

CHAPTER 8

Energy and Communications

Aim: *To encourage and support energy and communications efficiency and to achieve a reasonable balance between responding to central Government policy on renewable energy and communications and enabling resources to be harnessed in a manner consistent with the proper planning and sustainable development of the area.*

8.1 Energy Background

The development of renewable energy sources is a priority at national and European level for both environmental and energy policy reasons.

The Government's primary policy on energy is set out in the Energy White Paper *Delivering a Sustainable Energy Future for Ireland – The Energy Policy Framework (2007–2020)*. It sets out a broad energy policy framework for the long-term development of the energy sector, including power generation, energy efficiency in transport and the built environment. It seeks to make a substantial contribution to reducing greenhouse gas emissions through energy efficiency improvements, changes in fuel mix and the increased use of renewable energy.

The *National Climate Change Strategy 2007–2012* also focuses on encouraging renewable energy sources. A more recent document entitled *The National Energy Efficiency Action Plan (2009–2020)* also seeks to improve energy efficiency across a number of sectors to ensure a sustainable energy future.

Legislation in this area is due to be introduced in Ireland following EU Directive 2009/28/EC on the promotion of the use of energy from renewable sources. The Directive identifies a target for Ireland of 16% of its energy consumption to be from renewable sources by 2020. It also requires that at least 20% of Ireland's electricity be generated from renewable sources by 2020. In order to achieve this target, Kildare County Council is committed to developing a more diverse range and combination of energy sources.

8.2 Communications Background

Population growth and rising economic activity in the county has increased the demand for mobile services and telecommunications infrastructure.

Ireland is well served with international telecommunications connectivity via a number of sub-sea fibre optic cable systems. Two new Ireland / UK cables are planned. They are scheduled to go live by 2012.

The county is served by a number of telecom providers, each using various forms of technology including fibre optic and wireless technology. Two significant mast sites are located within the county, at Cappagh and Dunmurry Hill, both of which are primary collection masts for telecoms traffic from the west of the country to Dublin²⁰.

The provision of an efficient broadband service is critical in the development of a knowledge based economy with investment in telecommunications infrastructure being necessary. To this end, the need to build new infrastructure to provide increased capacity in order to raise the quality of coverage and to meet the demand for services is recognised.

²⁰ Source: *Availability of Services in Kildare County (Draft)*
MDM Consulting Engineers 13/01/10

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 Energy Supply

Kildare's current energy supply is provided from a number of sources including the ESB's Liffey and Poulaphouca hydroelectric stations and a natural gas pipeline from Cork to Dublin which pass through the east of the county.

While the main source of electricity generation in Ireland is from non-renewable sources such as the burning of coal, oil, peat and natural gas, electricity generation from renewable sources is increasing.



8.5 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.

8.5.1 Wind Energy

In 2006, the Department of the Environment, Heritage and Local Government published *Wind Energy Guidelines*. In general, areas in close proximity to grid connections and outside designated heritage sites may be suitable locations for the provision of wind energy. It is recognised however that certain areas, which are suitable for the exploitation of large-scale renewable energy, may also coincide with the county's designated sensitive and scenic areas.

8.5.2 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 measures to minimise noise emissions and to reduce the overall impact of schemes.

8.5.3 Solar Energy

Solar energy provides a suitable source of energy for buildings. The Council will encourage solar energy in commercial and residential developments, subject to design and other considerations.

8.5.4 Bio Energy

Types of biomass that are used to provide bio energy include biodegradable waste streams, recycled wood, agricultural residues, agri food effluents, manures, the organic fraction of municipal solid waste, separated household waste, sewage sludge and purpose grown energy crops including short rotation forestry, miscanthus, willow and grass. Biomass can be burned to produce heat that is used to create steam to turn turbines and produce electricity. It can produce electricity and / or heat. Liquid bio fuels can also be derived from biomass crops such as oilseed rape. Bio energy initiatives contribute to the achievement of the aims set out in the *National Climate Change Strategy Plan 2007–2012*.

8.5.5 Energy from Waste

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.

8.5.6 Small-Scale Renewable Energy

The classification of small-scale renewable energy sources is specified in the Planning and Development Regulations (Exempted Development), 2007. The provision of each of the following for domestic use is exempt from planning permission, subject to certain conditions as set out in the Planning and Development Regulations 2007:

- Stand-alone wind turbines
- Building mounted wind turbines
- Building mounted solar panels
- Stand alone solar panels
- Ground source heat pumps
- Biomass (includes fuel storage tanks/structures)

Planning and Development Regulations 2008 provide exemptions subject to certain conditions, for wind turbines, meteorological masts, combined heat and power plants, solar panels and biomass boiler units for industrial, commercial and public buildings.

