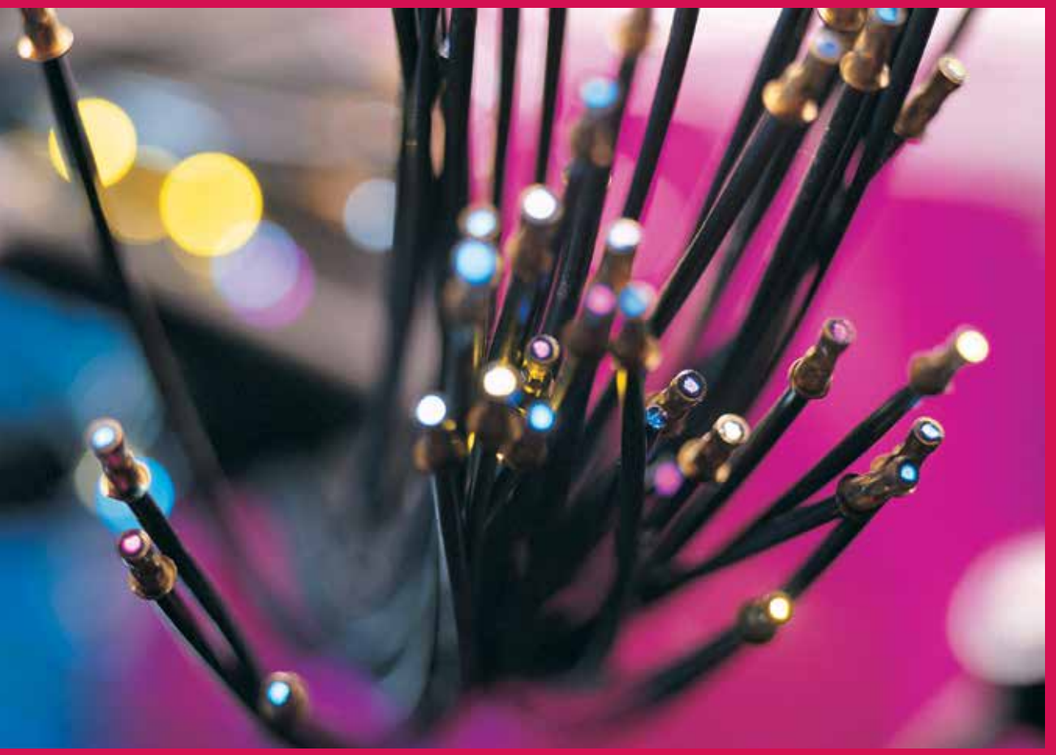
8. ENERGY & COMMUNICATIONS



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.

8.1 BACKGROUND

Climate change is one of the biggest issues facing our environment and is widely regarded as being caused by the warming effect of greenhouse gases. The burning of carbon based fossil fuels is responsible for over half of all greenhouse gas emissions globally. These emissions are mainly generated from energy generation, transportation, industry and residential and commercial buildings. 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 (wind, solar, hydro, and geothermal) across the sectors.

The energy targets set out in EU legislation have been translated into the National Renewable Energy Action Plan (NREAP) 2010 and the National Energy Efficiency Action Plan (NEEAP) 2013-2020 (updated in 2014). Ireland is committed to producing at least 16% of all energy consumed by 2020 from renewable sources. This will be met by 40% from renewable electricity, 12% from renewable heat, and 10% from renewable transport. The EU has recently adopted a target for the year 2030 of at least 27% of energy being renewable energy. In Ireland, by 2013, 7.8% of gross final energy use came from renewable sources, with renewable electricity accounting for 20.9% of all electricity generated. The Council supports programmes for renewable energy production and conservation measures and has established an in-house Energy Management team.

To sustain continued growth, Kildare County Council will require energy to power homes, business, public services and transport. Energy supply needs to be reliable, efficient and robust so that it can facilitate growth across all sectors. Kildare County Council will make every effort to increase energy efficiency and unlock renewable energy potential.

