7

Energy & Communications

Meanma agus Misneach

Chapter 7 Energy & Communications

Aim: *To encourage and support energy and communications efficiency and to achieve a reasonable balance between responding to EU and National Policies on climate change, renewable energy and communications and enabling resources to be harnessed in a manner consistent with the proper planning and sustainable development of the county.*

7.1 Background

Kildare has a long history of energy production related predominantly to the commercial exploitation of peatlands. Kildare County Council recognises the potential economic benefit of a transition from fossil fuel-based energy production through to investment in renewable energy.

Irelands 'Climate Action Plan 2019 – To Tackle Climate Breakdown' represents the Government's approach, aimed at enabling Ireland to meet its EU targets to reduce carbon emissions by 30 percent between 2021 and 2030 and lays the foundations for achieving net zero carbon emissions by 2050.

Kildare County Council adopted a Climate Change Adaptation Strategy for the county in 2019, which takes on the role as the primary instrument at local level to: ensure a proper comprehension of the key risks and vulnerabilities of climate change; bring forward the implementation of climate resilient actions in a planned and proactive manner; and ensure that climate adaptation considerations are mainstreamed into all plans and policies and integrated into all operations and functions of Kildare County Council.

7.2 Planning Policy Context

In the preparation of this chapter of the Plan, regard has been had to the following;

- EU Renewable Energy Directive 2009/28/EU
- 2030 EU Climate and Energy Framework 2014
- EU Effort Sharing Regulations 2018
- EU Directive 2001/77/EC Renewable Energy
- EU Directive on the Energy Performance of Buildings (2002/91/EC)
- The Paris Agreement 2015
- The United Nations Framework Convention on Climate Change (UNFCCC), Conference of Parties, Glasgow 2021.
- EU Commission European Green Deal 2019.
- Project Ireland 2040 National Planning Framework
- National Development Plan 2018-2027
- Regional Spatial and Economic Strategy 2019
- Energy White Paper Ireland's Transition to a Low Carbon Energy Future 2015 -2030
- The National Climate Change Adaptation Framework Plan 2018
- The Climate Action and Low Carbon Development Acts 2015 to 2021
- National Peatlands Strategy 2015
- Kildare Climate Change Adaptation Strategy

7.3 Climate Adaptation and Mitigation

Climate mitigation is aimed at tackling the causes and minimizing the possible impacts of climate change while adaptation examines how to reduce the negative effects it has and how to take advantage of any opportunities that arise

describes actions to reduce the likelihood of climate change occurring by reducing our emission of harmful greenhouse gases or reduce the impact if it does occur.

Policy

It is the policy of the Council to:

EC P1	Reduce our carbon footprint in line with national targets for climate policy mitigation and adaptation objectives, as well as targets for greenhouse gas emission reductions.

Objective

It is an objective of the Council to:

EC O1	Ensure that energy intensive sectors incorporate significant renewable energy sources to reduce their carbon footprint.

Action

It is an action of the Council to:

EC A1	Prepare, within 1 year of the adoption of the County Development Plan a Sustainable Energy Climate Action Plan (SECAP) for County Kildare to provide a baseline analysis for Kildare and for the inclusion of measurable targets on renewable energy and climate change mitigation and adaptation.

7.4 Renewable Energy

Under EU Directive 2001/77/EC Renewable Energy, renewable energy sources are defined as renewable non-fossil energy sources such as, but not limited to wind, solar, geothermal, wave, tidal, hydropower, bioenergy, landfill gas, sewage treatment plant gas, biogases and bio-char (i.e. the thermal treatment of natural organic materials in an oxygen-limited environment).

Due to increased energy requirements and national and EU targets for energy consumption from renewable sources, our electricity supply must move away from fossil fuel sources to renewable and sustainable forms of generation. The Council recognises the range of new and developing technologies and supporting infrastructure that can contribute to minimising greenhouse gas emissions and to securing a greater proportion of our energy needs from renewable resources.

It is an objective of this Plan to support the establishment of a Mid-East Energy Bureau in collaboration with Wicklow County Council, Meath County Council and the Sustainable Energy Authority of Ireland. This agency would lead the delivery of sustainable energy solutions in Kildare and beyond, by advocating, educating and innovating on climate action and would encourage and guide communities, businesses and citizens to participate in the energy transition and achieve carbon neutrality.

Policies
It is the policy of the Council to:

EC P2	Promote renewable energy use and generation at appropriate locations within the built environment and open countryside to meet national objectives towards achieving a net zero carbon economy by 2050.
EC P3	Support the roll-out of the Smart Grids and Smart Cities Action Plan enabling new connections, grid balancing, energy management and micro grid development

Objectives
It is an objective of the Council to:

EC O2	Adopt an informed and positive approach to renewable energy proposals, having regard to the proper planning and sustainable development of the area, including community, environmental and landscape impacts and impacts on protected or designated heritage areas / structures.
EC O3	Support initiatives for limiting emissions of greenhouse gases through energy efficiency and the development of renewable energy sources which make use of the natural resources in an environmentally and socially acceptable manner.
EC O4	Support infrastructural renewal and development of electricity and gas networks in the county, subject to safety and amenity requirements.
EC O5	Support and encourage the sustainable development of renewable energy auto production units (the production of energy primarily for on-site usage) for existing and proposed developments in line with relevant design criteria, amenity and heritage considerations and the proper planning and sustainable development of the area.
EC O6	Encourage developers of proposed large scale renewable energy projects to carry out community consultation (including, but not limited to Sustainable Energy Communities, where established) in accordance with best practice and to commence the consultation at the commencement of project planning.
EC O7	Support, encourage and co-operate with Sustainable Energy Communities (SECs) in the preparation of energy masterplans for their communities and in the delivery of infrastructure and services and to assist in the development of SECs in towns throughout the County. .
EC O8	Support the roll out of the Renewable Electricity Support Scheme (RESS), which enables communities to become involved in energy generation projects and, where possible, provide the use of public land for the development of community owned Renewable Energy projects.
EC O9	Ensure that whenever possible and appropriate, community benefits are derived from all renewable energy developments in the county.
EC O10	Support energy efficient lighting at appropriate locations in both urban and rural areas.

