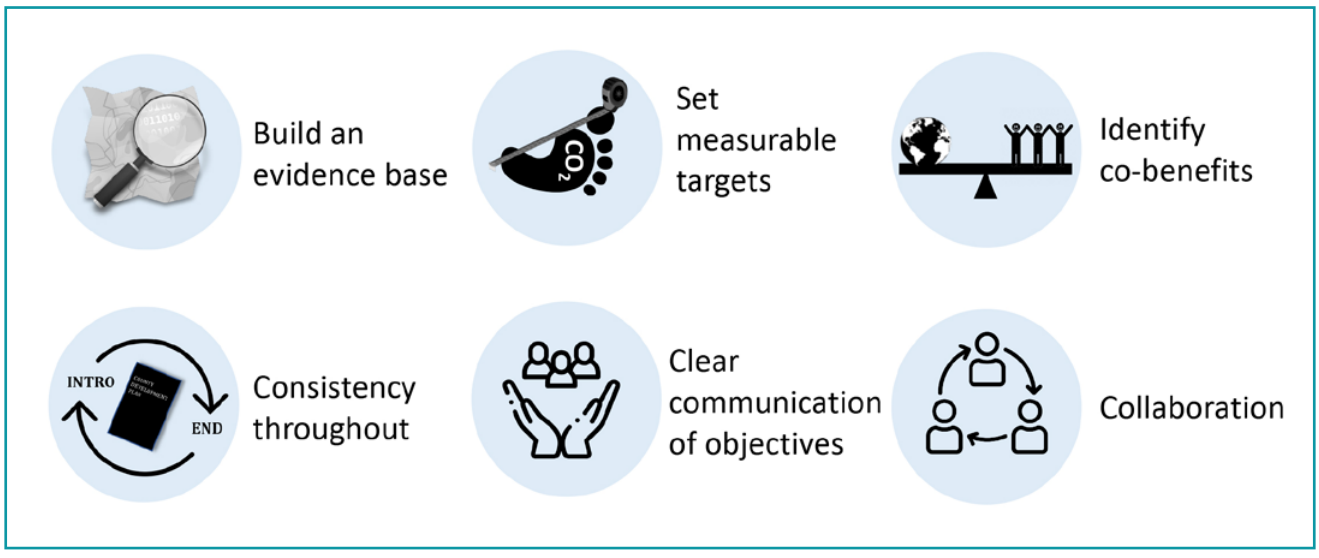
The engagement process we carried out with local authorities confirms that a relevant cohort of local communities express concern around wind energy development and the longer-term implications of high levels of one-off housing provision in areas where housing delivery in towns and villages is difficult or less preferred for a variety of reasons.

To enrich and empower the local democratic process plans must pursue well informed, transparent and measurable objectives.

We have also noted in our high-level review that the further inclusion of engagement processes into the implementation of objectives would add further strength and opportunity to follow the lifecycle of the development plan from drafting stages to implementation.

## 7.2 What has worked well to date?

The learnings from this research point to six elements of good practice. These characteristics have been identified here in relation to climate action planning but are by no means exclusive to that element of planning. They offer common elements of good practice that could be applied to any planning issue, reflecting a key point raised in Section 6, which is that good planning will by its nature support climate action planning. These six points are the basis of a checklist in Section 8.



### 7.2.1 Build an evidence-based approach

The designation of areas suitable for renewable energy, zoning decisions or public and active travel infrastructure can be locally contentious. While having a well thought out proposal may not necessarily alleviate contentions that may arise between national objectives and local needs, a good evidence base does at least help to find ways of working on it.

The mapping of areas with strong potential for renewable energy development is a particularly important role that the planning authorities can play. A lot of the difficulties to date around the placement of energy infrastructure (wind farms or overhead pylons) emanate from what could be seen as a developer led rather than a plan led renewable energy spatial planning model. When community input is limited interactions with individual planning decisions, perceptions of exclusion from key decisions and a lack of procedural fairness have been shown to lead to public distrust for projects [36].

A key element of credibility to data or figures presented is to provide a source. A recurring issue encountered within development plans reviewed was poor attribution of data sources. There were several instances where just an organisation name was cited without any report name or website address.

### 7.2.2 Set measurable targets for climate action objectives

An important element of delivering on climate action is to set measurable targets. It's the least developed area from the current review. However, target setting is vital in monitoring and tracking progress in future.

Clarke [37], provides a comprehensive review of potential key performance indicators that could be used to monitor local authority climate action. For example, in line with the zoning of brown/infill sites in Section 5.4, setting a goal for the proportion of new housing placed within a certain distance to public transport. Further examples from this review can be seen in Appendix A.3.

Within the case studies (Section 5), the most common example for setting measurable targets was to set objectives for the installation capacity of key renewable electricity technologies: onshore /offshore wind and solar PV. This can help with understanding contributions to the national targets.

Another example was in the case of compact growth to map settlement density figures to different categories of settlement type based on the scale and urban or rural nature, or for modal share to indicate a desired shift in journey shares to more active modes.

### 7.2.3 Identify co-benefits of climate action objectives

Firstly, given the recent merging of climate mitigation and adaptation into climate action within national policy and the requirement for local authority climate action plans to deal with the two together, it is useful to find interventions that can support both such as green infrastructure, tree planting or greenroofs.

Secondly, aligning social, economic, and environmental issues can help with the communication of objectives and also support implementation.

An effective policy objective needs to strike a balance between social, economic or environmental concerns or else tensions are likely to emerge with different actors prioritizing one area over the other. Moreover, with regards communication of key policy objectives, the benefits in terms of health, liveability and economic opportunities will connect with a broader audience than technical concerns such as $CO_2$ emissions or settlement density and height.

As outlined in the vast majority of development plans, the compact growth strategy in urban areas can offer a more liveable city/town for people, reduce emissions and land use, while also supporting local economic development. An important element of the Cork City example (Section 5.4.1) is to name it compact *'liveable'* growth, placing the emphasis on people's quality of life. Similarly, a number of other development plans introduce healthy placemaking as a core objective.