In 2015, the Government published a new White Paper '*Ireland's Transition to a Low Carbon Energy future 2015 – 2030*' which is a complete energy policy update, setting out a framework to guide Government policy up to 2030. Its objective is to guide a transition to a low carbon energy system, while providing secure supplies of competitive and affordable energy. The Government's vision is to transform Ireland into a low carbon society and economy by 2050, with 2030 representing a significant milestone. The aim is to reduce greenhouse gas emissions from the energy sector by between 80% to 95% (compared to 1990 levels) by 2050, while ensuring that secure supplies of competitive and affordable energy remain available to citizens and businesses.

In 2012, the Government published *The Strategy for Renewable Energy 2012 – 2020*. The document includes 36 actions to maximise the economic potential of renewable energy including wind power, bio energy and wave and tidal power. The strategy points out that green energy and clean technology already support an estimated 19,000 jobs in Ireland. Ireland has also agreed with the EU that, by 2020, 40% of all electricity consumed will be generated from renewable power.

8.2 COMMUNICATIONS BACKGROUND

The widespread availability of a high quality Information and Communications Technology (ICT) network within County Kildare will be critical to the development of the county's economy, and will also support social development. Kildare is well served by a number of telecom providers each using various forms of technology including fibre-optic and wireless technology.

The Council recognises that high speed broadband is essential as an economic facilitator in a knowledge-based economy and will continue to work closely with the Department of Communications, Climate Action and Environment to implement the National Broadband Plan.

8.3 STRATEGY

This Plan aims to support the development of indigenous renewable energy resources and the maximisation of electricity production in a manner that is in accordance with the principles of proper planning and sustainable development. It seeks:

- To support national and EU policy for the provision of new and innovative sources of renewable energy.
- To facilitate energy supply and distribution in the county in order to support an efficient and vibrant economy.
- To ensure that the location of renewable energy structures should minimise and/or mitigate any adverse visual and environmental impacts on the built or natural environment.
- To encourage the improvement of energy efficiency of the existing building stock, and to promote energy conservation in the design and development of all new buildings in the county.
- To promote sustainable approaches to residential development through spatial planning, layout, design and construction.

The strategy of the Council for the development of communications is to facilitate the enhancement of telecommunications infrastructure within the county, to maintain economic competitiveness and, in so doing, to support the provision of appropriate infrastructure, including broadband connectivity and other technologies, in association with the appropriate service providers.

8.4 RENEWABLE ENERGY

Due to increased energy requirements and national and EU targets for energy consumption from renewable sources, the electricity supply must be augmented by alternative forms of generation. The Council recognises the range of new and developing technologies that can contribute to minimising greenhouse gas emissions and to securing a greater proportion of our energy needs from renewable resources. Renewable energy can be defined as energy generated from resources that are unlimited, rapidly replenished or naturally renewable and not from the combustion of fossil fuels.

The Department of Communications, Climate Action and Environment is currently preparing a Draft Renewable Electricity Policy and Development Framework which will guide the development of large scale renewable electricity projects on land. The framework will be primarily for the guidance of An Bord Pleanála, planning authorities, other statutory authorities, the general public and persons seeking development consent in relation to such projects. It will seek to broadly identify suitable areas in the State where large scale renewable electricity projects can be developed in a sustainable manner.

Policies: General Energy

It is the policy of the Council to:

ER 1 Respond to the European and National Energy Programme through the County Development Plan with policies and objectives that promote energy conservation, increased efficiency and growth of locally based renewable energy alternatives, in an environmentally and socially acceptable and sustainable manner.

ER 2 Support infrastructural renewal and development of electricity and gas networks in the county, subject to safety and amenity requirements.

ER 3 Support regional, national and international 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.

ER 4 Have regard to the requirements of the service providers in the provision of strategic infrastructure whilst also seeking to ensure that development, including the location of high voltage transmission power lines, is controlled, particularly adjoining existing dwellings, except where no other alternative can be shown to exist.

ER 5 Seek the co-ordinated delivery of infrastructure and services to support sustainable communities.

ER 6 Support and encourage the sustainable development of renewable energy autoproduction 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.

ER 7 Adopt a 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.

ER 8 Have regard to the Renewable Electricity Policy and Development Framework, when adopted, when assessing any renewable energy proposals.

