Energy for generations

ESB Group Property

Kildare County Development Plan 2023-2029

Submission on behalf of ESB to the Kildare County Development Plan 2023–2029
24/05/2022

Contents

1. INTRODUCTION

Electricity Supply Board (ESB) welcomes this opportunity to make a submission to the Draft Kildare County Development Plan 2023 – 2029. ESB is a landowner and employer in Kildare with property and infrastructural assets throughout the County. As a strong, diversified, vertically integrated utility, ESB operates right across the electricity market; from generation, through transmission and distribution to supply of customers. In addition, ESB uses its networks to carry fibre for telecommunications and to provide charging infrastructure for electric vehicles. ESB is Ireland's leading electricity utility with approximately 3.2 million customers throughout the island of Ireland.

ESB broadly supports the vison included in Draft County Development Plan (CDP). However, outlined below are observations regarding strategic issues that should be taken into consideration in the preparation of the final CDP 2023 - 2029.

1.1 Overview of ESB Strategy

ESB is Ireland's foremost energy company and the largest supplier of renewable electricity in Ireland. Through innovation, expertise and investment, ESB is leading the way in developing a modern, efficient electricity system that is capable of delivering sustainable and competitive energy supplies to customers. ESB operates a renewable energy portfolio that has the capacity to supply over 1,003 MW of green energy to the homes, farms, hospitals, schools and businesses of Ireland and the United Kingdom.

ESB is embracing new technologies that are revolutionising the energy industry, including smarter electricity networks. We are investing in sustainable energy solutions that harnesses the power of solar, wind, wave and storage to provide a cleaner future. Our objective is to develop and connect renewables to decarbonise the electricity system by 2040. ESB's progress towards achieving carbon net-zero operations is consistent with the objectives of the National Planning Framework (NPF) and Regional Spatial & Economic Strategy (RSES) for the Eastern and Midlands Region.

1.2 Generation, Transmission & Distribution

As recognised in the Draft CDP, there are three hydro generation stations on the Liffey in county Kildare. These comprise two 15MW generators located at Poulaphouca and two 4MW generators each at Golden Falls and Leixlip, giving a total installed capacity of 38MW.

Mirroring Government objectives, by 2030 ESB will develop an additional 4 GW of new onshore and offshore wind and solar PV renewable assets to add to our 1 GW of renewables operating today. By 2030, 63% of our electricity will come from renewable sources and will be a net zero producer of electricity by 2040. ESB remains committed to completely transforming our generation portfolio, replacing old, inefficient plant with a mixture of renewables and high-efficiency gas capacity.

To support the transition of the National Grid to a low-carbon future ESB is developing assets such as battery storage and flexible gas fired units that respond quickly to system demand. These will be key to facilitating large scale renewables in the future.

ESB is the asset owner of the Transmission System and Distribution System and ESB Networks provides the essential service of building, managing and maintaining the electricity networks in Kildare and throughout Ireland. ESB Networks is unique in that it is in direct contact with all electricity users. The electricity network extends to over 180,000km across the Republic of Ireland and in 2020 over 28,500 new residential and business connections were completed. The focus of recent investment in the network was on continuing the reinforcement of the system to facilitate the connection of new renewable electricity generation.

1.3 ESB Roll-out of EV Infrastructure

ESB, has developed a network of almost 1,350 electric vehicle charge points across the island of Ireland. The Irish Government has set stretching targets for EV adoption in Ireland to address energy demand and emissions from transport. To help meet the increase in electric vehicles, ESB, with the support of the Government's Climate Action Fund, is rolling out high power charging hubs across the country. These hubs will be capable of quickly charging between two and eight vehicles simultaneously and will facilitate vehicles travelling longer distances across Ireland's National and Motorway routes.

ESB's plans also include investment in green hydrogen production, storage and generation facilities by the end of this decade. A clean, zero-carbon fuel, green hydrogen will be produced from renewable energy. This is fully aligned with the EU strategy launched in 2020 on energy sector integration which prioritises a more 'circular' energy system with energy efficiency at its core. Greater electrification using a renewable fuel like hydrogen for end-use applications where direct electrification is not feasible (e.g., heavy goods transport, high temperature industrial heat and zero carbon dispatchable electricity generation) will play a significant role in becoming carbon-neutral by 2050.