### 7.2.4 Coherence and consistency across CDP chapters

Climate action is treated as a cross-cutting issue referenced throughout the development plan. Briefly introducing it in the core strategy or giving it a chapter focus is meaningless if other chapters do not link back to the climate chapter or show how climate action has been a central part of the development plan.

The examples of climate audits or calling out of climate action objectives in each chapter are strong ways of fulfilling this, and as noted in Section 5.1, offer a means to meet the future requirement that development plans have regard to local authority climate action plans.

### 7.2.5 Clear communication of climate action objectives

As noted in several of the interviews, officials are concerned that development plans have become very long documents with a large number of different elements and strategies that are not conducive to being easily understood or engaged with at a wider citizen and community level, except for very local, specific or sectoral interests.

This is a major challenge the planning sector faces, in other words how to cover all the relevant issues comprehensively – as the legislative and policy context demands – and yet express concisely, simply in a way that the public understands and can relate to. As can be seen from some of the recent plans and the example below, infographics and simple narratives are amongst the tools that can be used to communicate more effectively.

**Figure 7-1** - South Dublin Development Plan (Draft 2022-2028) Benefits of District Heating.

### 7.2.6 Collaborate with national and local stakeholders

As noted earlier, the development plan sets out a vision for the county or city, but it is not just the responsibility of the relevant local authority to deliver that vision. This is well summarised within the Wicklow Draft CDP (2021-2027) Chapter on Implementation and Monitoring as follows:

*"The implementation of this plan requires the cooperation and participation of all stakeholders and Wicklow County Council will undertake a leadership role to progress and secure the implementation of the plan. In providing a leadership role, the Council will aim to foster a collaborative approach with citizens, communities, stakeholders, sectoral interests, partners, Governmental and Non-Governmental agencies, and adjoining authorities to achieve the collective support and successful implementation of the plan."* [38, p. 431]

With regards climate action, the local authority has limited influence over key emissions sectors such as agriculture, transport and existing housing. However, the local authority can play an important facilitator role in bringing relevant local and national stakeholders together. For example, coordinating community and business sector initiatives to undertake energy upgrades, or working with the National Transport Authority (NTA) to build cycling infrastructure or setup new public transport routes.

# 8.0 Guiding Principles Checklist

| 1. EVIDENCE BASE  | 2. MEASURABLE TARGETS  | 3. CO-BENEFITS  |
|---|---|---|
| Does the plan provide a strong evidence base for objectives or policies? Is this backed by clearly cited sources of data or analysis?<br><br>For Example:<br>> Does the plan include maps of areas with strong potential for renewable energy development?<br>> Has the sustainable transport strategy considered current modal shares?<br>> Has available development land from brown/ infill sites been determined? What share of population change and housing demand can this provide?<br>> Are zoning and allocation of population growth targets linked to an appropriate evidence-based approach?<br>> Are CDP policy objectives aligned with SEA environmental report assessments? | Does the plan include a set of key performance indicators and a baseline to enable monitoring and review of policies?<br><br>For Example:<br>> Modal share (%)<br>> Housing unit densities (units/ha)<br>> Reducing emissions in local authority buildings (%)<br>> Renewable energy (MW)<br>> Cycling lanes (km)<br><br>Furthermore:<br>> Do the indicators and targets correspond with the SEA to ensure synergies?<br>> Are strategies within the plan linked to monitoring measures such as clear timelines?<br>> Does the plan include demonstrable and practical measures that align with the local context? | Have the co-benefits of climate action measures been identified?<br><br>For Example:<br>> Built and cultural heritage, e.g. revitalisation and regeneration of towns and villages<br>> Social and economic development, e.g. just transition, local jobs<br>> Biodiversity, e.g. rewilding and carbon sinks<br>> Quality of life, health, and wellbeing, e.g. greenways and blueways |
| **PATHFINDER EXAMPLES** | | |
| Clare Renewable Energy Strategy (Section 5.2.1)<br><br>Dublin City spatial mapping heat demand (Section 5.6.2) | Clare Renewable Energy Strategy (Section 5.2.1)<br><br>South Dublin Modal Share (Section 5.3.1) | Cork City Compact 'Liveable' Growth<br><br>(Section 5.4.1) |

| 4. CONSISTENCY | 5. CLEAR COMMUNICATION | 6. COLLABORATION |
|---|---|---|
| Are the policies in relation to climate in the plan consistent with the Core Strategy?<br><br>For Example:<br><br>> Do the development management or design standards in the plan support the broader climate action and core strategy objectives?<br><br>> Are related sections cross-referenced within the plan to ensure internal consistency?<br><br>> Does the plan give due regard to development plans of adjoining planning authorities?<br><br>> Are plans consistent with other key national, regional, and local policies such as the NPF, CAP and the RSES? | Is the plan clear in its communication of key policies and objectives?<br><br>For Example:<br><br>> Use of maps and graphics when possible.<br><br>> Establish a clear direction and vision linked to targeted objectives and associated policies over the plan period.<br><br>> Offer a clear rationale for growth targets such as population, housing and employment.<br><br>> Draw from informative, accessible and concise definitions.<br><br>> Use clear, direct and explicit language to determine stated objectives.<br><br>> Where appropriate, offer clear steps for planning applications. | Does the plan promote engagement and collaboration with all relevant stakeholders?<br><br>For example:<br><br>> Has the plan been informed by effective / proactive consultation with stakeholders? E.g. energy providers, government agencies etc., have they made submissions or observations to the plan-making process and have those been taken into account?<br><br>> Does the plan outline co-ordination mechanisms to ensure the appropriate phasing and timely delivery of objectives and policies?<br><br>> Does the plan outline collaboration with neighbouring authorities?<br><br>> Does the plan foresee the need for new partnerships where new land use approaches are proposed (e.g. cessation of peat harvesting and rewilding of peatlands)? |
| **PATHFINDER EXAMPLES** | | |
| South Dublin Climate Audit (Section 5.1.2) | Dublin City Council Green Infrastructure | Cork City Partnership Objective |

# References


[1] Department of the Environment, Heritage and Local Government. (2010). *Planning and Development (Amendment) Act*. Retrieved 14/10/2021, from https://data.oireachtas.ie/ie/oireachtas/act/2010/30/eng/enacted/a3010.pdf.