Objective: General Energy

It is an objective of the Council to:

ERO 1 Prepare and implement an Energy Strategy in tandem with the preparation of a Climate Change Adaptation Strategy, following consultation with the Sustainable Energy Authority Ireland (SEAI), the Environmental Protection Agency (EPA) and other relevant stakeholders. The strategy will also be informed by relevant actions contained in the LECP. This will result in a structured response to energy cost changes and support work with central government to reduce market volatility. This could then assist community stakeholders and the renewable energy sector to cooperate in developing appropriate projects of sufficient scale with stable demand and thereby attract employment investment.

8.5 WIND ENERGY

Wind Energy can make a significant contribution to reaching Ireland's renewable energy targets to 2020 and beyond. The Council is currently preparing a Wind Energy Development Strategy which will be informed by the DECLGs "Wind Energy Development Guidelines" which are currently under review. This county-wide strategy will be structured in line with the "Methodology for Local Authority Renewable Energy Strategies" prepared by the Sustainable Energy Authority of Ireland (SEAI). The wind resource potential of the county has been assessed using the SEAI Wind Atlas for Ireland to show areas potentially viable for wind turbine development. Wind Energy Development facilitators such as wind speed and constraints such as proximity to residential properties and heritage sites have been inputted into a GIS model to identify possible suitable locations. The Wind Energy Development Guidelines, once finalised, will determine the appropriate distances and thresholds that will allow the Kildare Wind Energy Development Strategy to be completed.

The Council will encourage small to medium scale autoproduction wind energy developments in industrial and business parks. In appropriate locations these turbines can generate power to be used on-site with any surplus being fed back into the national grid. It is noted that the Planning and Development Regulations include exemptions for uses of this nature. Advances in technologies in this area aid the potential for such development to be designed to suitably integrate with the built fabric of these areas.

Policies: Wind Energy

It is the policy of the Council to:

WE 1 Have regard to the Department of the Environment, Heritage and Local Government's Guidelines for Planning Authorities on Wind Energy Development (or any update of this document) in assessing all planning applications for wind farms.

WE 2 Encourage the development of wind energy in suitable locations in an environmentally sustainable manner and in accordance with Government policy and the Kildare Wind Energy Strategy.

WE 3 Ensure that the assessment of wind energy development proposals will have regard to:

- the sensitivities of the county's landscapes;
- the visual impact on protected views, prospects, scenic routes, historic demesnes as well as local visual impacts;
- the impacts on nature conservation designations, archaeological areas and historic structures, public rights of way and walking routes;
- local environmental impacts, including those on residential properties, such as noise and shadow flicker;
- the visual and environmental impacts of associated development, such as access roads, plant and grid connections;
- the scale, size and layout of the project and any cumulative effects due to other projects;
- the impact of the proposed development on protected bird and mammal species;
- the county's Wind Energy Strategy (when adopted);
- the impact of the grid connection from the proposed wind farm to the ESB network.

WE 4 Encourage small to medium scale wind energy developments within industrial or business parks, and support small community-based proposals in urban areas, provided they do not negatively impact on the environmental quality and visual or residential amenities of the area.

WE 5 Adopt a positive approach to small-scale wind energy developments for autoconsumption purposes, having regard to the proper planning and sustainable development of the area including residential amenity, heritage, environmental and landscape impacts

Objective: Wind Energy

It is an objective of the Council to:

WEO 1 Prepare a Wind Energy Development Strategy and to publish it as a proposed variation of this plan following the completion of the review of the DECLG's Wind Energy Development Guidelines.

8.6 HYDRO ENERGY

There are three ESB hydroelectric power stations located in the county - Golden Falls, Leixlip and Poulaphouca. The Council will encourage the use of rivers for hydro energy production. It is important that hydro schemes, including micro-hydro schemes, incorporate proposals for landscaping of dam walls and ancillary developments and also measures to minimise noise emissions and to reduce the overall impact of schemes. The Council recognises 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 appropriate to their riverside location and setting.

Many of the rivers and tributaries in the county are protected under the Birds and Habitats Directives or another heritage designation such as protected structures and this should be a consideration during the investigation of any possible suitable site.

Policies: Hydro Energy

It is the policy of the Council to:

HD 1 Seek to ensure that proposals for hydro energy installations, including micro-hydro schemes have regard to the free passage of fish and other water-based amenity activities. The Council will have regard to the recommendations of Inland Fisheries Ireland in relation to the protection of fisheries resources, and of the Department of Communications, Climate Action and Environment in assessing proposals.