8.5.7 Energy Efficiency in Buildings

Research has indicated that CO₂ emissions from buildings across the EU could be reduced by 22% through improved energy efficiency. Revisions of Part L of the Building Regulations in 2008 have raised the standards to which buildings are to be designed and constructed. The Government has taken further measures to reduce CO₂ emissions by implementing schemes such as the EU Energy Performance of Building Directive (EPBD). As part of the Directive, a Building Energy Rating, which is effectively an energy efficiency label, will be required at the point of sale or rental of a building, or on completion of a new building.

8.5.8 Ground Source Heating Systems

The Council will encourage the provision of ground source heating pumps for space heating and cooling, as well as water heating for both residential and commercial developments, subject to the protection of water quality and adherence to any other relevant planning and design requirements which may arise during the period of the Plan.

8.6 Non-Renewable Energy

Non-renewable energy refers to energy that can be used only once e.g. burning of fossil fuels. Most non-renewable sources of energy produce greenhouse gases when they are used. Non-renewable energy sources include gas, oil, peat etc.

Over 90% of Ireland's total energy demand is met from imported fossil fuels, with oil accounting for around 56% of the country's total primary energy supply (2007).

8.6.1 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 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 Cork-Dublin high pressure gas transmission pipeline runs through the county. The feeding of gas to the pipeline is via the high pressure gas transmission pipeline from Scotland to Ireland given that the Kinsale Head Gas Field is depleted.

Responsibility for the natural gas pipeline infrastructure lies with Bórd Gáis Eireann (Bórd Gáis). While natural gas is already available in a number of towns in the county, Bórd Gáis continues to assess the feasibility of new connections, bringing gas to additional towns.

8.6.2 Electricity

The Council acknowledges the need to utilise electricity for domestic and commercial use within 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 and upgrade of the existing network, plus construction of new lines and transmission/distribution stations.

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

- One of the two 400kV lines from Moneypoint terminates at Dunstown, Naas, in the county.
- 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 ²¹. 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.

²¹ Source: *Availability of Services in Kildare County Draft MDM Consulting Engineers 13/01/10*

One of the major projects in the current investment programme by the ESB is the Medium Voltage Network Renewal Project. It will see all of Ireland's MV (Medium Voltage) overhead electricity network either converted to 20kV or refurbished, in order to ensure a secure, high quality supply with adequate capacity for existing and future loads.

Upgrading Low Voltage (LV) lines throughout the country to improve the quality of electricity supply, particularly in rural areas is also ongoing.

GRID 25 is the Development Plan of Eirgrid, the national transmission system operator and operator of the wholesale power market. Eirgrid's development plan recognises the need to strike a sustainable balance between cost, reliability, security and environmental impact in the provision of electricity transmission networks.

Future development of the grid network is of vital strategic importance. The GRID 25 Plan contains a number of planned investments including:

- Reinforcement works on the network to cater for expected growth in Kildare and North Wicklow.
- Development of a new 400/111kV station near Portlaoise, Co. Laois which will reinforce the network in Kildare and will be connected into a planned 110kV line between Portlaoise and Athy.

8.7 Service Providers and Energy Facilities

The Council will support and facilitate the requirements of the major service providers, such as Bórd Gáis and the ESB, where it is proposed to enhance or upgrade existing facilities or networks.

8.8 Transmission Infrastructure

Planning applications involving the siting of overhead cables, should seek to minimise visual impact by seeking to avoid 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 high voltage lines of 38kV and over, should comply with all internationally recognised standards with regard to proximity to dwellings and other inhabited structures. 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 the species occurring in the surrounding area.

8.9 Telecommunications and Supporting Infrastructure

Government policy for the development of telecommunications infrastructure is set out in *Telecommunications Antennae and Support Structures – Guidelines for Planning Authorities (1996)*. 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.

8.10 Broadband

Broadband is currently available in many areas throughout the county. However a number of areas of the county have yet to be covered. A total of 11 district electoral divisions in the south of the county have been identified under the *National Broadband Scheme 2008*. Broadband coverage is available to all residential and business premises within the National Broadband Scheme since October 2010.

A strategy *Next Generation Broadband – Gateway to a Knowledge Ireland* was published in 2009 in order to provide a framework for accelerating the transition to next generation broadband to achieve the objectives of *Building Ireland's Smart Economy*. Broadband is seen as a key enabling infrastructure for the knowledge-intensive services and activities on which future prosperity will increasingly depend.

8.11 Energy Policies

8.11.1 General Energy Policies

It is the policy of the Council:

- ER 1: To support infrastructural renewal and development of electricity and gas networks in the county, subject to amenity requirements.
- ER 2: To 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 acceptable manner.
- ER 3: To adopt and maintain energy conservation measures within the Council's own developments and to encourage developers to adopt measures to enhance energy conservation through building design.
- ER 4: To have regard to the requirements of the service providers in the provision of strategic infrastructure whilst also seeking to ensure that development, particularly the location of high tension power lines, is controlled, particularly adjoining existing dwellings, except where no other alternative can be shown to exist.
- ER 5: To require services, including electricity, telephone and TV cabling to be located underground, where feasible.
- ER 6: To seek the co-ordinated delivery of infrastructure and services to support sustainable communities.