[2] Department of the Environment, Climate and Communications. (2021). Climate Action and Low Carbon Development (Amendment) Act 2021. Retrieved 14/10/2021, from https://www.gov.ie/en/publication/984d2-climate-action-and-low-carbon-development-amendment-bill-2020/.

[3] IPCC. (2014). Annex II: Glossary [Mach, K.J., S. Planton and C. von Stechow (eds.)]. In: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)] (pp. 117-130). Geneva, Switzerland.

[4] Grist, B. (2019). Administrative and Legal Framework for Planning, pamphlet prepared for Office of the Planning Regulator. Retrieved 15/10/2021, from https://www.opr.ie/wp-content/uploads/2020/06/The-Administrative-and-Legal-Framework-for-Planning-Prepared-by-Berna-Grist-BL-for-the-OPR.pdf.

[5] Grist, B., & Macken, J. (2019). Irish Planning Law Factbook Supplement 16.

[6] Department of Local Government. (1963). *Local Government (Planning and Development) Act*.

[7] Environmental Protection Agency. (2022). SEA Legislation. Retrieved 21/01/2022, from https://www.epa.ie/our-services/monitoring--assessment/assessment/strategic-environmental-assessment/sea-legislation-/.

[8] Department of the Environment, Climate and Communications. (2021). Climate Action Plan. Retrieved 05/11/2021, from https://www.gov.ie/en/publication/6223e-climate-action-plan-2021/.

[9] Government of Ireland. (2018). Project Ireland 2040: National Planning Framework. Retrieved 14/10/2022, from: https://npf.ie/wp-content/uploads/Project-Ireland-2040-NPF.pdf

[10] Department of Housing, Local Government and Heritage (2018). *Planning and Development (Amendment) Act*. Retrieved 17/11/2021, from https://www.gov.ie/en/publication/ee542-planning-and-development-amendment-act-2018/.

[11] Department of Housing, Local Government and Heritage (2006). *Wind Energy Development Guidelines*.

[12] Department of Housing, Planning, Community and Local Government. (2017). *Interim Guidelines for Planning Authorities on Statutory Plans, Renewable Energy and Climate Change*. Retrieved 17/11/2021, from https://www.gov.ie/en/publication/5ecd0-planning-circular-letter-pl-52017-interim-guidelines-for-planning-authorities-on-statutory-plans-renewable-energy-and-climate-change-and-wind-energy-development-guidelines-2006-update-on-review/.

[13] Department of Communications, Energy and Natural Resources. (2012). Strategy for Renewable Energy 2012-2020. Retrieved 18/11/2021, from https://www.dccae.gov.ie/en-ie/news-and-media/publications/Documents/21/RenewableEnergy_Strategy2012-2020.pdf.

[14] Sustainable Energy Authority of Ireland. (2013). Methodology for Local Authority Renewable Energy Strategies. Retrieved 18/11/2021, from https://www.seai.ie/resources/publications/Methodology-for-Local-Authority-Renewable-Energy-Strategies.pdf.

[15] European Commision. (2012). *27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC*.

[16] Sustainable Energy Authority of Ireland. (2021). Public Sector Monitoring and Reporting System. Retrieved 17/11/2021, from https://www.seai.ie/business-and-public-sector/public-sector/monitoring-and-reporting/.

[17] Department Environment, Community and Local Government. (2015). *Climate Action and Low Carbon Development*.

[18] Department of Communications, Climate Action and Environment. (2018). *Local Authority Adaptation Strategy Development Guidelines*.

[19] Department of Communications, Climate Action and the Environment. (2019). Climate Action Plan. Retrieved 14/10/2021, from https://www.dccae.gov.ie/en-ie/climate-action/publications/Documents/16/Climate_Action_Plan_2019.pdf.

[20] Department of the Environment, Climate and Communications. (2021). Climate Conversation- Climate Action Plan 2021. Retrieved 14/10/2021, from https://climateconversations.citizenspace.com/decc/climateactionplan2021/.

[21] Department of the Environment, Climate and Communications (2021). Minister Ryan announces €60 million for community climate action projects across Ireland and the launch of a new National Dialogue on Climate Action from COP26 [Press release]. Retrieved 11/11/2021, from https://www.gov.ie/en/press-release/ea869-minister-ryan-announces-60-million-for-community-climate-action-projects-across-ireland-and-the-launch-of-a-new-national-dialogue-on-climate-action-from-cop26/.

[22] Environmental Protection Agency. (2021). Ireland's Greenhouse Gas Emissions Projections 2020-2040.

[23] Intergovernmental Panel on Climate Change. (2018). Special Report: Global Warming of 1.5 °C. Retrieved 13/10/2021, from https://www.ipcc.ch/sr15/.

[24] Department of Transport. (2009). Ireland's First National Cycle Policy Framework.

[25] Department of Environment, Community and Local Government. (2015). Urban Regeneration and Housing Act 2015. from https://data.oireachtas.ie/ie/oireachtas/act/2015/33/eng/enacted/a3315.pdf.

[26] European Commission. (2021). Covenant of Mayors for Cliamte and Energy. Retrieved 03/12/2021, from https://www.covenantofmayors.eu/.

[27] European Commission, The Covenant of Mayors. (2010). How to develop a Sustainable Energy Action Plan Part 2; Baseline emissions inventory. Retrieved 03/12/2021, from https://www.covenantofmayors.eu/IMG/pdf/SEAP_guidebook_Part_II.pdf.