HD 2 Support the roll out of small-scale hydroelectric projects on rivers, water courses, dams and weirs across the county, where projects do not impact negatively on freshwater species, biodiversity and natural or built heritage features.

HD 3 Seek to ensure that, in sensitive landscapes, powerlines connecting the hydro unit to the national grid will be laid underground.

HD 4 Ensure that the assessment of hydro energy development proposals will have regard to:

- the sensitivity of the landscape;
- the visual impact on protected views, prospects and scenic routes as well as local visual impacts;
- the impacts on nature conservation designations, archaeological areas and historic structures, public rights of way and walking routes.

8.7 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 autoconsumption technologies can make a significant contribution towards a reduction in energy costs and this will continue as technologies develop further. The Council recognises this contribution and will encourage the use of solar energy in residential, commercial and industrial developments. Solar technologies could also be incorporated into the built fabric of existing buildings.

Solar energy technology is no different to other forms of renewable energy technology as it is constantly evolving. Like all forms of development, 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. There are also many environmental considerations associated with solar farms.

Policies: Solar Energy

It is the policy of the Council to:

SE 1 Promote the development of solar energy infrastructure in the county, in particular for on-site energy use, including solar PV, solar thermal and seasonal storage technologies. Such projects will be considered subject to environmental safeguards and the protection of natural or built heritage features, biodiversity views and prospects.

SE 2 Ensure that the assessment of solar energy development proposals will have regard to:

- site selection, by focussing in the first instance on developing solar farms on previously developed and non-agricultural land, provided that it is not of high environmental value;
- where a proposal involves greenfield land, whether (i) the proposed use of any agricultural land has been shown to be necessary and poorer quality land has been used in preference to higher quality land; and (ii) the proposal allows for continued agricultural use where applicable and/or encourages biodiversity improvements around arrays;
- the nature of solar farms as normally temporary structures. Decommissioning and site rehabilitation plans will be required providing for the land be restored to its previous use;
- the proposal's impact through glint and glare on neighbouring uses and on transportation and aviation safety;
- the proposal's visual and landscape impact and the potential to mitigate these impacts through, for example, screening with native hedges;
- the guidance provided in relation to compatibility with landscape designations of Tables 14.3 and 14.4 of Chapter 14 of this plan;
- the need for, and impact of, security measures such as lights and fencing;
- the need to ensure that heritage assets are conserved in a manner appropriate to their significance, including the impact of proposals on protected views and scenic routes etc. As the significance of a heritage asset derives not only from its physical presence, but also from its setting, careful consideration should be given to the impact of large scale solar farms on such assets, e.g. historic demesnes. Depending on their scale, design and prominence, a large scale solar farm within the setting of a heritage asset may cause substantial harm to the significance of the asset;
- the need to consider ecology so as to avoid or minimise damage on important species or protected habitats;
- the energy-generating potential, which can vary for a number of reasons including latitude and aspect;
- the design of the scheme needs to be carefully considered including layout, scale, land cover panel, height, landscaping, access roads, noise, cumulative impacts and the design of ancillary elements;

SE 3 Encourage the use of passive solar design principles for residential building(s).

SE 4 Support and encourage the installation of solar collectors and panels for the production of heat or electricity in residential and commercial buildings, in line with relevant design criteria.

8.8 BIO ENERGY

Bio energy may be defined as energy derived from biomass. Bio energy technologies may be 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 for a transport fuel.

Policies: Bio Energy

It is the policy of the Council to:

BE 1 Facilitate the development of projects that convert biomass to energy, subject to proper planning considerations.

BE 2 Locate biomass installations in areas that do not affect residential or visual amenity and which are served by public roads with sufficient capacity to accommodate increased traffic flows.

BE 3 Promote domestic biological treatment including composting of kitchen and garden waste.

8.9 ENERGY FROM WASTE

The Council recognises that there is much potential for the capturing and utilisation of waste heat generated by 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. Suitable areas for such development include those with intensive agricultural activities, such as dairying, pig and poultry farming.

Policies: Energy from Waste

It is the policy of the Council to:

EW 1 Facilitate and support sustainable small-scale waste to energy proposals in suitable locations, subject to national and regional policy, normal siting, design, environmental and planning considerations.