Actions
It is an action of the Council to:

EC A2	Establish a Mid-East Energy Bureau in collaboration with Wicklow County Council, Meath County Council and the Sustainable Energy Authority of Ireland.
EC A3	Prepare and implement an overall Renewable Energy Strategy for the County in accordance with the current Climate Change Adaptation Strategy for County Kildare.

7.5 Wind Energy

One of Ireland's greatest natural resources is wind. The country has one of the most advantageous wind regimes in Europe suitable for the production of electricity especially during the winter months when energy demand is at its highest. Notwithstanding Kildare's inland location, the County has potential in this regard.

A Wind Energy Strategy forms part of this Development Plan and is presented in Appendix 2. The Strategy has been prepared in accordance with the provisions of the Department of the Environment, Heritage and Local Government's Draft Guidelines for Planning Authorities on Wind Energy Development (2019) and constitutes a plan led approach to wind energy development in County Kildare. The Strategy designates areas across the county where wind energy developments are acceptable in principle, open for consideration and not normally permissible. County Kildare has the potential to generate 53.5 MW from wind energy production during the lifetime of this Development Plan taking account of permitted wind farm developments. However, given that this figure relates to planning applications determined within the last 3-4 years, it is considered reasonable to double this figure to account for wind energy proposals that have yet to come forward to planning stage and be constructed by the end of the Plan period in 2029. Therefore, it is considered that 107MW is the more realistic wind energy target for Kildare to the end of this Plan period which will contribute towards realising overall national targets on renewable energy and climate change mitigation

Site suitability is an important factor in determining the suitability of wind farms having regard to possible adverse impacts associated with, for example, residential amenities, landscape, including views or prospects, wildlife, habitats, designated sites, protected structures or bird migration paths and compatibility with adjoining land uses. The Council is therefore required to achieve a reasonable balance between responding to overall positive Government policy on renewable energy and enabling the wind energy resources of the Planning Authority's area to be harnessed in a manner that is consistent with proper planning and sustainable development. The Council recognises that community ownership of wind energy projects enables local communities to benefit directly from local wind energy resources being developed in their local areas, ensuring long-term income for rural communities.

Policy
It is the policy of the Council to:

EC P4	Have regard to the Department of the Environment, Heritage and Local Government's *'Guidelines for Planning Authorities on Wind Energy Development'* (or any subsequent updates) and the Kildare County Council Wind Energy Strategy when assessing planning applications for wind farms.

Objectives
It is an objective of the Council to:

EC O11	Encourage wind energy developments in suitable locations in an environmentally sustainable manner whilst having regard to Government policy and the County Wind Energy Strategy.
EC O12	Support small to medium scale wind energy developments within agricultural, industrial or business areas and support small community-based proposals in urban and rural areas where they do not negatively impact upon the environmental quality and visual or residential amenities of the area.
EC O13	Support the repowering (by replacing existing wind turbines) of existing windfarm development and the extension of existing and permitted wind farms on a case-by-case basis subject to further appropriate public consultation and proper planning considerations.
EC O14	Support the establishment of a local Community Benefit Fund as part of any significant wind energy development application, which supports the development of local recreation amenities, provides additional community project funding or community owned Renewable Energy projects.
EC O15	Require decommissioning and site rehabilitation plans including decommissioning and end of life facilities for battery storage, as appropriate, as part of any wind farm development application. Applicants will also be required to clearly identify sustainable solutions for end-of-life blades, demonstrating recycling facilities and/or wind turbine repurposing facilities. Details regarding the disposal of end-of-life blades shall be submitted with all planning applications. The disposal of same to landfill will not generally be permitted.
EC O16	Require comprehensive winter and summer bird and wildlife surveys for all proposed wind farms sites, so that impacts on wildlife can be fully assessed and evaluated and so that appropriate mitigation and adaptation measures can be considered, to include for example removal or repositioning of turbines, introducing one black painted rotor blade (to reduce motion smear and reduce incident of collision) or the provision of technologies that help minimize harm to birds and other wildlife.

Target
It is a target of the Council to:

EC T1	Support the target in the Climate Action Plan 2019 for a doubling of existing on-shore wind energy from circa 4GW (today) to 8.2GW by 2030.

7.6 Solar Energy

As solar energy technologies have become more effective, areas in Northern Europe like Ireland have become viable for technologies including solar panels/ tubes on roof spaces and the commercial development of solar farms together with storage facilities. As a result, solar generated energy is increasingly contributing to a reduction in energy demand and energy costs for a range of commercial, industrial and residential properties.

On-site auto consumption technologies can make a significant contribution towards a reduction in energy costs and this will continue as technologies develop further.

Solar farms have the potential to affect the landscape and natural and built heritage. Cumulative impacts may also arise with farms located close to each other. Site selection is vital for potential solar farms as solar resource, topography and proximity to the grid must be considered.