[28] European Commission, The Covenant of Mayors. (2010). How to develop a Sustainable Energy Action Plan Part 1. Retrieved 03/12/2021, from https://www.eumayors.eu/IMG/pdf/seap_guidelines_en.pdf.

[29] Joint Research Centre (European Commission). (2018). Guidebook 'How to develop a Sustainable Energy and Climate Action Plan (SECAP)' . Part 1, The SECAP process, step-by-step towards low carbon and climate resilient cities by 2030. Retrieved 03/12/2021, from https://op.europa.eu/en/publication-detail/-/publication/338a9918-f132-11e8-9982-01aa75ed71a1/language-en.

[30] Covenant of Mayors. (2021). Plans & Actions. Retrieved 02/12/2021, from https://www.covenantofmayors.eu/plans-and-actions/action-plans.html.

[31] Codema. (2017). Developing CO2 Baselines; A step-by-step guide for your local authority. Retrieved 02/12/2021, from https://www.codema.ie/images/uploads/docs/Developing_CO2_Baseline_-_A_Step-by-Step_Guide_for_your_Local_Authority.pdf.

[32] Dublin City Council. (2021). Dublin City Development Plan: Draft Plan Written Statement Volume 1. Retrieved 02/12/2021, from https://www.dublincity.ie/sites/default/files/2021-12/volume-1-draft-dublin-city-development-plan-2022-2028-low-res.pdf.

[33] 3 Counties Energy Agency (3CEA). (2017). Energyhub – Emissions and Energy Data Observatory. Retrieved 02/12/2021, from https://www.energyhub.ie/.

[34] Codema. (2015). Dublin City Spatial Energy Demand Analysis.

[35] Sustainable Energy Authority of Ireland. (2021). National Energy Balance. Retrieved 03/12/2021, from https://www.seai.ie/data-and-insights/seai-statistics/key-publications/national-energy-balance/.

[36] Knudsen, J. K., Wold, L. C., Aas, Ø., Haug, J.J., Batel, S., Devine-Wright, P., Qvenild, M., Jacobsen, G.B. (2015). Local perceptions of opportunities for engagement and procedural justice in electricity transmission grid projects in Norway and the UK. *Land Use Policy, 48*, 299-308.

[37] Clarke, D. (2021). Local Government Climate Action Key Performance Indicators Literature Review. Local Government Management Agency Research.

[38] Wicklow County Council. (2020). Draft Wicklow County Development Plan 2021-2027. Retrieved 02/12/2021, from https://consult.wicklow.ie/ga/consultation/draft-wicklow-county-development-plan-2021-2027.

[39] McGookin, C., Gallachóir, B. Ó., & Byrne, E. (2021). An innovative approach for estimating energy demand and supply to inform local energy transitions. *Energy*, 120731.

[40] Weinand, J., Ried, S., Kleinebrahm, M., McKenna, R., & Fichtner, W. (2020). Identification of potential off-grid municipalities with 100% renewable energy supply: Working Paper Series in Production and Energy.

[41] Silveria, F. C., & Luken, R. A. (2008). Global overview of industrial energy intensity. *Energy Policy, 36*(7), 2658-2664.

[42] 3 Counties Energy Agency 3CEA. (2017). Kilkenny Sustainable Energy Action Plan 2016-2020. Retrieved 02/12/2021, from https://www.kilkennycoco.ie/eng/Your_Council/Council_Meetings/Kilkenny_County_Council_Ordinary_Meetings/2017-Council-Meetings/Sustainable-Energy-Action-Plan-2016-2020.pdf.

[43] Tipperary Energy Agency. (2017). Tipperary Sustainable Energy Action Plan 2017-2020. Retrieved 02/12/2021, from https://www.tipperarycoco.ie/sites/default/files/Publications/Tipperary%20Sustainable%20Energy%20Action%20Plan%202017-2020.pdf.

[44] Carlow County Council. (2015). County Development Plan 2015-2021. Retrieved 02/12/2021, from http://www.carlow.ie/wp-content/documents/uploads/carlow-county-dev-plan-2015-2021.pdf.

[45] Kerry County Council. (2013). Sustainable Energy Action Plan; 2012 - 2020.

[46] Limerick Clare Energy Agency. (2012). Limerick Clare Energy and Emissions Balance 2010 and 2020. Retrieved 02/12/2021, from http://vbn.aau.dk/files/196903229/Energy_and_Emissions_Balance.pdf.

[47] bioregions.eu. (2012). Westmeath Community Development; Bioenergy Action Plan.

[48] Codema. (2010). Dublin City Sustainable Energy Action Plan 2010 - 2020. Retrieved 02/12/2021, from http://www.codema.ie/images/uploads/docs/Dublin_City_Sustainable_Energy_Action_Plan_2010-2020.pdf.

[49] South West Regional Authority. (2009). South West Bioenergy Plan 2009 - 2020. Retrieved 02/12/2021, from https://slideblast.com/south-west-regional-authority-south-west-bioenergy-plan-2009_5965b7a61723dde94f7a1ff3.html.

[50] Lynch, A. W. P. (2008). Mayo Energy Audit - A preliminary assessment of a rural county's chances of surviving Peak Oil. Retrieved 02/12/2021, from http://www.mayococo.ie/en/Planning/MayoCountyDevelopmentPlan2014-2020/Document3,24887,en.pdf .

[51] Codema. (2016). South Dublin Baseline Emissions Report. Retrieved 02/12/2021, from https://www.codema.ie/images/uploads/docs/South_Dublin_Baseline_Report.pdf.