EW 2 Promote the development of waste heat technologies and the utilisation and sharing of waste heat in new or extended industrial and commercial developments, where the processes associated with the primary operation onsite generates waste heat.

8.10 ENERGY EFFICIENCY IN BUILDINGS

The design, construction and operation of new 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 (2007-2011). 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 promotes 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. 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.

Policies: Energy Efficiency in Buildings

It is the policy of the Council to:

EB 1 Ensure that new development is designed to take account of the impacts of climate change, and that energy efficiency and renewable energy measures are incorporated in accordance with national building regulations, policy and guidance.

EB 2 Adopt and maintain energy conservation measures within Council owned developments and to encourage developers to adopt measures to enhance energy conservation through building design.

EB 3 Provide energy conservation and efficiency measures and facilitate innovative building techniques that promote energy efficiency and the use of renewable energy sources, in accordance with national policy and guidelines.

Objective: Energy Efficiency in Buildings

It is an objective of the Council to:

EBO 1: Seek to achieve the objectives of the Building Energy Rating system insofar as it relates to public buildings in the control of the Local Authority and to support and encourage all other public and non-public buildings in achieving their energy rating requirements.

8.11 GEO THERMAL ENERGY

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 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. It can be found anywhere 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 this country 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.

Policies: Geo Thermal Energy

It is the policy of the Council to:

GT 1 Facilitate large and smaller scale geothermal energy generating developments, subject to the proper planning and sustainable development of the area and consideration of environmental and ecological sensitivities.

GT 2 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.

8.12 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 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.

8.12.1 Gas

The natural gas pipeline infrastructure is under the responsibility of Gas Networks Ireland division of Ervia[1] and the Cork – Dublin high pressure gas transmission pipeline that runs through the county. 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. 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.

Policy: Gas

It is the policy of the Council to:

GS 1 Support the infrastructural renewal and development of the gas networks in the county, subject to proper planning, heritage and amenity requirements.

8.12.2 Electricity Supply and Infrastructure

The Government Policy Statement on the Strategic Importance of Transmission and Other Energy Infrastructure (2012) acknowledges the strategic and economic importance of investment in networks and energy infrastructure. The Government endorses the major investment underway and proposed in the high voltage electricity system under Eirgrid's Grid 25 Programme.

The Council acknowledges the strategic need to have available adequate electricity for domestic and commercial use within the county to enable the further development of the county.

The demand for electricity continues to grow at a national, regional and local level. Ireland's electricity network is currently undergoing a programme of renewal through upgrade of the existing network, along with the construction of new lines and transmission/distribution stations.

[1] Formerly Bord Gais Eireann

Kildare is one of the best served locations in terms of the transmission network and has the following notable features:

- One of the two 400kV lines from Moneypoint terminates at Dunstown, Naas.
- Dunstown steps down from 400kV to 220kV and transmits power through Kildare and into Dublin via a network of 100kV and 220kV lines.
- The highest voltage lines of the Eirgrid Transmission System serve Kildare and thus enable the county to have the potential to be in a position to meet future electricity demands[2]. However it should be noted that there may be a future requirement to reinforce the local network in order to support or optimise Dublin flows.

GRID 25 is the Development Strategy of Eirgrid (published in 2008), the national transmission system operator of the wholesale power market. Eirgrid's development strategy recognises the need to strike a sustainable balance between cost, reliability, security and environmental impact in the provision of electricity transmission networks. Eirgrid is currently in the process of reviewing its current grid development strategy with a new draft strategy published in March 2015 for consultation. In addition, Eirgrid is also preparing a new Grid Implementation Plan which will replace its original "Grid 25 Implementation Programme 2011-2016" which is a regional spatial 6 year development plan for grid development.

It is recognised that the development of transmission lines for electricity interconnectors will contribute to the on-going development of a single European Electricity Grid and single European Electricity Market in compliance with Directive 2009/72/EC concerning common rules for the internal market in electricity and Regulation 714/2009 on conditions for access to the network for cross-border exchanges in electricity. The development of electricity interconnectors will be informed by the 10 year Network Development Plan managed by the European Network of Transmission System Operators for Electricity (ENTSO-E).

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.

