



# Energy

## Vision

Deliver a green society and circular economy adaptable to new technologies, a home and place of employment for people and industries striving towards reducing their carbon footprint.

# 10.0 Introduction

The '2021 Climate Action Plan' represents the Government's all of society approach, aimed at enabling Ireland to meet the EU targets to reduce carbon emissions by 51 per cent between 2021 and 2030, and lays the foundations for achieving net zero carbon emissions by 2050. Within that context South Dublin County Council through its strategic County Development Plan seeks to exceed those targets or meet them earlier, creating reliable, robust and efficient energy systems which enable growth across all sectors, and which supports the future development of the County. In line with the LGMA's *Delivering on Climate Action 2030*, the Council will continue to make every effort to increase energy efficiency and unlock renewable energy potential in the County.

<p><b>33%</b></p> <p>Improvement in the Council's Energy Efficiency by 2020</p> 	<p>Make Dublin a Climate-Resilient Region by Reducing the Impacts of future Climate Change-Related Events</p> 
 <p>Actively Engage and Inform our Citizens on Climate Change</p>	<p><b>51%</b></p> <p>Reduction in the Council's Greenhouse Gas Emissions by 2030</p> 

Changes to our climate resulting from the warming effect of greenhouse gas are issues of significance to the global environment. The use of carbon-based fossil fuels is responsible for over half of all greenhouse gas emissions globally. European and national energy policy prioritise measures to support climate change resilience through reduced energy consumption and increasing the proportion of energy consumed from alternative, non-polluting, low carbon and renewable energy sources across sectors (for instance, wind, solar, hydro, geothermal). A key driving force behind this County Development Plan is responding to the climate change issues facing our society today. Climate action measures underpin every aspect of the Plan. This is demonstrated through the compact growth approach and linked settlement and sustainable movement strategies which have been integrated into the Plan. It is also evident in the priority given to Green Infrastructure and placemaking in delivering all elements of the plan at a county and local level creating quality places to live and work.

## 10.0.1 Planning Policy Context

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Section 10(2)(n) of the Planning and Development Act 2000 as amended requires that a Development Plan shall include objectives for:

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

1. reduce energy demand in response to the likelihood of increases in energy and other costs due to long-term decline in non-renewable resources,
2. reduce anthropogenic greenhouse gas emissions, and
3. address the necessity of adaptation to climate change;

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

Development Plan policies and objectives must be consistent with national and regional planning policy as set out in the National Planning Framework (NPF) and Regional Spatial and Economic Strategy (RSES).

- **National Policy Objectives 54 and 55** require that we reduce our carbon footprint by integrating climate action into the planning system in support of national targets for climate policy mitigation and adaptation objectives, (also RPO 7.32) as well as targets for greenhouse gas emissions. Policy also requires the promotion of renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a low carbon economy by 2050.
- **National Policy Objectives 57 and 58** require the integration of flood risk management and Green Infrastructure into development proposals to help mitigate climate change. RPO 3.6 requires that county development plans undergo assessment of their impact on carbon reduction targets and include measures to monitor and review progress towards carbon reduction targets.
- **RPO 7.38** requires local authorities to consider the use of heat mapping to support developments which deliver energy efficiency and the recovery of energy that would otherwise be wasted. It also requires the carrying out of an assessment of district heating and identification of local waste heat sources.
- **RPO 7.40** requires the inclusion of polices to promote high levels of energy conservation, energy efficiency and the use of renewable energy sources in existing buildings, including retro fitting of energy efficiency measures in the existing building stock and energy efficiency in traditional buildings. RPO 7.40 requires the inclusion of policies to facilitate electric vehicle usage.

Policy also requires the promotion of renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives of achieving a low carbon economy by 2050. South Dublin County Council’s strategic aim for the duration of this Development Plan is to meet or exceed

national annual GHG reduction targets to ensure the County is carbon neutral by 2050.

There are many other relevant national and regional policy objectives. These are referenced by number within individual Development Plan policies and objectives in this chapter and are set out in full at Appendix 7.

## 10.0.2 Overarching Policy

### **Policy E1: Responding to European, National and Regional Policy and Legislation**

- Respond to the European, National and Regional Climate Action Programme and UN Sustainable Goal 13 through the integration of climate action policies and objectives which promote renewable energy and energy conservation and an increase in energy efficiency;
- Promote an increase in energy efficiency and the growth of locally based energy alternatives in an environmentally acceptable and sustainable manner.