# Appendix

## A.1 Identifying elements of good practice

**Table A.1.1** - Integrating Climate Action into the CDP.

| Development Plan | Period | Climate Action chapter | | Table on Climate Action integration | Specific policies / objectives for the LA |
|---|---|---|---|---|---|
| | | Incl. | No. | | |
| Leitrim | 2015-2021 | ✗ | | ✗ | ✗ |
| Clare | 2017-2023 | ✓ | 18 | ✗ | ✗ |
| Donegal | | ✗ | | ✗ | ✗ |
| Fingal | | ✗ | | ✗ | ✗ |
| Kildare | | ✗ | | ✗ | ✗ |
| **Laois** | | ✓ | 3 | ✓ | ✓ |
| Sligo | | ✗ | | ✗ | ✗ |
| Galway City | | ✗ | | ✗ | ✗ |
| Monaghan | 2019-2025 | ✓ | 8 | ✗ | ✗ |
| Meath | | ✓ | 10 | ✓ | ✗ |
| Kilkenny | | ✓ | 2 | ✗ | ✓ |
| Longford | | ✓ | 3 | ✓ | ✗ |
| **Louth** | | ✓ | 12 | ✓ | ✓ |
| Mayo | | ✓ | 11 | ✓ | ✓ |
| Offaly | 2021-2027 | ✓ | 3 | ✗ | ✓ |
| Roscommon | | ✓ | 8 | ✓ | ✗ |
| Westmeath | | ✓ | 11 | ✓ | ✓ |
| Wexford | | ✓ | 2 | ✗ | ✗ |
| Wicklow | | ✗ | | ✓ | ✗ |
| Carlow* | | ✓ | 7 | ✓ | ✗ |
| Cavan* | | ✓ | 5 | ✓ | ✗ |
| Cork City* | | ✓ | 5 | ✓ | ✗ |
| Cork County* | | ✓ | 17 | ✗ | ✗ |
| Dún Laoghaire-Rathdown* | | ✓ | 3 | ✓ | ✓ |
| Dublin City* | | ✓ | 3 | ✗ | ✓ |
| Galway County* | | ✓ | 14 | ✓ | ✗ |
| Kerry* | | ✓ | 2 | ✗ | ✗ |
| Limerick* | | ✓ | 8 | ✓ | ✗ |
| **South Dublin*** | | ✓ | 1 | ✓ | ✓ |
| Tipperary* | | ✓ | 3 | ✓ | ✗ |
| Waterford* | | ✓ | 9 | ✗ | ✗ |

*indicates that this was a draft plan at the time of writing.

**Table A.1.2** - Renewable Energy Strategy.

| Development Plan | Current Energy Balance | | Mapping | | | | | | | | | | Electricity | | | Heat | | | Transport | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Incl. | Source | Current / planned developments | Onshore Wind | Offshore Wind | Solar | Hydro | Geothermal | Bioenergy | Ocean energy | Supporting infrastructure | Heat Demand | Technologies other than wind energy | Resource potential identified | Quantified targets | Incl. | Resource potential identified | Quantified targets | Incl. | Resource potential identified | Quantified targets |
| **Carlow*** | ✓ | ✗ | | ✓ | | ✓ | | ✓ | | | | | ✓ | ✓ | ✓ | ✓ | ✗ | ✓ | ✓ | ✗ | ✓ |
| Cavan* | No RES | | | | | | | | | | | | | | | | | | | | |
| **Clare** | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| Cork City* | No RES | | | | | | | | | | | | | | | | | | | | |
| Cork County* | ✓ | | ✓ | ✓ | | | | | | | | | ✓ | ✓ | ✗ | ✓ | ✗ | ✗ | ✓ | ✗ | ✗ |
| Dún Laoghaire-Rathdown* | ✓ | | | ✓ | | | | | | | ✓ | | ✗ | | | ✗ | | | ✗ | | |
| Donegal | ✓ | | | ✓ | | | | | | | | | ✗ | | | | | | | | |
| Dublin City* | No RES | | | | | | | | | | | | | | | | | | | | |
| Fingal | ✓ | | | ✓ | | | | | | | ✓ | | ✗ | | | | | | | | |
| Galway City | No RES | | | | | | | | | | | | | | | | | | | | |
| Galway County* | ✓ | | ✓ | ✓ | | ✓ | | | | | | | ✓ | ✓ | ✓ | ✗ | | | ✗ | | |
| Kerry* | ✓ | | | ✓ | | | | | | | ✓ | | ✓ | ✗ | ✗ | ✓ | ✗ | ✗ | ✓ | ✗ | ✗ |
| Kildare | ✓ | | | | | | | | | | | | ✓ | ✗ | ✗ | ✓ | ✗ | | ✗ | | |
| Kilkenny | ✓ | ✓ | | ✓ | | | ✓ | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ✓ | ✓ | ✗ |
| Laois | ✓ | | ✓ | ✓ | | | | | | | | | ✓ | ✓ | ✗ | ✗ | | | ✗ | | |
| Leitrim | No RES | | | | | | | | | | | | | | | | | | | | |
| Limerick* | ✓ | | | ✓ | | | | | | | | | | | | | | | | | |
| Longford | ✓ | | | ✓ | | | | | | | | | ✗ | ✗ | ✗ | ✗ | | | ✗ | | |
| Louth | ✓ | | | ✓ | | | | | | | | | ✓ | ✗ | ✗ | ✓ | ✗ | | ✓ | ✗ | |
| Mayo | ✓ | | | ✓ | | | | ✓ | ✓ | ✓ | | | ✓ | ✗ | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Meath | ✓ | | | | | | | | ✓ | | | | ✓ | ✗ | ✗ | ✓ | ✗ | ✗ | ✓ | ✗ | ✗ |
| Monaghan | | | | | | | | | | | | | | | | | | | | | |
| Offaly | ✓ | | | ✓ | | | | | | | | | ✗ | ✓ | ✗ | ✗ | | | ✗ | | |
| Roscommon | | | | ✓ | | | | | ✓ | | | | ✓ | ✓ | ✗ | ✓ | ✗ | ✗ | ✗ | | |
| Sligo | No RES | | | | | | | | | | | | | | | | | | | | |
| South Dublin* | ✓ | ✗ | | ✓ | | | | | | | | | ✓ | ✗ | ✓ | ✓ | ✓ | ✓ | | | |
| Tipperary* | ✓ | | ✓ | ✓ | | | ✓ | | ✓ | | ✓ | | ✓ | ✓ | | ✓ | ✗ | ✗ | ✓ | ✗ | ✗ |
| **Waterford*** | ✓ | | | ✓ | ✓ | | | | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| Westmeath | ✓ | | ✗ | | | | | | | | | | ✓ | ✗ | ✗ | ✓ | ✗ | ✗ | | | |
| **Wexford** | ✓ | ✗ | ✓ | ✓ | | ✓ | | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ✓ | ✗ | ✗ |
| Wicklow | ✓ | | | ✓ | | | | | | | | | ✗ | ✗ | ✗ | ✗ | | | ✗ | | |