Solar Energy Developments

- All applications should indicate the estimated megawatt output of the proposed solar farm.
- An assessment of the impact of the development on the receiving landscape should be undertaken, having particular regard to the landscape sensitivity classification, scenic routes and protected views.
- Details of the connection to the grid shall be provided with all planning applications.
- Glint and glare assessment must be undertaken and submitted with each application.
- An assessment of stormwater run-off rates must be completed for each development, and attenuation measures proposed as appropriate.
- The removal of extensive stretches of hedgerow (including within the development site) will be strongly discouraged. Where the removal of minor sections of hedgerows is proposed, the applicant shall demonstrate, to the satisfaction of the
- Planning Authority, that such removal is necessary for the development of the particular solar farm(s).
- In addition to the retention of hedgerows and other existing areas of biodiversity value, a minimum of 10% of each overall solar farm site shall be reserved for
- biodiversity purposes, including planting of native and pollinator-friendly species or the construction of new wetland habitat.

Policy

It is the policy of the Council to:

EC P5	Promote the development of solar energy infrastructure in the County

Objectives

It is an objective of the Council to:

EC O17	Support the building of integrated and commercial-scale solar projects at appropriate locations subject to a viability assessment and environmental safeguards including the protection of natural or built heritage features, biodiversity and views and prospects.

EC O18	Encourage and support the use of appropriately scaled solar energy in residential, commercial and industrial developments. The incorporation of solar technologies into the built fabric of existing buildings will also be encouraged where it does not materially affect the character of the structure or adjoining structures.
EC O19	Promote the development of solar energy infrastructure for on-site energy use, including solar PV and solar thermal technologies. On-site battery storage projects shall be considered subject to fire safety, environmental safeguards and the protection of natural or built heritage features, biodiversity views and prospects.
EC O20	Support and favour the ongoing delivery of solar technology on Council owned buildings and sites and projects in accordance with the Kildare County Council Climate Change Adaptation Strategy (and any successor to same).
EC O21	Support the provision of solar farms in appropriate locations and to consider in the first instance developing solar farms on previously developed land.
EC O22	Support the installation of solar panels on residential roof spaces.
EC O23	Support the installation of solar collectors and panels for the production of heat or electricity in commercial and industrial buildings in line with relevant design criteria, building regulations and technical guidance documents.
EC O24	Require the submission of a Glint and Glare Assessment as part of any solar energy development proposal where there is likely to be any impact on neighbouring uses, transportation and aviation safety.
EC O25	Require decommissioning and site rehabilitation plans (including phasing where appropriate) as part of any solar farm development application. Notwithstanding the provisions of Section 42 of the Planning & Development Act 2000 (as amended), the Planning Authority may grant permission for more than 5 years, in appropriate circumstances.
EC O26	Only permit the removal of hedgerow where the removal of same has been clearly demonstrated, to the satisfaction of the Planning Authority, to be necessary for the development of a solar farm(s).

7.7 Hydro Energy

There are three ESB hydroelectric power stations located in the county - Golden Falls, Leixlip and Poulaphouca.

Policy

It is the policy of the Council to:

EC P6	Facilitate the development of new river-based hydro energy plants subject to all necessary environmental considerations.

Objectives
It is an objective of the Council to:

EC O27	Support proposals for hydro energy installations, including small-scale hydroelectric projects on the rivers, watercourses, freshwater dams and weirs across the County, where projects do not negatively impact on freshwater species, biodiversity and natural or built heritage features. Many of the rivers and tributaries in the county are protected under the Birds and Habitats Directives or other heritage designations, which will require consideration during the investigation of any possible suitable site.
EC O28	Require that, in sensitive landscapes, powerlines connecting the hydro unit to the national grid shall be laid underground.
EC O29	Require, appropriate buffer zones around dams, reservoirs and embankments constructed for the purpose of electricity generation.
EC O30	Support the 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 appropriate to their riverside location and setting.
EC O31	Proposals for hydro-electric energy schemes, including micro-hydro schemes shall incorporate landscaping of dam walls and ancillary developments and also include measures to minimise noise emissions and to reduce the overall impact of schemes.

7.8 Geo-Thermal Energy

The Roadmap for a Policy and Regulatory Framework for Geothermal Energy was launched at the Geoscience Conference in November 2020.

Geothermal energy means energy stored in the form of heat beneath the surface of solid earth. It is generally classified as deep or shallow, depending on the depths involved. Deep geothermal energy can be used for both thermal and electricity generation but as of yet, due to the depths involved and the resultant costs, it has not been developed to any scale in Ireland. The Sustainable Energy Authority of Ireland (SEAI) has developed a geothermal mapping system which identifies the temperature at various depths for the whole country. This type of renewable energy generation may become viable as technologies advance.

Shallow geothermal energy, also known as ground source energy, is most frequently used for providing heat and has been harnessed by homes and commercial and recreational buildings in Ireland for heating purposes. Geothermal energy is extracted through heat pumps which work by circulating a heat transfer fluid around a sealed pipe network buried in the ground. The ground maintains a constant temperature in Ireland of between 11 and 13 degrees and the heat pumps take advantage of this by transferring the heat stored in the ground in winter to the building and doing the opposite to cool buildings in the summer. For each unit of electricity used in a heat pump up to four units of heat are generated.

Policy
It is the policy of the Council to:

EC P7	Facilitate large and smaller scale geothermal energy generating developments both standalone and in conjunction with other renewable energy projects, subject to the proper planning and sustainable development of the area and consideration of environmental and ecological sensitivities.

Objectives
It is an objective of the Council to:

EC O32	Promote the use of geothermal heat pumps for space heating and cooling as well as water heating in domestic, commercial and recreational buildings subject to the protection of water quality and any other relevant considerations.