## 10.1 Energy Planning in South Dublin

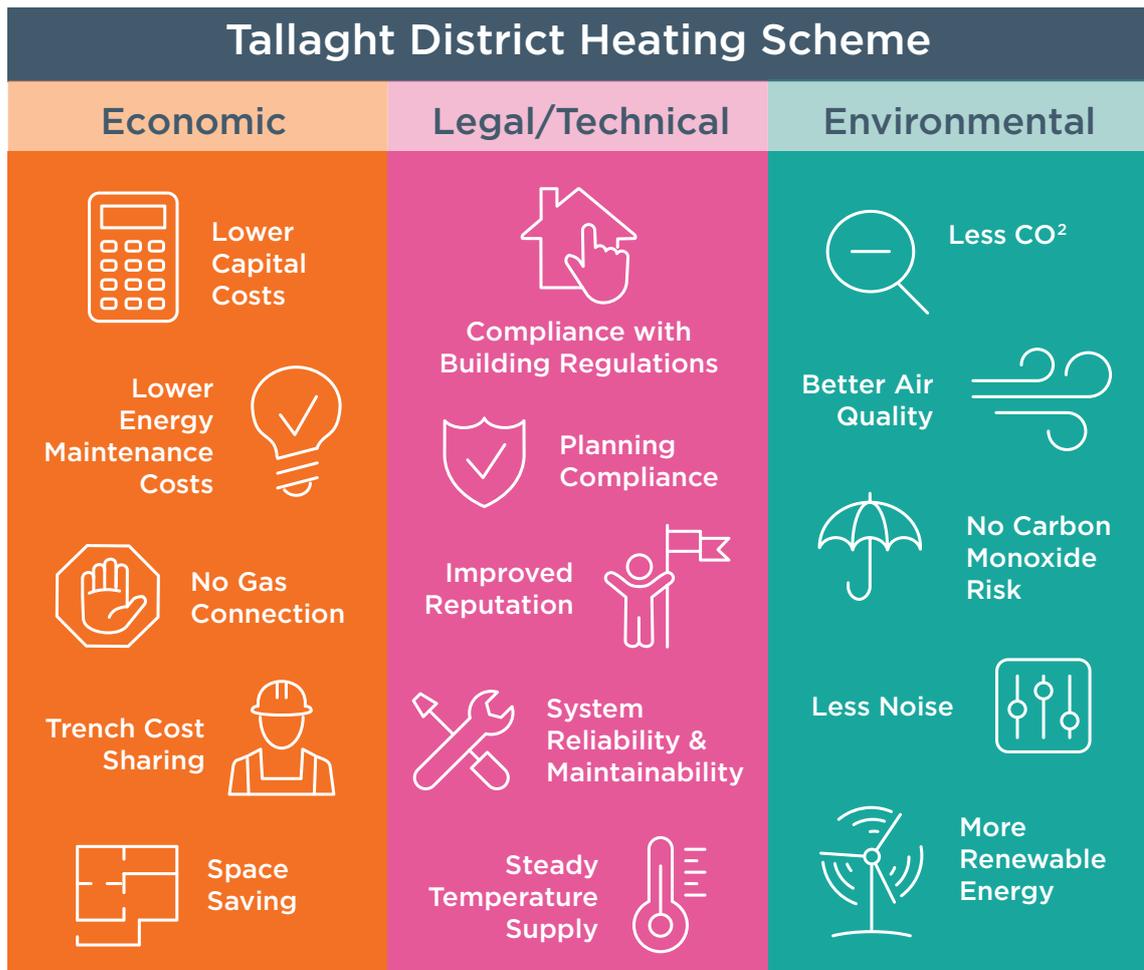
In the last decade the Council has adopted a proactive approach to addressing the climate change and energy challenge by delivering substantial energy efficiencies in its own building and vehicle stock. This has included the carrying out of an extensive retrofitting programme on its own social housing and public building stock and taking the lead role in identifying low carbon and renewable energy opportunities in the County. South Dublin County Council signed up to the EU Covenant of Mayors (Europe wide shared commitment by city mayors to reduce CO2 emissions by a minimum of 20% by 2020) in June 2012.

An update of progress on delivery of the Council's Climate Action Plan is prepared annually. Of the 130 actions set out in the Plan Work is currently ongoing on 109 actions and 15 are complete. It is notable that South Dublin County Council surpassed its improvement in energy efficiency target of 33% by 2020, one year ahead of schedule, and is well placed to meet the 51% reduction in GHG emissions by 2030. By 2021 South Dublin County had achieved a 34.4% improvement in energy efficiency in the intervening years since 2009, reaching its target one year ahead of schedule. In addition, CO2 emissions had been reduced by 33.6 per cent in the same period.

A number of ground breaking initiatives have been rolled out in the County in recent years. The ongoing Tallaght District Heating project will use waste from a data centre in Tallaght to provide low carbon heat to public sector buildings, 1,400 residential apartments and over 12,000m<sup>2</sup> of commercial buildings in the County Town. This project is the first of its kind in Ireland and will reduce carbon emissions by 1,900 tonnes per year. The SEAI award winning Tallaght Community Energy Living Lab

(Tallaght Smart Grid Test Bed) is a local smart community grid that enables communities to produce and sell electricity generated from renewable sources such as wind, solar and hydro. The project produces a local market for the community with smart boxes installed in every participating house. The project began in 2013 with just 20 participants, it now has expanded to 200 local businesses and homes.

The Council will progress energy masterplans for the existing business district at Grange Castle and Clonburris SDZ lands. The City Edge Framework Plan will assess how the area can support the County in meeting its climate change and carbon emission requirements.



### 10.1.1 South Dublin County Baseline Emissions

Table 10.1 shows the county-wide emissions inventory for South Dublin. This baseline emissions analysis highlights the sectors that generate the highest levels of emissions and provides a record of carbon emissions, which can be used to support the EMRA in creating an emissions inventory for the region, as required under RPO 7.31 of the RSES<sup>1</sup>. Table 10.1 also provides an update to emissions figures where they were available for the Council's own emissions based on the most recent energy consumption figures.

<sup>1</sup> The initial emissions analysis was performed using 2016 data, this is because these calculations are based on Central Statistics Office (CSO) data which is only available every five years. Codema has refined the methodology through the recently adopted Dublin Metropolitan Project which, at time of publishing of Plan provided data for the entire Dublin Region. Further analysis is required to extract separate South Dublin Data which will be available at a later date.