1.4 ESB Telecoms & Telecommunications Infrastructure

ESB Telecoms has grown from its original function of providing a communications system for ESB to become one of Ireland's leading independent telecommunications infrastructure providers with over 400 locations nationwide. ESB Telecoms now provides network solutions for a wide variety of mobile network operators, wireless broadband providers and public sector business activities. All sites developed by ESB Telecoms are made available to third party mobile phone and wireless broadband operators as points for co-location. Our open policy of sharing infrastructure limits the overall number of telecoms structures appearing in urban and rural landscapes.

Our telecoms fibre network wrapped on our 110kV electricity network provides an extensive network throughout Ireland with international connectivity to the UK. In addition, SIRO (a joint venture between ESB and Vodafone) is bringing 100% fibre-to-the-building to 50 towns and cities across Ireland, including many towns in Co. Kildare. SIRO will continue to accelerate this roll-out in 2022.

2. PLANNING POLICY & PROPOSED DRAFT CDP

ESB acknowledges that the process of preparing a new County Development Plan, as set out in Chapter 1 *Introduction & Context*, shall be informed by the hierarchy of national, and regional planning policy. This is set out in sections 1.4.2 and 1.4.3 respectively.

The Draft CDP sets out the Vision and Strategic Aims for the County. It highlights that the plan forms an important part of the County's Climate Action Response, and the plan is mindful of the carbon emission reduction requirements set out in the Climate and Action Low Carbon Development (Amendment) Act 2021.

ESB support the implementation of the Overarching Guiding Principles as outlined in Section 1.8.1, particularly No.'s (i) and (viii) which state:

> *(i)*
> *"To develop a county that is resilient to climate change, plans for and adapts to climate change and flood risk, facilitates a low carbon future, supports energy efficiency and conservation and enables the decarbonisation of our lifestyles and economy"*
>
> *(viii)*
> *"To support, facilitate and promote the sustainable development of renewable energy sources in the county."*

ESB is also working towards the delivery of Ireland's target (part of the pledged EU target) of at least 55% reduction in domestic GHG emissions by 2030 and we acknowledge that climate action provisions are integrated as a cross cutting theme throughout the plan.

The Minister of Communications, Climate Action and Environment recently launched Climate Action Plan 2021. This plan commits Ireland to a legally binding target of net-zero greenhouse gas emissions no later than 2050 and a reduction of 51% between 2018 and 2030. These targets are a key pillar of the Programme for Government. Among the most critical measures in the Government's Climate Action Plan is that up to 80% of electricity will be generated by a mix of at least 5 GW offshore wind, up to 8 GW onshore wind and 1.5 - 2.5 GW from solar PV.

It represents a significant change for the electricity industry and ESB is committed to doing its part in supporting and delivering on the Government's energy policy. As recognised in Chapter 7 *Energy & Communications,* through Appendix 2, *Wind Energy Strategy* (WES), and the related objectives of the Draft CDP, Kildare County Council will support and facilitate renewable energy use and sustainable generation at appropriate locations within the county to meet national objectives towards achieving a low carbon economy by 2050. Chapter 7 outlines the strategy for renewable energy developments including wind farms, solar energy, bio-energy, hydroelectric power and renewable heat.

In reviewing the Draft Plan, including the WES, ESB has a number of observations in relation to the key issues identified that may set the framework for delivery of energy infrastructure to meet energy needs and the future development of the County.

2.1 Electricity Generation, Transmission & Distribution

Both the NPF and the RSES contain promoting policies in relation to Energy Infrastructure. ESB fully supports the reinforcement of those policies at a local level that will accommodate the ongoing generation, transmission and distribution of electricity. Across the Draft CDP, but most particularly in Chapter 7, *Energy & Communications* and the WES, the Council recognises that the availability of energy is of critical importance to the continued development and expansion of employment in County Kildare. In addition, the Council support the sustainable development of indigenous energy resources, with an emphasis on renewable energy supplies, in the interests of economic progress and the proper planning and sustainable development of the county. The development of secure

and reliable electricity transmission infrastructure is also recognised as a key factor for supporting economic development and attracting investment to the County.