7.9 Bio-Energy

Bio energy may be defined as energy derived from biomass. Bio energy technologies are broken into three groups:

- Combustion – using biomass solely and with fossil fuels;
- Biochemical process – leads to the production of biofuels;
- Thermochemical process - leads to the production of biogas.

Biomass is defined as the biodegradable proportion of products, waste and residues from agriculture, forestry and related industries, including fisheries and aquaculture and the biodegradable fraction of industrial and municipal waste. It can produce electricity and/or heat. Biomass can be burned to produce heat that is used to create steam to turn turbines and produce electricity. Projects involving the combustion of biomass can range in size from a domestic boiler to industrial installations. The main feedstocks are wood chip and wood pellets, energy crops and the combustion of municipal waste in waste-to-energy facilities.

Biofuels may be defined as liquid or gaseous fuels for transport produced from biomass. Biogas can be injected into the natural gas grid to complement or substitute natural gas and can also be compressed and used as a transport fuel.

Policy
It is the policy of the Council to:

EC P8	Facilitate and support the development of projects that convert biomass to gas or electricity subject to national and regional policy.

Objectives
It is an objective of the Council to:

EC O33	Support the location of biomass installations in areas that do not affect residential or visual amenity which are subject to normal siting, design, environmental and planning considerations and which are served by

	public roads with sufficient capacity to accommodate increased traffic flows.
EC O34	Support and promote domestic biological treatment including compositing of kitchen and garden waste.

7.10 Strategic Energy Zones (SEZs)

Strategic Energy Zones (SEZs) are areas of national priority for renewable energy investment as well as to provide a test bed for new technologies. The development of proposals for Strategic Energy Zones must be considered in the context of existing infrastructural assets as well as future development. SEZs have a role to play in the provision of a secure and reliable electricity supply

Policy

It is the policy of the Council to:

EC P9	Co-operate with the Eastern and Midland Regional Assembly (EMRA) in identifying Strategic Energy Zones.

Objectives

It is an objective of the Council to:

EC O35	Identify Strategic Energy Zones in conjunction with EMRA as areas suitable for larger energy generating projects, community and micro energy production, whilst ensuring environmental constraints and a regional landscape strategy are considered.

7.11 Micro Renewable Energy

Certain energy installations that are identified as being micro-generators will qualify for an exemption from requiring planning permission as per the provisions of the Planning and Development Regulations 2001 (as amended). These planning exemptions apply to residential scale and some commercial scale wind turbine, solar arrays, heat pumps and biomass boilers subject to meeting certain conditions. The Council will encourage the small-scale generation of heat and electricity by individuals, small businesses and communities to meet their own needs and as an alternative to or to supplement grid connected power.

Policy

It is the policy of the Council to:

EC P10	Facilitate micro-renewable energy installations and auto-generator installations where it is demonstrated to the satisfaction of the Council that they will not result in a significant adverse impact on residential, visual or environmental amenity.

7. 12 Energy Efficiency

7.12.1 Low Carbon District Heating

District heating is one of the most efficient and cost-effective ways to heat apartments, homes and mixed-use developments. District heating networks can be based on a variety of technologies and renewable energy sources, such as combined heat and power (CHP), bioenergy, geothermal or energy from waste. Such schemes work particularly well in built-up urban areas where there is a near constant demand. For the system to work, water is heated using a boiler located in a central heating plant. The heat is distributed to the individual houses via an underground network of insulated pipes. The water in the network is continually circulating and always available. Immersion heaters, boilers and hot water storage tanks are not required which frees up space for other purposes. The use of a renewable energy solution to provide heating and hot water to houses and businesses contributes to sustainability as it reduces demand for and consumption of energy while using a renewable form of fuel.

District heating provides an innovative, local-level solution that allows us to decarbonise heat while also integrating more renewable electricity. District heating systems create a local-level heating (and, if required, cooling) grid which delivers low-carbon heat to residential, commercial and public buildings. These systems are widely used across Europe, and supply 90% of all heat in sustainable cities such as Copenhagen and Stockholm.

District heating is also supported at Regional level where RPO 7.38 of RSES states that: *'Local authorities shall consider the use of heat mapping to support developments which deliver energy efficiency and the recovery of energy that would otherwise be wasted. A feasibility assessment for district heating in Local Authority areas shall be carried out and statutory planning documents shall identify local waste heat sources.'*

Where data centre developments are approved in the County, the Council will expect district heating systems to be developed for adjoining residential, community and/or commercial developments.

Policy

It is the policy of the Council to:

EC P11	Support Ireland's renewable energy commitments outlined in national policy.

Objectives

It is an objective of the Council to:

EC O36	Promote and encourage the use of district heating systems in new residential and commercial developments where such development does not have a negative impact on the surrounding environment, landscape, biodiversity or local amenities.
EC O37	Facilitate the use of heat mapping or other appropriate analysis to support developments which deliver energy efficiency and the recovery of energy that would otherwise be wasted.
EC O38	Promote district heating proposals in conjunction with neighbouring authorities.

Action
It is an action of the Council to:

EC A4	Carry out a feasibility assessment for district heating in County Kildare and identify local waste heat sources or renewable energy sources to facilitate such proposals.

7.12.2 Air to Water Heat Pumps

Air to Water Heat Pumps are becoming the norm for energy efficient heating and cooling especially in well insulated and sealed homes. This may be considered a simpler and more cost-effective option than Geothermal heating. Air to water heat pumps can also be retrofitted into homes.