**Table 10.1** Baseline Emissions and Current Emissions

<b>South Dublin's Energy and Emission Inventory</b>		
<b>Sector</b>	<b>Energy Demand (MWh)</b>	<b>Emissions (tCO<sub>2</sub> / tCO<sub>2</sub>eq) 2021</b>
<b>Residential</b>	1,803,177	457,286
<b>Commercial</b>	2,022,840	607,679
<b>Transport</b>	2,799,199	731,029
<b>Municipal (2019 Update)</b>	30,180	8,768
<b>Social Housing</b>	116,681	29,184
<b>Agriculture</b>	6,358	7,023
<b>Waste</b>	-	26,530
<b>Wastewater</b>	-	6,411
<b>Water</b>	1,803	844
<b>Total</b>	<b>6,780,238</b>	<b>1,874,753</b>

Source: Codema: 2021

In 2016, the total energy use in South Dublin amounted to 6,780 MWh. At 31 per cent, diesel accounted for the greatest percentage of this energy use. This was followed by natural gas (29 per cent) and electricity (15 per cent). It should be noted that energy from renewables only contributed 2 per cent to the total fuel mix in South Dublin. Of this renewable energy, 1.5 per cent came from biomass sources. The total emissions from the various sectors in South Dublin was 1,874,753 tonnes of tCO<sub>2</sub>eq. The analysis found that the commercial sector used the most electricity in South Dublin, and also had the highest emissions from electricity (69 per cent), likely due to the number of industrial uses in South Dublin with a high electricity demand.

**Policy E2: South Dublin Energy Profile**

Further develop and implement climate action and energy related initiatives in the County in conjunction with EMRA, the Dublin Energy Agency (Codema), Climate Action Regional Office (CARO) and all relevant stakeholders, promoting energy efficiency and renewable energy measures across the County

**E2 Objective 1:**

To seek to reduce the reliance on fossil fuels in the County by reducing the energy demand of existing and new development.

**E2 Objective 2:**

To promote the generation and supply of low carbon and renewable energy alternatives, having regard to the opportunities offered by the settlement hierarchy of the County and the built environment.



### E2 Objective 3:

To support the recording and monitoring of renewable energy potential in the County in partnership with other stakeholders including the East Midlands Regional Assembly EMRA, the Dublin Energy Agency (Codema), Climate Action Regional Office (CARO).



### E2 Objective 4:

To support new and existing Sustainable Energy Communities (SECs) in line with sustainable development and proper planning.



## 10.2 Energy Measures

### 10.2.1 Energy Performance in Existing Buildings

The energy performance of existing buildings is one of the foremost considerations in responding to the energy challenge in South Dublin County. Increased efforts in this area, in particular the upgrading and refurbishment of homes and business premises has made a significant contribution in reducing energy demands and costs in the County. The graph below shows the significant increase in higher BER ratings in recent years in line with energy rating requirements.

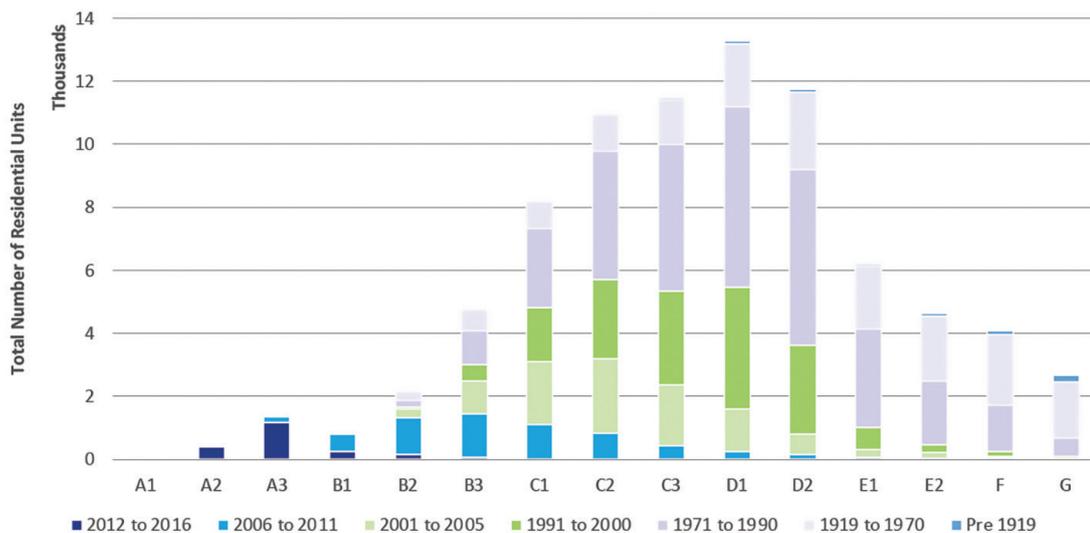


Figure 10.1: South Dublin BER Distribution by Year Built - Source: Codema 2021

### 10.2.2 Energy Performance in New Buildings

The design, construction and operation of new buildings has a significant role to play in reducing energy demand and increasing energy efficiency into the future. The integration of energy issues into the life cycle of all new residential and non-residential buildings, from the neighbourhood, street and individual building scale, can result in significant savings at the local level. The energy efficiency and renewable energy requirements for the construction of new residential and non-residential buildings are primarily addressed in the current Building Regulations under Part L.