The ongoing need for curtilage management and the restriction of lands uses, which might affect the ability to consolidate and/or expand operations, is essential. Therefore, we welcome supporting statements in the Draft Plan, that seek to reinforce the existing grid including grid connections, transboundary networks into the County and the expansion into areas not adequately serviced. ESB welcome support for energy utility providers to reinforce and strengthen existing utility infrastructure and transmission/distribution networks as set out in the Policy and Objectives included in Section 7.14, and reinforced by Policy EC P19 that states:

> **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."*

It is also acknowledged that the Council shall work in partnership with existing service providers to facilitate required enhancement and upgrading of existing infrastructure and networks (subject to appropriate environmental assessment and the planning process). In this regard, we note Objective EC O65 and highlight that concerns about visual, amenity, health and safety need to be mitigated through the consultation process. The NPF, RSES and Local Development Plans and the Strategic Infrastructure Act provides the necessary framework for ensuring that all necessary standards are met and that extensive statutory and non-statutory consultation is an intrinsic part of the planning process. This ensures that there is ongoing consultation with local communities and local authorities regarding the construction of new networks.

ESB supports the promotion of energy infrastructure objectives and submit that they must continue to protect the County's future capacity for the development of energy generation, processing and transmission.

2.2 Generation & Renewables

In line with the Government's response to the Climate Change Crisis, ESB is increasing renewables in our power system from 30% up to 80% by 2030 with a broader range of technologies likely to be deployed e.g., offshore wind, wave, solar etc. ESB welcomes broad support for the development of renewable energy technologies across the entire plan, including the very comprehensive WES.

In reviewing the Written Statement of the Draft CDP along with associated Appendices, ESB acknowledge the overall consistency and alignment with the objectives of the NPF, RSES and national guidelines. ESB wish to make some observations in relation to the renewable technologies and ancillary developments as set out below.

2.2.1 Hydro Generation

At present, about two percent of Ireland's electricity generating capacity is in the form of hydropower. This power derives mainly from ESB's hydropower stations, with minor contributions coming from smaller, independently owned sites. Excluding pumped storage at Turlough Hill, the Liffey accounts for almost a quarter of ESB's Hydro Generating Capacity and is fully integrated into the local and national electricity transmission and distribution network.

Dams, reservoirs and embankments constructed for the purpose of electricity generation can be extremely hazardous. These vital local and national activities require both curtilage space to enable future consolidation and expansion and buffer space to protect against inappropriate new neighbouring development. In this regard, we welcome the support for Hydro Energy as outlined in

Section 7.7 of the Draft Plan, and the objective of the Council to require buffer zones around Hydro Stations.

EC O29
"Require, appropriate buffer zones around dams, reservoirs and embankments constructed for the purpose of electricity generation"

2.2.2 Onshore Wind

According to the SEAI *Energy in Ireland, 2021 Report*, 42% of all electricity generated in 2020 came from renewable sources, 86% of which came from wind, with the remaining 14% split evenly across hydroelectricity and bioenergy. This is an encouraging trend, but further acceleration of deployment is necessary to achieve the Government's target for electricity of up to 80% from renewables by 2030.

We acknowledge that the *Draft Revised Wind Energy Development Guidelines 2019 (DHPLG)* and the SEAI Methodology for Local Authority Renewable Energy Strategies (LARES) have been used to inform wind energy policy in the Draft Plan. ESB support a Plan led approach through the identification of areas for wind energy development. The Methodology set out in Appendix 2 of the Draft Plan identifies the most suitable locations for wind energy development. The identified areas have been derived following a comprehensive sieve mapping analysis. We note Policy EC P4 that states:

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."

ESB welcome the provision of supporting objectives for repowering of existing wind farms. Repowering can grant a new lease of life to existing renewable energy projects by extending the planning lifetime of existing windfarm with no, or minimal, new development. Well-maintained renewable energy projects and associated plant can operate safely after a planning expiry date of 20-30 years. Existing developments have the benefit of acceptance by local communities and contribute economically to the County through the payment of rates and community benefit funds.

2.2.3 Solar

Photovoltaic (PV) systems which produce electricity directly from solar radiation are becoming more widespread as their advantages become apparent and as costs fall. Solar projects will play a critical role in diversifying our renewable generation portfolio for the period out to 2030. Ireland is in a great position to take advantage of the significant reduction in the cost of solar energy over the past few years as the technology has advanced with the potential to provide a clean, diversified renewable electricity source for decades to come. Solar energy is suited to Ireland's climate, and we expect to follow the trend of other European countries and see increasing deployment of rooftop and grid scale solar energy. There is a strong correlation between wind and changing weather systems. In times of low wind there are often good solar conditions.