ER 7: To provide energy conservation and efficiency measures and facilitate innovative building techniques that promote energy efficiency and use of renewable energy sources in accordance with national policy and guidelines.

ER 8: To 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.

8.11.2 Wind

It is the policy of the Council:

WE 1: To have regard to the Department of the Environment, Heritage and Local Government Guidelines for Planning Authorities on *Wind Energy Development* (2006) in assessing all planning applications for wind farms.

WE 2: To encourage the development of wind energy in suitable locations in an environmentally sustainable manner and in accordance with Government policy.

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

- the sensitivity of the landscape;
- the visual impact on protected views, prospects, 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;
- local environmental impacts, including 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, any cumulative effects due to other projects;
- the impact of the proposed development on protected bird and mammal species.

8.11.3 Hydro

It is the policy of the Council:

HD 1: To 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 the Inland Fisheries Ireland in relation to the protection of fisheries resources, and the Department of Communications, Energy and Natural Resources in assessing proposals.

HD 2: To seek to ensure that, in sensitive landscapes, powerlines connecting the hydro unit to the national grid will be laid underground.

HD 3: To 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, 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.

8.11.4 Solar

It is the policy of the Council:

SE 1: To encourage use of passive solar design principles for residential building(s).

SE 2: To 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.

8.11.5 Bio-Energy

It is the policy of the Council:

- BE 1: To facilitate the development of projects that convert biomass to energy subject to proper planning considerations.
- BE 2: To 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: To promote domestic biological treatment including composting of kitchen and garden waste.
- BE 4: To support proposals for the production of bio fuels through the growth of energy crops in an environmentally sustainable manner.

8.11.6 Waste to Energy

It is the policy of the Council:

EW 1: To 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.

8.11.7 Small Scale Renewable Energy

It is the policy of the Council:

RE 1: To adopt a positive approach to renewable energy proposals, having regard to the proper planning and sustainable development of the area including environmental and landscape impacts and impacts on protected or designated heritage areas / structures.

8.11.8 Energy Supply Facilities

It is the policy of the Council:

SP 1: To encourage the provision of energy supply facilities in association with the appropriate service providers in order to ensure satisfactory levels of supply and to minimise constraints for development.

8.11.9 Transmission Networks

It is the policy of the Council:

- TN 1: To ensure that planning applications involving the siting of electricity power lines and other overhead cables, consider in full, the impacts of such development on the landscape, nature conservation, archaeology, residential and visual amenity.
- TN 2: To seek the undergrounding of all electricity, telephone and TV cables wherever possible in all new development 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: To 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.

8.12 Communications Policies

8.12.1 Telecommunications Policies

It is the policy of the Council:

- TL 1: To 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.
- TL 2: To promote and facilitate the provision of an appropriate telecommunications infrastructure, including broadband connectivity and other technologies within the county.
- TL 3: To co-operate and co-ordinate with relevant bodies regarding the laying of key infrastructural services within towns and villages.
- TL 4: To co-operate with telecommunication service providers in the development of the service, having regard to proper planning and sustainable development.
- TL 5: To have regard to the provisions of the *Telecommunications Antennae and Support Structures Guidelines for Planning Authorities (1996)* and to such other publications and material as may be relevant during the period of the Plan.
- TL 6: To 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: To ensure that the location of telecommunications structures should minimise and / or mitigate any adverse impacts on communities, public rights of way and the built or natural environment.
- TL 8: 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 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: To 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: To generally restrict planning permission for telecommunications infrastructure and support structures to a temporary period of not more than five years.
- TL 11: To discourage the development of individual telecommunications support structures and antennae for private use.
- TL 12: To require all telecommunications services to be placed underground and that any works carried out on footpaths make provision for future services.

8.12.2 Broadband

It is the policy of the Council:

- BR 1: To assist in the provision of information and communication technologies throughout the county.
- BR 2: To co-operate with the Department of Communications, Energy and Natural Resources and public and private agencies where appropriate, in improving high quality broadband infrastructure throughout the county.
- BR 3: To facilitate the delivery of a high capacity Information and Communications Technology (ICT) infrastructure and broadband network and digital broadcasting throughout the county.

8.13 Energy Objectives

It is an objective of the Council:

- ENO 1: To examine the possibility of designating appropriate areas of the county as being suitable for the production of wind energy.
- ENO 2: To 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.

ENO 3: To 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.

ENO 4: To prepare and implement an Energy Strategy, as a support to a structured response to energy cost changes and to 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 a stable demand and thereby attract employment investment.

8.14 Communications Objectives

It is an objective of the Council:

- CO 1: To promote and facilitate the provision of an appropriate telecommunications infrastructure, including broadband connectivity and other technologies within the county.
- CO 2: To seek to provide public WiFi zones in and around all public buildings.
- CO 3: To support the provision of the National Broadband Scheme insofar as it relates to the county and to co-operate with the Department of Communications, Energy and Natural Resources in any future additions to the scheme.