All new buildings owned and occupied after the 31st December 2020 are required to comply with the nZEB (near zero energy building) standard. nZEB is defined as a building that has a very high energy performance, as determined in accordance with Annex I of the Energy Performance in Buildings Directive. The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby. For public sector bodies the standard has applied since 31st December 2018.

### Policy E3: Energy Performance in Existing and New Buildings

Support high levels of energy conservation, energy efficiency and the use of renewable energy sources in new and existing buildings including the retro fitting of energy efficiency measures in the existing building stock in accordance with relevant building regulations, national policy and guidance and the targets of the National and South Dublin Climate Change Action Plans.

#### E3 Objective 1:

To reduce the need for energy, enhance energy efficiency and secure the use of renewable energy sources in refurbished and upgraded dwellings, and other buildings through the design and location of new development, in accordance with relevant building regulations and national policy and guidance.



#### E3 Objective 2:

To prioritise the retrofitting of buildings over demolition and reconstruction where possible to reduce the large quantities of embodied carbon energy generated from building materials when building from the ground up.



#### E3 Objective 3:

To require all new development to be designed to take account of the impacts of climate change, and that energy efficiency, energy provision and renewable energy measures are incorporated in accordance with national building regulations and relevant policy and guidelines.



#### E2 Objective 4:

To support and facilitate the actions and targets of the National and South Dublin Climate Action Plans where they relate to private and public buildings in the County.



### 10.2.3 Electric Vehicles

The National Climate Action Plan has ambitious targets for the uptake of electric vehicles (EVs), with a target of having 945,000 EVs on the road by 2030, including 840,000 cars, 95,000 light commercial vehicles, 3500 Low Emitting Trucks, 1500 Electric Buses and an electrified rail network. This means approximately one-third of all vehicles sold during the decade need to be Battery Electric Vehicles (BEVs) or Plug-in Hybrid Electric Vehicles (PHEVs). To support this target, the four Dublin Local Authorities in conjunction with the Climate Action Regional Office (CARO) and Smart Dublin have produced an overarching EV charging strategy which addresses on street charging infrastructure for the Dublin region. Electric vehicle policies and objectives

are addressed in more detail in Chapter 7: *Sustainable Movement*.

It is recognised that while EVs are an improvement on vehicles that use internal combustion engines they are not the lowest emission method of transportation and suffer some of the same inefficiencies as fossil fuel-based vehicles when it comes to time in use, land take for parking and low capacity to move people per standard lane of road space.

#### **Policy E4: Electric Vehicles**

Promote the delivery of EV charging facilities in accordance with relevant regulations and national and regional policy and guidance. (see also Chapter 7: *Sustainable Movement* and Chapter 12: *Implementation and Monitoring*)

##### **E4 Objective 1:**

To support the implementation of the EV charging strategy for the Dublin Region.



##### **E4 Objective 2:**

To ensure that EV charging points are installed such that they do not cause significant obstruction to lower carbon forms of transportation (that is, footpaths, cycle lanes, access to DART or Luas stations, or bus lanes / stops).



##### **E4 Objective 3:**

To ensure that all new vehicles purchased or replaced in the Council's fleet are EVs charged from renewable sources or powered by renewable fuels.



## 10.2.4 Low Carbon District Heating Networks

A district heating scheme consists of an insulated pipe network, which allows heat generated from a single or several larger centralised source(s) (energy centres) to be delivered to multiple buildings to provide space heating and hot water.



**Figure 10.2:** - Benefits of District Heating (Source: Codema)

The best district heating opportunity areas are those that have:

- High heat demand density (both existing and planned) - in countries such as Denmark, areas with heat demand density higher than 150TJ / km<sup>2</sup> are zoned for district heating, as these areas are deemed technically and economically suitable for developing conventional DH systems.
- Proximity to existing heat sources / space suitable for installing new low-carbon heat generating equipment.
- Minimal spatial / physical barriers along DH network route (for example, rivers, existing infrastructure, heritage sites).

To satisfy the requirements of RPO 7.38 the heat map for the County was updated by Codema. A high-level feasibility analysis was also performed, as required in RPO 7.38 and the potential for district heating (DH) Strategic Energy Zones were outlined in accordance with RPO 7.35. Given that there is an ongoing district heating scheme in

Tallaght, the continued expansion of that potential will be prioritised. In the case of the Tallaght District Heating Network, spatial heat maps were used to identify the potential for District Heating and then to bring together stakeholders for business development and to share opportunities, inform policy and optimise network design. Two other locations at Clonburris / Grange castle and Clondalkin are also identified as having DH potential.

At Clonburris / Grange castle a good level of heat demand provided by new, medium to high density residential units (60 dwellings per hectare with approximately 60% of these being apartments) and the 55,500m<sup>2</sup> of commercial, retail and community floor space will occur within the SDZ boundary. To the south-west of the Clonburris SDZ, Grange Castle has an abundance of potential waste heat sources, including substantial waste heat from a number of data centres There is further potential to develop DH within the development area of Grange castle west.

Clondalkin has pockets of potential to the east and west of the M50. Further consideration would be required to assess the sustainability of potential sources of waste heat and how this might be recovered.