Homes heated in this way have an air source heat pump fitted on the ground or on a wall outside the house. The pumps are powered from the electricity supply. Air to Water Heat Pumps are especially clean sources of energy if the electricity used to power them is generated from renewable sources such as solar PV panels or wind turbines.

Policy
It is the policy of the Council to:

EC P12	Facilitate air to water heat developments at appropriate location and scale.

Objectives
It is an objective of the Council to:

EC O39	Support air to water heat developments, including the retrofitting into existing homes, in conjunction with other renewable energy projects, subject to the proper planning and sustainable development of the area and consideration of environmental and ecological sensitivities.
EC O40	Support and promote the use of air to water heat pumps in domestic, commercial and recreational buildings subject to the protection of water quality and any other relevant considerations.

7.12.3 Energy from Waste

The Council recognises that there is much potential for the capturing and utilisation of waste heat generated by particular premises which could be captured and reused on-site. Such waste heat can be generated from processes including thermal generating stations, site power generation, industrial processes, wastewater systems and waste to energy plants. Proposals for waste to energy development, including anaerobic digestion and dry digestion for farm or other wastes and by- products, will be considered subject to appropriate development management standards and necessary environmental assessments. Suitable areas for such development include those with intensive agricultural activities, such as dairying, pig and poultry farming.

Policy
It is the policy of the Council to:

EC P13	Promote the appropriate development of waste heat technologies and the utilisation and sharing of waste heat in areas where feasibility is demonstrated for its use in the delivery of low carbon district heating technology.

Objectives
It is an objective of the Council to:

EC O41	Promote the circular economy in terms of waste planning and management by promoting the development of local biodigesters subject to the prior grant of an Industrial Emissions License from the EPA.

7.12.4 Energy Efficiency in Buildings

The design, construction and operation of new and existing buildings, have a significant role to play in reducing energy demand and increasing energy efficiency into the future. 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 Part L. The regulations prescribe that a reasonable proportion of the energy consumption to meet the energy performance of a dwelling is provided by renewable energy sources. The Council will promote energy efficient design and recommends consideration of energy design at the earliest stage in the design process through careful site selection and the design of new buildings with regard to orientation so as to maximise solar gain and cooling. Careful consideration should also be given to the adaptability of buildings over time to enable the building stock to be retrofitted to meet higher efficiency standards in the future.

The upgrading and refurbishment of homes and business premises can make a significant contribution in reducing energy demands and costs. The energy performance of existing buildings is one of the foremost considerations in responding to the energy challenges in the county and Kildare County Council is committed to removing fossil fuel burning from its buildings where possible.

Policy
It is the policy of the Council to:

EC P14	Require high levels of energy conservation, energy efficiency and the use of sustainable and renewable energy sources in new and existing buildings.

Objectives
It is an objective of the Council to:

EC O42	Prioritise the reuse and improvement of existing buildings over demolition where possible.
EC O43	Ensure that measures to upgrade the energy efficiency of vernacular buildings acknowledge their inherent vernacular characteristics, techniques and materials and do not have a detrimental physical or visual impact.

EC O44	Require all new development to be designed to take account of the impacts of climate change, and that energy conservation, energy efficiency and energy renewable measures are incorporated in new and existing buildings through the appropriate design and location of new development, in accordance with relevant building regulations and guidelines.

Action
It is an action of the Council to:

EC A5	Report annually on energy usage in all Council public buildings and strive for a significant improvement in energy efficiency in all public buildings in line with the requirements of the National Energy Efficiency Action Plan (NEEAP).

Target
It is a target of the Council to:

EC T2	Achieve a target of 33% improvement in energy efficiency in all buildings in line with the requirements of the National Energy Efficiency Action Plan (NEEAP).
EC T3	Retrofit all existing council housing stock before 2030.

7.12.5 Electric Vehicles

Electric Vehicles (EV) refer to both Battery Electric Vehicles (BEV) and Plug-in Hybrid Electric Vehicles (PHEV). All new cars sold in Ireland will be zero carbon emission or zero carbon emission capable by 2030. The ultimate aim is to decarbonise the national car fleet by 2050 so that it will be low or near zero emissions.

The Council will promote and support the development of the necessary infrastructure required by Government to accommodate fuel cell vehicles. 'Hydrogen fuel cell vehicles' use fuel cells to combine stored hydrogen with oxygen to generate electricity (as opposed to electricity from the public grid which currently is part-generated from fossil fuels), which then powers the vehicle's electric motors. They offer greater range and faster re-fuelling than current electric vehicles.

Policy
It is the policy of the Council to:

EC P15	Promote the necessary infrastructure to support the continued roll out of electric vehicles.

Objectives
It is an objective of the Council to:

EC O45	Promote the delivery of EV charging facilities across the County where demand is proven, both on sites owned and occupied by Kildare County Council and private sites and ensure that EV charging points are installed in such a way that they do not cause significant obstruction to footpaths, cycle lanes, access to Train stations, or bus lanes/stops.

EC O46	Ensure that all new suitable fleet vehicles purchased or replaced in the Council's fleet meets latest procurement guidelines relating to fleet electric vehicles.

7.12.6 Decarbonising Zones

A Decarbonising Zone (DZ) is an area identified by the local authority, in response to action 165 of the 'All of Government Climate Action Plan, 2019'. The DZ is an area within a county which will see the implementation of numerous mitigation measures in support of the national transition objective, 2030 emission reduction targets and the requirements of the National Adaptation Framework. 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, etc. Kildare County Council has identified Maynooth as its inaugural decarbonisation zone and this will be reflected in future local authority projects in the Maynooth area, future local area plans and community engagements.