*indicates that this was a draft plan at the time of writing.

**Table A.1.3** - Modal share.

| Development Plan | Transport or Mobility Chapter | | Current modal share | Modal share targets | Mapping of sustainable travel opportunities | | | Specific projects listed |
|---|---|---|---|---|---|---|---|---|
| | incl. | no. | | | Public transport | Active travel | Recreational (walking trails or greenways) | |
| Carlow* | ✓ | 5 | ✓ | ✗ | ✓ | ✓ | ✓ | ✓ |
| Cavan* | ✗ | | ✗ | ✗ | ✓ | ✓ | ✓ | ✓ |
| Clare | ✗ | | ✗ | ✗ | ✓ | ✓ | ✓ | ✗ |
| **Cork City*** | ✓ | **4** | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Cork County* | ✓ | 12 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Dún Laoghaire-Rathdown* | ✓ | 5 | ✗ | ✗ | ✓ | | | ✓ |
| Donegal | ✗ | | ✗ | ✗ | ✓ | ✓ | ✓ | ✗ |
| **Dublin City*** | ✓ | **8** | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Fingal | ✗ | | ✗ | ✗ | ✓ | ✓ | ✓ | ✗ |
| Galway City | ✓ | 3 | ✓ | ✗ | ✓ | ✓ | | ✗ |
| Galway County* | ✓ | 6 | ✗ | ✗ | ✓ | | | ✗ |
| Kerry* | ✓ | 14 | ✓ | ✗ | | | ✓ | ✗ |
| Kildare | ✓ | 6 | ✓ | ✗ | | | | ✗ |
| Kilkenny | ✓ | 14 | ✓ | ✓ | | | | ✓ |
| Laois | ✗ | | ✗ | ✗ | | ✓ | ✓ | ✗ |
| Leitrim | ✗ | | ✗ | ✗ | | | | ✗ |
| Limerick* | ✓ | 6 | ✓ | ✓ | | | | ✗ |
| Longford | ✗ | | ✗ | ✗ | | | | ✗ |
| Louth | ✓ | 7 | ✓ | ✗ | | | ✓ | ✗ |
| Mayo | ✓ | 6 | ✓ | ✗ | | | ✓ | ✓ |
| Meath | ✓ | 5 | ✓ | ✗ | ✓ | | | ✗ |
| Monaghan | ✗ | | ✗ | ✗ | | | ✓ | ✗ |
| Offaly | ✓ | 8 | ✓ | ✗ | | | | ✗ |
| Roscommon | ✗ | | ✗ | ✗ | | | | ✗ |
| Sligo | ✓ | 8 | ✗ | ✗ | | | | ✓ |
| **South Dublin*** | ✓ | **7** | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Tipperary* | ✓ | 12 | ✓ | ✓ | | | | ✗ |
| Waterford* | ✓ | 5 | ✓ | ✓ | | | | ✗ |
| Westmeath | ✗ | | ✗ | ✗ | | | | ✗ |
| Wexford | ✓ | 8 | ✓ | ✓ | | | | ✗ |
| Wicklow | ✓ | 12 | ✗ | ✗ | | | | ✗ |

*indicates that this was a draft plan at the time of writing.

**Table A.1.4** - Compact growth.

| Development Plan | Period | Measurable target for brown / infill sites | | Core Strategy / Settlement Hierarchy | | | | | | | Co-benefits identified |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | incl. | >NPF | Current housing stock | Projected housing demand | Required zoned land | Share covered by brown/infill sites | Density | Reference Vacant Sites Register | Sustainable transport | |
| Leitrim | 2015-2021 | ✗ | | ✓ | ✓ | ✓ | ✓ | | | | ✓ |
| Clare | 2017-2023 | ✗ | | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ |
| Donegal | | ✗ | | ✓ | ✓ | ✓ | ✓ | | | | |
| Fingal | | ✗ | | ✓ | ✓ | ✓ | ✓ | | | | ✓ |
| Kildare | | ✗ | | ✓ | ✓ | ✓ | ✓ | | | | ✓ |
| Laois | | ✗ | | ✓ | ✓ | ✓ | ✓ | | | | ✓ |
| Sligo | | ✗ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Galway City | | ✗ | | ✓ | ✓ | ✓ | ✓ | | | | ✓ |
| Monaghan | 2019-2025 | ✗ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Meath | 2021-2027 | ✓ | | ✓ | ✓ | ✓ | ✓ | | ✓ | | ✓ |
| Kilkenny | | ✓ | ✗ | ✓ | ✓ | ✓ | | | | | ✓ |
| Longford | | ✓ | | ✓ | ✓ | ✓ | ✓ | | | | ✓ |
| Louth | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ |
| Mayo | | ✓ | | ✓ | ✓ | ✓ | ✓ | | | | ✓ |
| Offaly | | ✓ | | ✓ | ✓ | ✓ | ✓ | | | | ✓ |
| **Roscommon** | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ |
| Westmeath | | ✓ | | ✓ | ✓ | ✓ | ✓ | | | | ✓ |
| Wexford | | ✓ | | ✓ | ✓ | ✓ | ✓ | | | | ✓ |
| Wicklow | | ✓ | | ✓ | ✓ | ✓ | ✓ | | | | ✓ |
| Carlow* | 2022-2028 | ✓ | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Cavan* | | ✓ | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| **Cork City*** | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Cork County* | | ✓ | ✗ | ✓ | ✓ | ✓ | ✓ | | | | |
| Dún Laoghaire-Rathdown* | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ |
| Dublin City* | | ✓ | | ✓ | ✓ | | | | | | ✓ |
| Galway County* | | ✓ | ✗ | ✓ | ✓ | ✓ | ✓ | | | | ✓ |
| Kerry* | | ✓ | ✗ | ✓ | ✓ | ✓ | ✓ | | | | ✓ |
| Limerick* | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| South Dublin* | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Tipperary* | | ✓ | | ✓ | ✓ | ✓ | ✓ | | | | ✓ |
| Waterford* | | ✓ | | ✓ | ✓ | ✓ | ✓ | | | | ✓ |