### **Policy E5: Low Carbon District Heating Networks**

1. Support the delivery of low carbon district heating networks at appropriate locations across the County and subject to proven feasibility. Support also complementary technologies such as combined cooling, heat and power (CCHP), large scale heat pumps, and renewable energy opportunities, including geothermal energy, energy from waste, biomass and bio-gas;
2. Support the investigation of both deep and shallow geothermal energy sources throughout the County. Deep geothermal projects are particularly suited to areas demonstrating high heat densities;
3. Support the delivery of District Heating Proposals subject to proven feasibility within areas demonstrating heat demand density in excess of 150TJ / km<sup>2</sup> (including for the identified areas of Low Carbon District Heating Potential in Tallaght, Clonburris / Grange Castle and Clondalkin). Future developments within these areas should connect into existing or confirmed District Heating Systems. Where a District Heating scheme has not been confirmed new development should be designed so that it can connect into such a scheme when one is delivered;
4. Support for low carbon district heating networks is subject to the appropriate environmental assessments being undertaken to ensure no significant impact on the wider environment including human health.

#### **E5 Objective 1:**

To future proof the built environment in Low Carbon District Heating Areas of Potential to enable the delivery of local energy networks and a move towards de-centralised energy systems.



**E5 Objective 2:**

To ensure that all development proposals in Low Carbon District Heating Areas of Potential carry out an Energy Analysis and explore the potential for the development of low carbon district heating networks.

**E5 Objective 3:**

To support deep and shallow geothermal projects at appropriate locations across South Dublin subject to environmental assessment.

**E5 Objective 4:**

To support community energy grids and micro grids in the generation of electricity by renewable sources.

**E5 Objective 5:**

To support the recording and monitoring objectives of the plan by incorporating an 'Energy Assessment Form' into the planning application process providing information relating to energy use within larger developments of over 20 residential units or 3000 sq m commercial or equivalent mixed use to include annual and peak demand for heat and electricity, floor area, BER rating, heating system details, details of renewables on site, EV charging details.

**E5 SLO 1:**

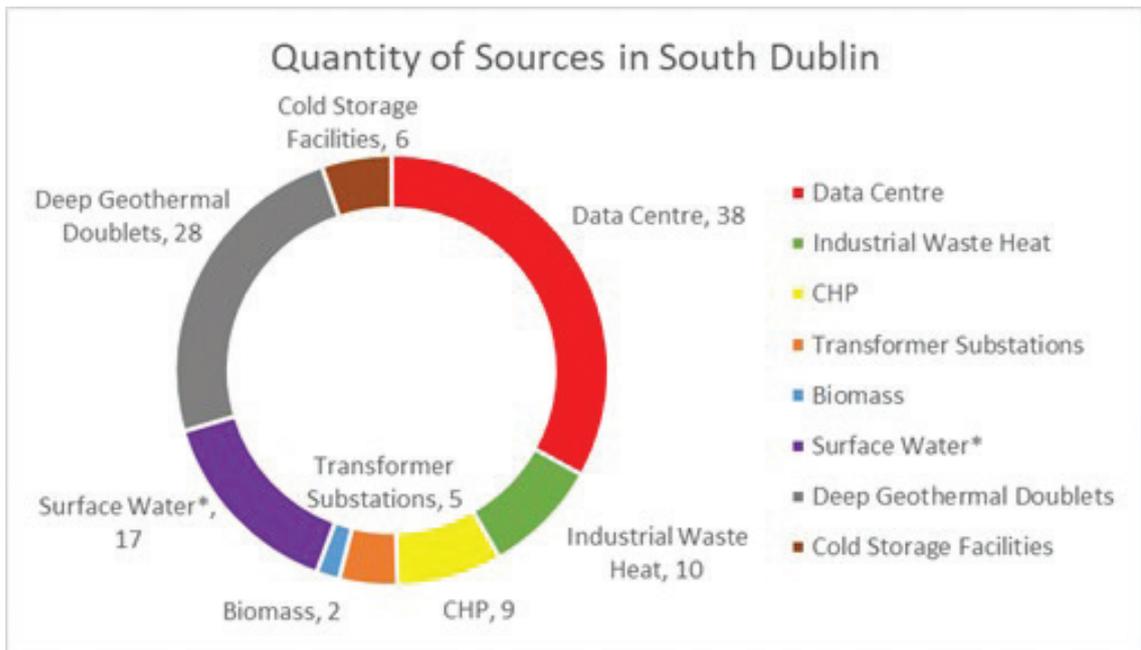
To prioritise the development of low carbon district heating networks in the identified areas of potential for Low Carbon District Heating at Tallaght, Grange Castle / Clonburris and Clondalkin in line with Policy E5 and supporting objectives in the written statement.

### 10.2.5 Energy from Waste

There are a number of ways of generating energy from waste, whether electricity or heat. These include combustion, gasification, pyrolysis, anaerobic digestion and landfill gas recovery. While not the top preference of the waste hierarchy to avoid waste, it does allow for a more sustainable circular economy approach to waste where it cannot otherwise be avoided. For all such projects, the wider environmental impacts should be considered, and environmental assessments undertaken as appropriate.

There is significant potential for the capturing and utilisation of waste heat generated by premises that are currently generating un-used heat, which could be captured and re-used on-site or by premises on adjoining and nearby sites. Such waste heat is generated from processes including thermal generating stations, site power generation, industrial processes, wastewater systems and waste to energy plants. This technology will power homes and businesses in the Tallaght District Heating Project. Where significant waste heat potential exists district heating proposals are significantly more feasible. The heat source which has the greatest heat capacity is data centre waste heat.