This plan also promotes 'Sustainable Urban Extensions'. These areas should include exemplar energy production (i.e., district heating) and energy efficiency similar to that proposed for the DZs.

Policy

It is the policy of the Council to:

EC P16	Support the identification and development of decarbonisation zones in Kildare over the lifetime of the Development Plan.

Objectives

It is an objective of the Council to:

EC O47	Work with the Council's Climate Action Office and other stakeholders to identify decarbonisation zones in the County.
EC O48	Ensure that all new developments within decarbonising zone fully commit to the identified aims of those zones.
EC O49	Promote the generation and supply of low carbon and renewable energy alternatives within decarbonization zones.

Action

It is an action of the Council to:

EC A6	Work with the Council's Climate Action Office, and other appropriate stakeholders to prepare an Implementation Plan for the county's designated Decarbonisation Zone.

7.12.7 Peatlands

The inclusion of the midland region on the EU Platform for Coal Regions in Transition will greatly assist in providing for a "Just Transition" for the midland region. The aim of this EU Platform is to provide support for regions heavily involved in fossil fuel industries and provide opportunities for national, regional, and local representatives and EU staff to discuss how these regions can best decarbonise their economies. As part of this Platform, a Regional Transition Team was established to assist the midlands in planning

for the phasing out of peat fired electricity generation. Whilst recognising that the cessation of industrial peat harvesting will have positive environmental impacts, the Council supports the Regional Transition Team in pursuing funding opportunities and actions to mitigate the effects of these job losses, positioning the region to develop alternative forms of employment, attract investment and maximise existing employment opportunities and resources. The Council recognises the great potential that the circa 80,000 hectares of industrial peatlands in the midlands offer in relation to after uses ranging from amenity, tourism, biodiversity services, 'wild areas', flood management, climate mitigation, energy development, industry, education, conservation and many more.

It is the policy of the Council to support the long-term strategic planning for industrial peatlands as per Regional Policy Objective 4.84 of the Regional Spatial Economic Strategy. The Council supports the preparation of a comprehensive "after use" framework plan for the industrial peatlands and associated workshops, office buildings, industrial sites and power stations in the midlands, which meet the environmental, economic and social needs of communities in these areas, and will work with all stakeholders involved in the process in this regard. The Council considers that there is significant potential to develop a Green Energy Hub in County Kildare, which focuses on the higher order aspects of the industry such as research, new technologies, headquarter development, assembly, maintenance and financing.

Policy
It is the policy of the Council to:

EC P17	Support the preparation of a comprehensive "after use" framework plan for the industrial peatlands and associated workshops, office buildings, industrial sites and power stations in Kildare, acknowledging the significant contribution that these expansive lands make towards the special landscape of the Bog of Allen.

Objectives
It is an objective of the Council to:

EC O50	Prioritise the sourcing of E.U. and National funding to support projects which assist the transition of the industrial peatlands and the communities traditionally dependant on them, to sustainable after uses.
EC O51	Support Bord na Mona in the preparation of a long-term strategic plan for the former industrial peatlands.
EC O52	Support Bord Na Mona (and their company Powergen) with their redevelopment proposals for their headquarters at Newbridge, with a view to Kildare County Council promoting the area as a Green Energy Hub, which focuses on the higher order aspects of the renewable energy industry and a climate action training centre.
EC O53	Support the implementation of the recommendations contained in the National Peatlands Strategy 2015 and any subsequent revisions.
EC O54	Require an Ecological Impact Assessment to be carried out and submitted with any planning application for energy infrastructure projects (e.g., wind and solar developments) on bog / peatlands (including former cut-away bogs).

EC O55	Estimate an overall carbon balance when evaluating renewable energy project applications on peatlands, especially those proposed for wind or solar projects.
EC O56	Support the implementation of the 'Local Just Transition Plan for West Kildare' which identifies actions to support and advance sustainable, social, economic, environmental development in the transition to a low carbon future in the West Kildare region.

Action
It is an action of the Council to:

EC A7	Support in conjunction with Offaly County Council and Laois County Council any proposal for a new National Peatlands Park on Bord Na Mona cutaway bogs in Kildare, Laois and Offaly.

7.13 Communications

7.13.1 Data Centres & Energy Supply

It is Government Policy as set out in the National Planning Framework and the Government Statement on "The Role of Data Centres in Ireland" to promote Ireland as a sustainable international destination for Information Communications Technology (ICT) infrastructure such as Data Centres. To date, some of the world's best known companies including Microsoft, Google, IBM and Amazon AWS have chosen Ireland as the location for their European data centres.

Kildare County Council acknowledges that data centres contribute to job creation during construction, maintenance and from associated areas such as research and development, data analytics, customer service, technical support, marketing and sales. Data centres generally need to be located in areas where there exists a significant and sustainable electricity supply, high powered fibre optic cables, good accessibility and on large land banks that are easily developable with future expansion possibilities. In addition, the Council is mindful that Data Centres should avoid sensitive landscapes and environments.

Policy
It is the policy of the Council to:

EC P18	Support the accommodation of Data Centres at appropriate locations in line with the objectives of the National Planning Framework and the Government Statement on the Role of Data Centres in Ireland subject to appropriate Transport and Environmental Impact Assessments.