[2] Source: Availability of Services in Kildare County, MDM Consulting Engineers 13/01/10

The Council will support and facilitate the requirements of the major service providers, such as Gas Networks Ireland, 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 including where appropriate environmental assessments in accordance with EU Directives i.e. EIA, Habitats and Floods Directives. The Council recognises the need for the development and renewal of transmission networks, in order to meet both economic and social policy goals.

Planning applications involving the siting of overhead cables should seek to minimise visual impact by avoiding areas of high landscape sensitivity, sites and areas of nature conservation and/or archaeological interest. The route of the lines should also follow natural features of the environment, with preference given to undergrounding services where appropriate. All electricity lines of 38kV and over shall comply with all internationally recognised standards with regard to proximity to sensitive receptors including dwellings, nursing homes, hospitals, other inhabited structures and schools/crèches. The removal of significant lengths of hedgerow should be avoided where possible. However if hedgerows/trees are removed during construction they shall be replaced with native species that reflect those occurring in the surrounding area.

ESB Networks is the owner of the Electricity Network and, as the licensed Distribution System Operator, is responsible for planning, operating and maintaining all the distribution networks. In Kildare this includes the 110kV and 38kV systems, the medium voltage (10kV and 20kV) network, and the low voltage electricity network in the county. ESB Networks is engaged in continual upgrade and development of the Medium Voltage Network. It is envisaged that Ireland's MV (Medium Voltage) overhead electricity network will be either converted to 20kV or refurbished, in order to ensure a secure, high quality supply with adequate capacity for existing and future loads. The recent increase in transformer capacity at Naas 38kV station and the development of the 110kV/MV Monread Station has also reinforced the network in County Kildare.

Policies: Electricity Supply and Infrastructure

It is the policy of the Council to:

TN 1 Ensure that planning applications involving the siting of electricity power lines and other overhead cables and their support structures, consider in full, the impacts of such development on the landscape, nature conservation, archaeology, residential and visual amenity.

TN 2 Seek the undergrounding of all electricity, telephone and TV cables wherever possible and specifically in areas of sensitivity, in the interest of visual amenity. Provision should be made for the unobtrusive siting of transformer stations, pumping stations and other necessary service buildings. Pole mounted equipment (such as transformers) will not be permitted.

TN 3 Recognise the development of secure and reliable electricity transmission infrastructure as a key factor for supporting economic development and attracting investment to the area and to support the infrastructural renewal and development of electricity networks in the county.

TN 4 Support the sustainable improvement and expansion of the high voltage electricity transmission power lines and distribution network, subject to human health, landscape, residential amenity, tourism, equine industry and environmental considerations.

TN 5 Require developers to outline in any proposed planning application for high voltage transmission lines:

(a) the key drivers for the project;

(b) the manner in which the preferred technological solution has been arrived at, including considerations of alternatives;

(c) How environmental assessments have informed options relating to undergrounding/partial undergrounding/overgrounding of transmission infrastructure;

(d) how the preferred route and substation requirements within the county were selected and justification for same, having regard to paragraph (c) above;

(e) the cumulative impact of the proposal with other planned projects. Where impacts are inevitable mitigation measures shall be clearly outlined.

TN 6 Have regard to the requirements of the service providers in the provision of strategic infrastructure while also seeking to ensure that development, including the location of high voltage transmission power lines, is controlled, particularly adjoining existing dwellings, except where no other alternative can be shown to exist.

TN 7 Ensure that the ability of the area to absorb overhead transmission lines is considered with reference to landscape character designations of the county as outlined in Chapter 14 of this plan or following any forthcoming National Landscape Guidelines issued pursuant to Section 28 of the Planning and Development Act 2000 (as amended).

TN 8 Ensure that the landscape and visual assessment of any proposal focus on the potential of the development to impact upon county landscape designations and important designated sites. Proposed overhead lines shall as far as possible seek to avoid areas of sensitivity (e.g. areas of high amenity, high sensitive landscape designations, scenic views, protected structures etc). Where avoidance is not possible full consideration shall be given to undergrounding the lines.

TN 9 Have regard to the potential impact of proposed overhead high voltage transmission powerlines on the established equine industry in the county, such as the sport horse and the thoroughbred bloodstock sectors, and to ensure that appropriate mitigation measures are provided to mitigate any adverse impact on this important industry.