Figure 10.3 demonstrates current potential heat sources in the County.



**Figure 10.3:** No. of existing heat sources identified (grouped by type)

### Policy E6: Waste Heat Recovery and Utilisation

Promote the development of waste heat technologies and the utilisation and sharing of waste heat in areas where feasibility is proven for its use in the delivery of low carbon district heating technology.

#### E6 Objective 1:

To require future proofing of and promote the development of waste heat technologies and the utilisation and sharing of waste heat where feasibility is proven for its re-use as part of a low carbon district heating network.



#### E6 Objective 2:

To promote the circular economy by generating energy through waste subject to environmental considerations.



### 10.2.6 Solar PV

Photovoltaic (PV) cells convert solar radiation directly into DC electricity. Individual PV cells only provide a small amount of electricity, so they are generally grouped together into a module for convenience. PV is generally more suited to areas where the electricity generated can supply a nearby load, and the energy loss and costs associated with transmission and distribution are avoided. In accordance with the requirements of RPO 7.35 of the RSES the Council is working with the Dublin Energy Agency Codema to assess the potential for both building integrated and utility-scale solar PV panels in the County with the long-term objective of designating zones where Strategic Solar Energy Zones might be considered. Work already undertaken provides opportunities for the incorporation of solar technologies into the built fabric of existing premises. There may also be potential for the development of 'solar farm' type developments adjacent to the range of large commercial, industrial and business parks located in South Dublin County where viability and feasibility is proven.

### Policy E7: Solar Energy

Promote the development of solar energy infrastructure in the County, including the building of integrated and commercial-scale solar projects subject to a viability assessment and environmental safeguards including the protection of natural or built heritage features, biodiversity and views and prospects.

#### E7 Objective 1:

To encourage and support the development of solar energy infrastructure for on-site energy use at appropriate locations in the County.



#### E7 Objective 2:

To encourage and support the development of commercial-utility solar energy infrastructure for local distribution at suitable locations in the County.



#### E7 Objective 3:

To support and encourage the ongoing delivery of solar technology on Council owned buildings and sites in accordance with the South Dublin Climate Action Plan.



#### E7 Objective 4:

To explore the potential for the development of solar PV Strategic Energy Zones in the County in accordance with the requirements of RPO 7.35.



#### E7 Objective 5:

To ensure that planning applications for solar energy infrastructure which may impact on the operation of airports are referred to the IAA / Department of Defence or relevant airport authority.

#### E7 Objective 6:

To establish a GIS database of PV installations in the County at the appropriate time in tandem with the roll out of solar PV development. This should include data on the size (area of site in m<sup>2</sup>, total area of panels per m<sup>2</sup>), type (monocrystalline, tracking, PV, concentrated solar panels, domestic / commercial, etc.), grid connection details (location, kV, two-way metering, etc.) and energy generation (kW peak, annual kWh) of each installation.

#### E7 Objective 7:

To support the provision of solar farms in the County in areas zoned RU subject to protecting environmental sensitivities.

#### E7 Objective 8:

To support the installation of solar panels on up to 100% of residential roof space.

### 10.2.7 Large Scale Wind Energy Projects

The Council recognises that wind energy makes a significant contribution to reaching Ireland's renewable energy targets into the future.

A Landscape Character Assessment (LCA) updated in 2021 accompanies this Plan (Appendix 9). A Wind Energy Sensitivity and Capacity Analysis was carried out as

part of the original LCA in 2016. A Wind Capacity Sheet was completed to determine the capacity of each Landscape Character Area in the County to accommodate wind turbine developments. This analysis when combined with the Landscape Character Assessment, concluded that there are no areas in the County where large-scale commercial wind energy infrastructure could be classified as either ‘permitted in principle’ or ‘open for consideration’.

A high-level wind energy potential assessment for the County was carried out by Codema in 2020. The wind speed assessment did identify some potential for wind energy projects, similar to the LCA assessment, within the Dublin / Wicklow Mountain ranges but was not subject to environmental assessments and the Wind Guidelines methodology. It is the intention of the Council to carry out a review of the Wind Energy Strategy for the County.