Objectives
It is an objective of the Council to:

EC O57	Consider applications for data centres having regard to the following criteria: • Accessibility/ease of connection to power • Availability of renewable energy to power any proposed data centre • Availability of high-powered fibre optic infrastructure • Transport/road accessibility

	• Compatibility of surrounding land uses/zoning • Avoidance of designated sites • Availability of significant landbanks • Noise • Visual impact • Flood risk
EC O58	Require that any application for a data centre shall take account of the cumulative visual impact of the proposed connections of the data centre with electricity transmission, renewable energy and broadband infrastructure in the area.
EC O59	Require data centres to consider the use of renewable and sustainable sources of energy to fuel their operations in whole in the first instance or in part where this is not possible and where it has been satisfactorily demonstrated not to be possible.
EC O60	All data centre development applications shall have regard to the DECLG guidance document 'Towards nearly Zero Energy Buildings in Ireland – Planning for 2020 and Beyond', which promotes the increase of near Zero Energy Buildings (nZEB).
EC O61	Ensure that all significant development proposals for Data Centres are accompanied by an Energy Analysis that explores the potential for the development of low carbon district heating networks.

7.14 Energy Supply and Infrastructure

The Council acknowledges the need to utilise electricity for domestic and commercial use within the county. Notwithstanding the Council's desire to promote the growth in renewable energy alternatives, the majority of the county's energy is still generated from non-renewable sources such as the burning of coal, oil, peat and natural gas. For the most part this energy is transferred around the county on the national grid transmission infrastructure. While the main source of electricity generation in Ireland is from non-renewable sources, electricity generation from renewable sources is increasing

EirGrid is responsible for power across the electricity transmission grid, ensuring a safe, secure and reliable supply of electricity to homes, businesses and industry across the country while ESB networks are responsible for carrying out maintenance, repairs and construction on the grid.

A comprehensive development strategy for the country's electricity infrastructure is provided in EirGrid's 2017 publication Grid Development Strategy - Your Grid, Your Tomorrow, along with the associated Grid Implementation Plan for the initial period 2017-2022. In addition, EirGrid's Tomorrow's Energy Scenarios 2017 - Planning our Energy Future considers the range of possible ways that energy usage may change in the future, taking account of energy and climate change policies, economic developments, technology evolution and adaption, and other national and international policies.

The Council recognises that essential future upgrades are required to the electricity grid in the midlands as outlined in EirGrid's Tomorrow's Energy Scenarios 2019 System Needs Assessment and will support EirGrid's programmes identifying grid solutions, in both infrastructural and technological terms, in order to facilitate the electricity targets,

set out in the Government's Climate Action Plan 2019 and the National Energy and Climate Plan 2021-2030.
It is anticipated that growth in the Greater Dublin Area will give rise to demand for increased energy supply and a pressure to connect the region with other regions via the hinterland area that includes County Kildare. The Council will support and facilitate the requirements of the major service providers, such as Eirgrid and ESB, where it is proposed to enhance or upgrade existing facilities or networks or to provide new infrastructure subject to landscape, residential amenity and environmental considerations. The Dunstown 400kV substation is an electrical substation of regional significance and the Council will seek to support any reinforcement of the Greater Dublin Area between Dunstown and Woodland 400 kV substations.

Policy
It is the policy of the Council to:

EC P19	Support the development, reinforcement, renewal and expansion of the electricity transmission and distribution grid to provide for the future physical and economic development of Kildare.

Objectives
It is an objective of the Council to:

EC O62	Support and safeguard the efficient and reliable supply of electricity to all homes and businesses in County Kildare.
EC O63	Support the reinforcement and strengthening of the electricity transmission and distribution network to facilitate planned growth and transmission/distribution of a renewable energy focused generation.
EC O64	Facilitate the delivery of necessary integration of transmission network requirements to allow linkages of renewable energy proposals to the electricity transmission grid in a sustainable and timely manner.
EC O65	Require that developments involving the siting of overhead cables shall minimise visual impact by avoiding areas of high landscape sensitivity, sites and areas of nature conservation and/or archaeological, cultural or heritage interest.
EC O66	Require that all electricity lines of 38kV and over, comply with all internationally recognised standards with regards to proximity to sensitive receptors including dwellings, nursing homes, hospitals, other inhabited structures and schools/crèches.
EC O67	Support the statutory providers of national grid infrastructure by safeguarding strategic corridors (where strategic route corridors have been identified) from encroachment by other development, that might compromise the provision of energy networks.
EC O68	Facilitate the development of grid reinforcements including grid connections and a trans-boundary network into and through the county and between all adjacent counties.
EC O69	Require that in all new developments, local services such as electricity shall be located underground. Multiple services shall be accommodated in shared strips underground and access covers shall be shared, where possible.

EC O70	Consider the removal of trees (singular or in stands) and hedgerows (in part or in whole) only in circumstances where it can be clearly demonstrated that the removal of hedgerow material and or tree(s) is essential for the provision of energy and cannot be designed out. Where proven, the vegetation is to be replaced with equivalent number, species, variety and size as was in situ. Where non-native species are removed, they will be required to be replaced with native species. In all cases, plants of local provenance are to be planted within 1 year of removal and maintained to establishment to negate the habitat and biodiversity loss within 3 years. Existing vegetative or 'stepping-stone' linkages are to be maintained and improved upon to increase wildlife corridors.
EC O71	Require the assessment of all alternative grid connection route options prior to any proposals for grid connection utilising the national road network.
EC O72	Ensure that future upgrades / new overhead cable installations in town centres are located underground to protect the visual amenity of town centres and in particular Heritage Towns and Architectural Conservation Areas.

7.15 Telecommunications Infrastructure

Government policy for the development of telecommunications infrastructure is set out in Telecommunications Antennae and Support Structures – Guidelines for Planning Authorities (1996), and in circular letter PL07/12 which updated certain sections of the guidelines. The planning authority will have regard to the Guidelines and to such other publications and material as may be relevant in the consideration of planning applications for such structures.