*indicates that this was a draft plan at the time of writing.

**Table A.1.5** - Development Management.

| Development Plan | Dedicated chapter | Green infrastructure | Energy / Climate Report | | Cycling spaces | Renewables | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Commercial | Residential | | Solar | Hydro | Bioenergy | District heating | Geothermal |
| Carlow* | ✓ | ✓ | >1,000m² | >30 | ✓ | ✓ | | | | |
| Cavan* | ✓ | ✓ | | | | | | | | |
| Clare | Appendix | ✓ | | | ✓ | | ✓ | | | |
| Cork City* | ✗ | ✓ | | | | | | | | |
| Cork County* | ✗ | ✓ | | | | ✓ | ✓ | ✓ | ✓ | |
| Dún Laoghaire-Rathdown* | ✓ | ✓ | >1,000m² | >30 | ✓ | ✓ | | | | |
| Donegal | ✗ | | | | | | | | | |
| **Dublin City*** | **✓** | **✓** | **>1,000m2** | **>30** | **✓** | | | | **✓** | |
| Fingal | ✓ | ✓ | >1,000m² | >30 | ✓ | | | | | |
| Galway City | ✓ | ✓ | | | ✓ | | | | | |
| Galway County* | ✓ | | >1,000m² | >10 | ✓ | ✓ | | | | |
| Kerry* | Appendix | ✓ | | | | ✓ | | | | |
| Kildare | ✓ | | | | | | | | | |
| Kilkenny | ✗ | ✓ | | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Laois | ✗ | | | | ✓ | | | | | |
| Leitrim | ✗ | | | | | | | | | |
| Limerick* | ✓ | ✓ | >1,000m² | >30 | ✓ | ✓ | | ✓ | ✓ | |
| Longford | ✓ | | | | ✓ | ✓ | | | | |
| Louth | ✓ | ✓ | | | ✓ | ✓ | | | | |
| Mayo | Appendix | ✓ | | | ✓ | ✓ | | | | |
| Meath | ✓ | ✓ | | | ✓ | ✓ | | ✓ | | |
| Monaghan | ✓ | ✓ | | | | ✓ | ✓ | ✓ | | ✓ |
| Offaly | ✓ | ✓ | >1,000m² | >10 | ✓ | ✓ | | | | |
| Roscommon | ✓ | | | | ✓ | ✓ | ✓ | ✓ | | |
| Sligo | ✓ | ✓ | | | ✓ | | | | | |
| South Dublin* | ✗ | ✓ | >3,000m² | >20 | ✓ | | | | | |
| Tipperary* | Appendix | | >1,000m² | >10 | ✓ | | ✓ | ✓ | ✓ | |
| Waterford* | Appendix | ✓ | | | | | | | | |
| Westmeath | ✓ | ✓ | | | | ✓ | | | | |
| **Wexford** | **✗** | **✓** | | | | **✓** | | **✓** | | |
| Wicklow | Appendix | ✓ | | | ✓ | | | | | |

*indicates that this was a draft plan at the time of writing.

## A.2 Summary of previous baseline emission inventories

The approaches for estimating GHG emissions can generally be classified as either top-down or bottom-up [39]. Firstly, a bottom-up approach involves building an aggregate model of energy demand based on energy benchmarks such as energy per metre squared of different building types and local statistics such as the total floor area of a building type. For example:

**energy benchmark x regional statistics = regional energy demand**

**average kWh / m² x average m² x No. of dwellings (per age group) = residential energy demand**

**residential energy demand x fuel share x emission factor = residential emissions**

Secondly, in the absence of the data necessary for a bottom-up approach, a top-down approach may be used. This involves proportioning (or downscaling) national energy data based on local statistics. It is based on the assumption that the energy demand will correspond to socio-economic drivers [40]. For example:

**regional share x national energy demand = regional energy demand**

$$\frac{\text{regional indicator}}{\text{national indicator}} \times \text{national energy demand} = \text{regional energy demand}$$

**% share of population x national energy demand = regional energy demand**

As can be seen in Table A.2.1, there are a number of different methods used but some common indicators emerge:

- Agriculture - Proportioning the national energy balance based on the hectares of land being farmed in the region was the most frequently used method. Notably, all of the reports did not account for energy demand from fishing or forestery, which are included under agriculture in the national energy balance [35].
- Industry - Proportioning the national energy balance based on the number of employees in the region was the most frequently used method. Surprisingly none of the estimates used gross value added which is generally used to classify industrial energy intensity [41].
- Residential - Determining a building profile from Building Energy Rating (BER) database based on age / type of house and then applying to regions housing stock was the most commonly used method. The use of building age and size along with expected energy demand per metre square is widely supported across the literature [39].
- Commercial Services - As with the industry estimates, proportioning the national energy balance based on the number of employees in the region was the most frequently used method.