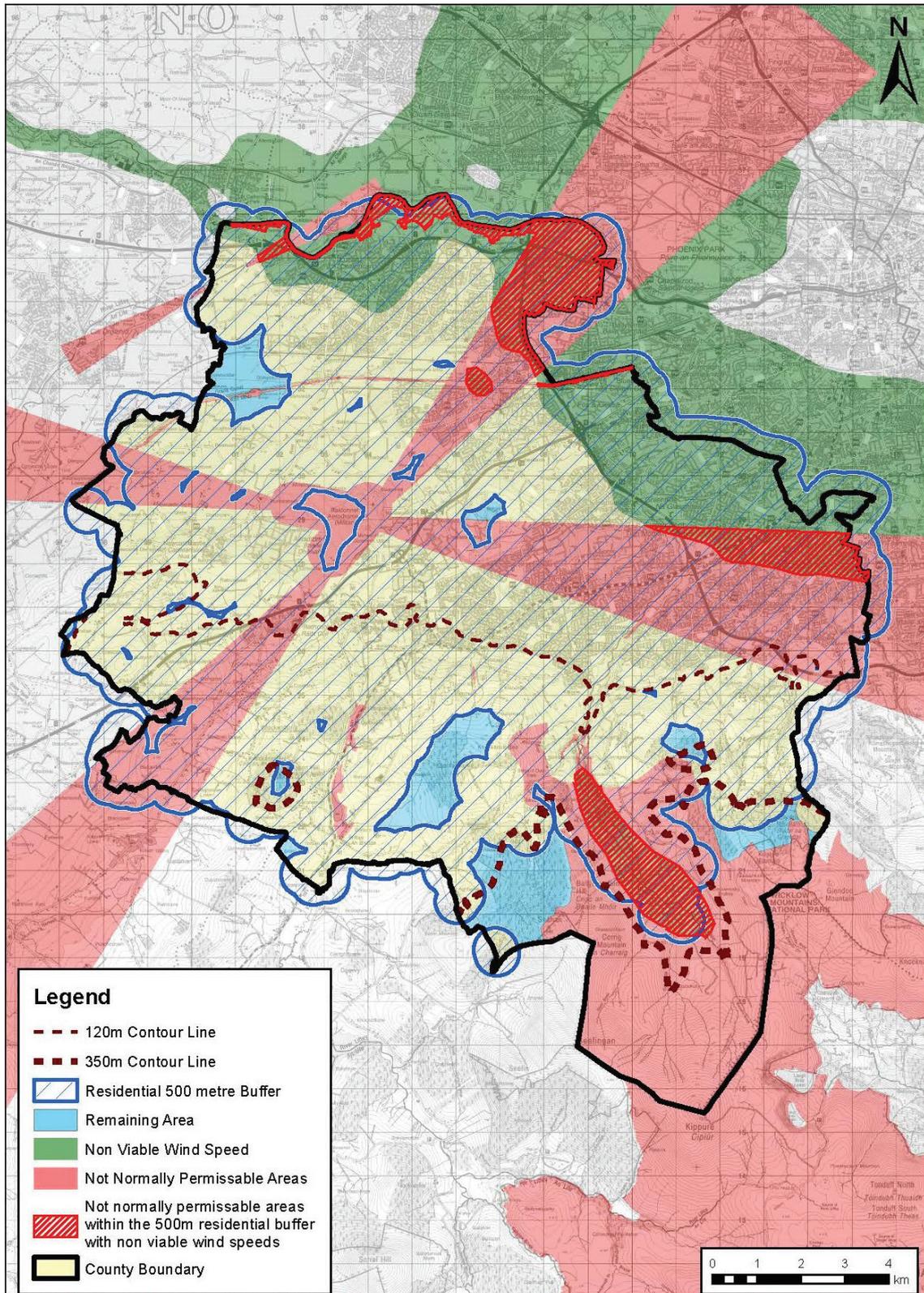


Figure 10.4: Wind Energy Analysis

**Policy E8: Wind Energy**

Recognise that wind energy has significant potential to help meet renewable energy targets at a national level subject to ensuring no adverse impact on the wider environment and review the wind energy potential for South Dublin having regard to the relevant guidelines and landscape character.

**E8 Objective 1:**

To review the current Wind Energy Strategy for the County during the lifetime of the Plan having regard to any updated Wind Energy Guidelines.

**E8 Objective 2:**

To continue to assess planning applications against the current wind energy strategy (2016) until such time as a review of the strategy has been completed and approved, recognising that large scale wind energy developments are contrary to the strategy.

**E8 Objective 3:**

To encourage and support the provision of wind farms as part of an agricultural mix in suitable viable land areas zoned RU within the county in accordance with South Dublin County's Wind Energy Strategy.

**10.2.8 Small Scale Wind Energy Projects**

The Council will encourage small to medium scale wind energy developments in industrial and business parks and small-scale developments for domestic purposes, in appropriate locations to serve on-site energy use (auto-consumption) and feedback of surplus to the grid. The Council recognises advances in technologies in this area and the potential for such development to be designed to suitably integrate with the built fabric of these areas. There has been Government support for this since 2007, as set out in the various planning exemptions provided for under the Planning and Development Regulations 2007 and 2008.

**Policy E9: Small to Medium Scale Wind Energy Schemes**

Encourage small and medium scale wind energy developments within industrial or business parks and support small community-based proposals for domestic use in urban areas that can encourage self-consumption on a community scale whilst feeding any surplus back to the grid, provided they do not negatively impact upon the environmental quality and visual or residential amenities of the area.

**10.2.9 Small Scale Hydro-Electricity Projects**

There are a range of water bodies in the County including the Liffey, Dodder, Griffeen, Owendoher and Camac rivers and their tributaries. This means that there is some potential for development of hydroelectricity in the County. Some of these rivers and their associated streams and tributary networks are partially designated as proposed Natural Heritage Areas (pNHA) and some contain protected structures including weirs and dams which are often the best location in technical terms for hydro-electric

development. They also contain species and habitats that are protected under the Birds and Habitats Directives. There are currently four active hydroelectric stations in South Dublin County; the potential for further development of small-scale hydro-electricity projects in the County, in particular for on-site consumption to meet the electricity requirements of proposed new buildings or refurbishment of existing buildings, will be assessed against the relevant environmental considerations appropriate to their riverside location and setting.