TN 10 Ensure that the developers of high voltage transmission overhead lines seek to minimise the visual impact of the lines. In this regard detailed consideration shall be given to appropriate support structure designs and the reason for the selection of particular support structure design over other designs. Where appropriate alternative solutions including monopole designs or such other designs or mitigation measures shall be given due consideration.

TN 11 Ensure that additional infrastructure and/or substation sites that are required to accommodate high voltage transmission power lines shall be detailed, including consideration of alternatives. Mitigation measures shall be outlined to minimise the visual impact of the multiplicity / convergence of overhead lines including any associated tie-ins at substations. Where there is a multiplicity and or convergence of overhead lines the undergrounding of existing and/or proposed lines shall be investigated by applicants.

TN 12 Ensure that proposals for development which would be likely to have a significant effect on nature conservation-sites and / or habitats or species of high conservation value will only be approved if it can be ascertained, by means of an Appropriate Assessment or other ecological assessment, that the integrity of these sites will not be adversely affected except where there are imperative reasons of overriding public interest (IROPI).

TN 13 Seek compliance with any statutory government guidelines issued by the DECLG pursuant to Section 28 of the Planning and Development Act 2000 (as amended). This includes the review by the expert group on "Health Effects of Electromagnetic Fields", Department of Communications, Energy and Natural Resources (2007) and any further reviews.

TN 14 Seek to ensure that there is adequate electrical infrastructure and network capacity to provide a reliable supply to all those working and living in the county, and thereby support national economic growth and social development.

Objective: Electricity Supply and Infrastructure

It is an objective of the Council to:

TNO 1 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.

8.13 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 or 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.

Policies: Telecommunications

It is the policy of the Council to:

TL 1 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.

TL 2 Promote and facilitate the provision of an appropriate telecommunications infrastructure, including broadband connectivity and other technologies within the county.

TL 3 Co-operate and co-ordinate with relevant bodies regarding the laying of key infrastructural services within towns and villages and, where practicable, encourage the efficient and shared use of said infrastructural services.

TL 4 Co-operate with telecommunication service providers in the development of the service, having regard to proper planning and sustainable development.

TL 5 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.

TL 6 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.

TL 7 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.

TL 8 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 that a reasonable effort has been made to share installations. In situations where it is not possible to share a support structure, applicants should be encouraged to share a site or to locate adjacently so that masts and antennae may be clustered.

TL 9 Minimise the provision of overground masts and antennae within the following areas:

- Areas of high amenity/sensitive landscape areas (refer to Chapter 14);
- Areas within or adjoining the curtilage of protected structures;
- On or within the setting of archaeological sites.

TL 10 Discourage the development of individual telecommunications support structures and antennae for private use.

TL 11 Require all telecommunications services to be placed underground and that any works carried out on footpaths make provision for future services.

8.14 BROADBAND

Broadband is currently available in many areas throughout the county. However a number of areas of the county do not yet have adequate coverage. The 2011 Census noted that 71% of houses in the county had broadband.

Broadband is seen as a key enabling infrastructure for the knowledge-intensive services and activities on which future prosperity will increasingly depend. The National Broadband Plan began a formal procurement process in Q4 2015. The plan aims to cover 96% of Ireland's national land mass and aims to deliver 30Mbps download speeds and 6Mbps upload speeds. The last of the businesses and homes targeted are planned to be connected by 2020.

Policies: Broadband

It is the policy of the Council to:

BR 1 Assist in the provision of information and communication technologies throughout the county.

BR 2 Co-operate with the Department of Communications, Climate Action and Environment and public and private agencies where appropriate, in improving high quality broadband infrastructure throughout the county.

BR 3 Facilitate the delivery of high capacity Information and Communications Technology (ICT) infrastructure, broadband network and digital broadcasting throughout the county.

BR 4 Support the provision of the National Broadband Plan in so far as it relates to the county.

BR 5 Cooperate with service providers in securing a greater range and coverage of telecommunications services in order to ensure that people and business have equitable access to a wide range of services and the latest technologies as they become available.

Objective: Broadband

It is an objective of the Council to:

BRO 1 Seek to provide public wifi zones in and around all public buildings.