- Public Services - Taken from the national database for reporting / monitoring.
- Transport - Proportioning the national energy balance based on the number of vehicles registered in the region was the most frequently used method. However, in the case of Limerick / Clare and Tipperary only the private car fleet was accounted for, all other transport demand was neglected. Passenger kms would be considered a more accurate measure but in Ireland the absense of data on this below national level is a notable gap.

The bottom-up approach taken by Codema for the four Dublin LAs is summarized in Table A.2.2.

**Table A.2.1** - Indicators used in each sector for the top-down approach.

| Report | Industry | Agriculture | Residential | Services | | Transport |
|---|---|---|---|---|---|---|
| | | | | Commercial | Public | |
| Kilkenny [42] | Population | Land area usage | BU* | Population | Data from SEAI M&R | Vehicles |
| Tipperary [43] | Employees | Land area usage | Number of households | Employees | NA | Cars |
| Carlow [44] | Population | Land area usage | Households | Population | | Public transport based on population; rest based on number of vehicles |
| Kerry [45] | Fuel spending | Land area usage | BU* | BU* | Data from SEAI M&R | Vehicles |
| Limerick / Clare [46] | Employees | Land area usage | Households | Employees | | Cars |
| Westmeath [47] | Employees | Land area usage | Households | Employees | | Vehicles |
| Dublin City [48] | Employees | NA | BU* | Employees | | Vehicles |
| South West [49] | Employees | Land area usage | Households | Employees | | Vehicles |
| Mayo [50] | Employees | Employees | Population | Employees | | Population |

*Bottom-up approach with building stock model.

**Table A.2.2** - Approaches for doing a bottom-up estimate.

| Report | Sector | Method |
|---|---|---|
| South Dublin Baseline Emissions Report 2016 [51] | Agriculture | Land area usage combined with standard agricultural energy use benchmarks |
| | Industry & Services | UK CIBSE Guide F: Energy Efficiency and TM46 combined with commercial properties and their respective floor areas |
| | Residential | Number of dwellings by type and age aggregated using the Building Energy Rating (BER) |
| | Transport | National Transport Authority Regional Modelling System (RMS) |

# A.3 Key Performance Indicators for the Local Government Sector

**Table A.3** - Climate Mitigation Key Performance Indicators (KPIs) for the Local Government Sector (adapted from KPI list Identified by Clarke 2021 [37].

| SUB CATEGORY | KPI | KPI UNIT | TIMEFRAME* | MUNICIPAL INFORMATION SOURCES |
|---|---|---|---|---|
| Energy | Proportion of local authority energy self-sufficiency based on renewable energy | % | L | City of Copenhagen, 2012; City of Stockholm, 2016; Ajuntament de Barcelona, 2020; City of Amsterdam, 2020; Dorset Council, 2020; City of Sydney, 2021 |
| Energy | Cumulative percentage energy savings achieved by year-end relative to baseline year | % | S | City of Copenhagen, 2012; City of Stockholm, 2016 |
| Energy | Percentage in energy cost (€) savings annually (from baseline year) | % | S | City of Copenhagen, 2012 |
| Energy | Proportion of local authority municipal buildings with a BER 'B' rating | % | S | City of Copenhagen, 2012; City of Amsterdam, 2020 |
| Housing | Proportion of local authority social housing stock with a BER 'B2' rating | % | S | Ajuntament de Barcelona, 2020; City of Amsterdam, 2020; City of Vancouver, 2020 |
| GHG emissions | Annual GHG emissions in carbon dioxide ($CO_2$) equivalent, including Scope 1, 2 and 3 emissions | Metric tonnes | M | City of Stockholm, 2016; Ajuntament de Barcelona, 2020; City of Amsterdam, 2020; City of Vancouver, 2020; City of Sydney, 2021 |
| GHG emissions | Cumulative percentage GHG emission reductions achieved relative to baseline year | % | M | City of Stockholm, 2016; City of Amsterdam, 2020; City of Vancouver, 2020; City of Sydney, 2021 |
| GHG emissions | Annual reduction in GHG emissions across social housing | % | L | City of Copenhagen, 2012; City of Amsterdam, 2020; City of Vancouver, 2020 |
| Planning | Percentage of population within x kilometres of local authority installed EV charging facilities | % | M | City of Vancouver, 2020 |

| SUB CATEGORY | KPI | KPI UNIT | TIMEFRAME* | MUNICIPAL INFORMATION SOURCES |
|---|---|---|---|---|
| Planning | Percentage of population within x kilometres of local authority installed EV charging facilities | % | M | City of Vancouver, 2020 |
| Planning | Percentage of parking permits issued without fossil fuel surcharge | % | S | City of Vancouver, 2020; Dorset Council, 2020 |
| Transportation | Kilometres of permanent segregated cycling network | Kilometres | S | City of Vancouver, 2020; Dorset Council, 2020 |
| Transportation | Number of dedicated bicycle parking facilities | Numeric value | M | Dorset Council, 2020 |
| Public engagement | Percentage of local authority citizens who support switch to renewable energies (questionnaire) | % | L | City of Amsterdam, 2020 |
| Public engagement | Total number of energy consultations undertaken by energy advisors in local authorities | Numeric value | M | City of Amsterdam, 2020; Dorset Council, 2020 |
| Public engagement | Number of local authority climate trainings/ community events delivered promoting mitigation actions related to carbon emission reductions | Numeric value | M | C40 Cities, 2019; City of Vancouver, 2020; Dorset Council, 2020; Evans, 2020 |
| Environment | Tree species percentage breakdown for new trees planted for each of the following: plant family (<40%), genus (<30%) and species (<10%) | % | L | C40 Cities, 2019; Dorset Council, 2020; City of Sydney, 2021 |
| Climate justice | Percentage of low-income households (social housing recipients) whereby more than 10% of household income is spent on energy | % | L | Ajuntament de Barcelona, 2020; City of Amsterdam, 2020 |

*Short term (S) <1 year; Medium term (M) 1-3 years; Long term (L) 3+ years.



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