<b>Policy E10: Small Scale Hydro-Electricity Projects</b>	
Support the development of small-scale hydroelectric schemes in the County	
<b>E10 Objective 1:</b>	
To support the roll-out of small-scale hydroelectric projects on the rivers, watercourses, freshwater dams and weirs across the County, where projects do not impact negatively on freshwater species, biodiversity and natural or built heritage features and to support and investigate potential sites.	
<b>E10 Objective 2:</b>	
To support and facilitate the investigation of potential sites in the County for the generation of small-scale hydro-power.	

**10.2.10 Green Infrastructure**

Increasing green infrastructure can help to off-set Green House Gases GHGs from new developments (buildings and related transport activity) and act as carbon sinks. Therefore, any reduction of green areas and trees will provide potential to off-set GHG's.

Trees and landscaping are important for climate amelioration and maintaining a healthy environment. Wooded areas have a carbon absorption rate that is approximately three times that of areas covered in grassland. Trees absorb carbon as they grow, and woods and forests provide long-term carbon reduction benefits. Planting in urban areas, at the source of many atmospheric pollutants, can filter out those pollutants, reduce water run-off, improve water quality, reduce noise and provide shading to help reduce urban heat island effects. The planting of trees is one of the most cost-effective methods of carbon capture and storage.

Trees and the retention of mature trees can be an asset to a new development. They provide a strong sense of character and place, as well as providing a ready-made landscape. Retaining trees is always desirable, though many trees are lost each year in the course of development. Some are removed due to their condition or because they are directly in the way of development. However, many are lost due to unsuitable protection during the construction phase.

### Policy E11: Green Infrastructure

Implement the Council's Green Infrastructure Strategy as an essential element of building resilience to climate change whilst ensuring healthy placemaking and delivering on the compact growth approach, in accordance with National and Regional Policy and the National Climate Action Plan.

#### E11 Objective 1:

To ensure the implementation of policy and objectives on tree planting, protection of trees on site and development management standards in relation to new development as set out in the Green Infrastructure, Heritage and Implementation Chapters of this plan.



## 10.3 Decarbonising Zones (DZ)

Action 165 of the Climate Action Plan 2019 set Local Authorities the challenge of identifying and developing Decarbonising Zones. Implementation of the action is being led by the Department of Housing, Local Government and Heritage. South Dublin will identify boundaries for decarbonisation zones.

A Decarbonising Zone is an area identified by the local authority, in which a range of climate mitigation measures can co-exist to address local low carbon energy, greenhouse gas emissions and climate needs. The range of projects developed are specific to the energy and climate characteristics of the spatial area covered by the DZ. This can include a range of technologies and measures addressing electricity, heat, transport, building energy efficiency, carbon sequestration, energy storage, grid frequency / inertia and so on.

A Decarbonising Zone should also address the wider co-benefits of air quality, improved health, biodiversity, embodied carbon, agricultural practices, sustainable land management, lower noise levels, waste, water, circular economy and so on, and should integrate with smart data and 'smart cities' initiatives (as relevant).

A Decarbonising Zone can also explore the co-benefits of climate adaptation and examine a range of local measures such as climate proofing, afforestation, green and blue infrastructure, reducing heat island effects, citizen awareness and behavioural change.

The working definition of a decarbonising zone is:

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

### Policy E12: Decarbonising Zones

Support the identification and development of decarbonisation zones in South Dublin over the lifetime of the Development Plan.

#### E12 Objective 1:

To promote the generation and supply of low carbon and renewable energy alternatives.



#### E12 Objective 2:

To work with stakeholders to advance and implement decarbonisation zones in the County.

#### E12 Objective 3:

To ensure that all developments within the decarbonising zone commit to the aims of those zones in areas where they are identified within the County.

### 10.3.1 Economic and Social Benefits

There are potentially significant economic and social implications associated with the use of energy technology and our transition to a net zero carbon economy. The benefits include new job creation, reducing the cost of energy generation and potential health benefits such as improving air quality and reducing air pollution. A just transition will ensure that people are retrained to adapt to employment in a changing labour market.

### Policy E13: Economic and Social Benefits

Support a just transition to a sustainable future for all communities that is fair and equitable to all involved through the diversification of the economy and helping people adapt in a changing labour market (see also Chapter 9: *Economic Development and Employment*).



## 10.4 Climate Action Audit - Energy



### Climate Action Audit

Source of Green House Gases (GHGs)	Measures to Address Climate Impacts
<p>While acknowledging that all new development will have impacts on GHG production and potentially will contribute to climate change, this chapter addresses all sectors of the economy and County with a view to integrating the sustainable energy approach into all development. Facilitating, promoting, advocating and integrating renewable energy technologies into all aspects of development in the County.</p>	<p>Policies and objectives contained in this chapter which address climate impacts include the following:</p> <ul style="list-style-type: none"> <li>→ Overarching policy to promote energy conservation, increase energy efficiency and promote the growth of locally based energy alternatives in an environmentally acceptable and sustainable manner in line with national and regional policy;</li> <li>→ Improve energy efficiency in existing and new buildings;</li> <li>→ Facilitate delivery of electric vehicles;</li> <li>→ Provision of low carbon District Heating networks and waste heat recovery systems;</li> <li>→ Facilitate solar, wind and hydro-electric energy technology development where feasible subject to environmental assessment;</li> <li>→ Support the delivery of the Green Infrastructure provisions of the plan in all development;</li> <li>→ Support the identification and development of decarbonising zones within the County and ensure that all developments within such zones commit to their aims.</li> </ul>