Free-standing masts should be avoided in the immediate surrounds of small towns and villages. In the vicinity of larger towns communications providers should endeavour to locate infrastructure in industrial estates on industrial zoned land. Only as last resort when all other alternatives have been exhausted should free standing masts be located in residential areas or close to schools and hospitals.

Policy

It is the policy of the Council to:

EC P20	Support national policy for the provision of new and innovative telecommunications infrastructure and to recognise that the development of such infrastructure is a key component of future economic prosperity and social development of County Kildare.

Objectives

It is an objective of the Council to:

EC O73	Promote and facilitate the provision of appropriate telecommunications infrastructure, including broadband connectivity and other technologies within the county.

EC O74	Co-operate and co-ordinate with relevant bodies regarding the laying of key infrastructural services within towns and villages and, where practicable, to encourage the efficient and shared use of said infrastructural services.
EC O75	Co-operate with telecommunication service providers in the development of the service, having regard to proper planning and sustainable development.
EC O76	Have regard to the provisions of the Telecommunications Antennae and Support Structures Guidelines for Planning Authorities (1996) and circular letter PL07/12 and to such other publications and material as may be relevant during the period of the Plan.
EC O77	Achieve a balance between facilitating the provision of telecommunications infrastructure in the interests of social and economic progress and sustaining residential amenity and environmental quality including to protect the visual amenity of town centres and in particular Heritage Towns and Architectural Conservation Areas.
EC O78	Ensure that the location of telecommunications structures minimises and/or mitigates any adverse impacts on communities, public rights of way and the built or natural environment innovative design solutions will be encouraged.
EC O79	Promote co-location to minimise the number of masts and their visual impact on the environment, by continuing to facilitate appropriate development in a clustered manner, where feasible, respecting the scale, character and sensitivities of the local landscape, whilst recognising the need for economic activity within the county. It will be a requirement for applicants to satisfy the planning authority, through the development management process, that a reasonable effort has been made to share installations. In situations where it is not possible to share a support structure, masts and antennae shall be clustered.
EC O80	Minimise the provision of overground masts and antennae within the following areas: • Areas of high amenity/sensitive landscape areas. • Areas within or adjoining the curtilage of protected structures • On or within the setting of archaeological sites.
EC O81	Discourage the development of individual telecommunications support structures and antennae for private use.
EC O82	Place telecommunications services underground where possible, and that any works carried out on footpaths make provision for future services.
EC O83	Co-operate with service providers in securing a greater range and coverage of telecommunications services in order to ensure that people and businesses have equitable access to a wide range of services and the latest technologies as they become available.
EC O84	Avoid free-standing masts in the immediate surrounds of small towns and villages. In the vicinity of larger towns communications providers should endeavour to locate infrastructure in industrial estates or on industrial zoned land. Only as a last resort when all other alternatives have been exhausted should free standing masts be located in residential areas or close to schools and hospitals.
EC O85	Support the erection of additional masts in some areas to ensure the delivery of ‘’smart metering’ to all areas.

7.16 Gas

Natural gas is the cleanest of all fossil fuels and its chemical composition makes it a more environmentally friendly fuel than oil, coal or peat. The existing gas network within the county has the capacity for connections and local distribution network extensions. The Council acknowledges the importance of gas for both economic development and as a provider of domestic energy within the county. The County's natural gas pipeline infrastructure is under the responsibility of Gas Networks Ireland. Natural gas is available in a number of the county's towns. Gas Networks Ireland continues to assess the feasibility of new connections bringing gas to additional towns.

Policy

It is the policy of the Council to:

EC P21	Support the infrastructural renewal and development of the gas networks in the county, subject to proper planning, heritage, environmental and amenity requirements.

Objectives

It is an objective of the Council to:

EC O86	Support the maintenance of the existing gas network and the further upgrading and expansion of the gas grid across County Kildare to serve existing and future residential, commercial and industrial development.
EC O87	Support and facilitate the production of low carbon renewable biogases such as hydrogen and biomethane, produced largely from agricultural organic matter, that can be exported to the National Grid, subject to appropriate environmental assessments.
EC O88	Support the provision of measures such as the use of renewable gas injection points and Bio-CNG re-fuelling stations at appropriate locations in County Kildare.

7.17 Broadband

Broadband is currently available in many areas throughout the county however it is still recognised that a number of areas of County Kildare do not have adequate coverage. The 2016 Census noted that 57,086 households out of a total of 73,348 had broadband.

Broadband is seen as a key enabling infrastructure for the knowledge-intensive services and activities on which future prosperity will increasingly depend.

Policy

It is the policy of the Council to:

EC P22	Support the roll out of Broadband and Digital infrastructure especially in rural areas of the county.

Objectives

It is an objective of the Council to:

EC O89	Support and facilitate the delivery of the National Broadband Plan as a means of developing further opportunities for enterprise, employment,

	education, innovation, and skills development for those who live and work in rural areas.
EC O90	Facilitate the delivery of high-capacity Information and Communications Technology (ICT) infrastructure, broadband network and digital broadcasting throughout the county at appropriate locations in order to achieve balanced social, economic and environmental development, whilst protecting the amenities of urban and rural areas.
EC O91	Continue to provide public Wi-Fi zones in and around all public buildings.
EC O92	Support the provision of open access fibre connections in all new developments.
EC O93	Have regard to EU Directive 2014/61/EU (SI 391 of 2016), the broadband cost reduction directive, aimed at reducing the costs of deploying high-speed communications networks.