ESB continues to increase its investment in solar energy and has developed a growing portfolio since 2015. Through partnerships with Bord na Mona and Harmony Solar, ESB is involved in solar energy projects located in County Kildare. The joint ventures bring together a range of expertise in renewable energy with significant projects that support Ireland's energy transition.

In this regard, we welcome the support for the development of solar energy in the County as set out in the Draft Plan under Section 7.6 *Solar Energy* and most particularly Objectives EC O17 and EC O21, which state:

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

ESB wish to highlight that solar farms have potential to be built on agricultural land, whilst also accommodating the continued use of the land for grazing or for incorporating biodiversity measures within a project, in this regard we note the requirement to reserve 10% of each overall solar farm site for biodiversity areas. We also wish to acknowledge Objective EC O25, that notwithstanding the provisions of Section 42 of the Planning & Development Act 2000 (as amended) the Planning Authority may grant permission for more than five years, in appropriate circumstances. This is welcomed as currently; Solar PV developments can take in excess of 5 years to develop to construction phase. Securing a grid connection, relevant support tariff or corporate power purchase agreement and securing project finance has introduced significant delays for developers.

2.2.4 Energy Storage

Energy Storage systems such as batteries, liquid air energy storage are some of the technologies being explored that will be essential to smoothing out the natural variability that occurs in renewable energy sources and to provide electricity at times of peak demand. Utility-scale battery storage systems are being utilised to enable more efficient use of renewable energy.

At present, ESB's is installing a synchronous condenser at Moneypoint, Co. Clare which will be the first in the country and will incorporate the world's largest flywheel for grid stability. The grid stability provided by the synchronous condenser will replace and displace a fossil generator from providing these stability services, thereby lowering the carbon intensity of the electricity system. Due to the intermittency of wind energy in particular, grid stabilization technologies have an increasingly important role in a successful energy transition and this new technology is being deployed as a cost-effective and zero-carbon solution in strengthening the stability and resilience of the Irish grid. This is part of the plan to transform Moneypoint site into a green energy hub, where a range of renewable technologies will be deployed over the next decade with the capacity to power 1.6 million homes.

ESB is already installing Battery Energy Storage Systems (BESS) at existing facilities. BESS will operate by charging batteries using electricity and storing the energy until it is required. In addition, these batteries can stabilise the frequency of the electricity network further enabling the operation and stability of a highly renewable system.

ESB has partnered with dCarbonX on the assessment and development of Irish offshore green hydrogen subsurface storage. Green Hydrogen, which is produced from renewable energy sources, offers potential for large scale seasonal storage of variable renewable energy. This enables zero carbon backup to the power system when intermittent renewables such as wind and solar are not available. Large scale Green Hydrogen production and storage could leverage the continental scale of Ireland's renewable energy potential to enhance Ireland's energy security and to make Ireland a net exporter of energy.

ESB note that the Draft Plan references emerging renewable energy storage technologies such as battery storage systems and as a viable means of providing energy security. This is highlighted in Objective EC O19 which includes the following statement:

> **EC O19**
> *"…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."*

The above Objective supports battery storage systems, however there is scope to further expand the CDP with the inclusion of specific policy as set out below for supporting developments of new technologies, particularly green hydrogen.

> *"Support the research and development of green hydrogen as a fuel for power generation, manufacturing, energy storage and transport."*

2.2.5 Renewables-Enabling Plant

Energy security and sustainability are the main concerns in combatting climate change. Notwithstanding the Government's aim to increase the percentage of electricity generation from renewables to 80% by 2030, the contribution from non-renewable sources will still consist of 20%. Furthermore, on dull still days or nights, almost all electricity may sometimes need to come from non-renewables generation.

We note that the requirement for renewables-enabling Plant is not acknowledged in the Draft Plan. Given that Kildare has access to Gas Network, the inclusion of the text below as a promotional Objective for the development of Renewable Enabling Plant will further assist in the transition to a low carbon economy.

> *"It must also be recognised that natural gas, particularly renewable and indigenous gas, will continue to have a role to play in the transition to a low carbon economy. As such, renewable energy developments may require support from such sources in times of high energy demand."*

ESB support this provision as it will be a necessary to connect additional non-renewable Plant to the grid. This efficient Plant can be applied rapidly to provide operational flexibility and the required grid support services, when needed. Typical Plant consists of fast-responding gas turbines (i.e. FlexGen Plant) to provide backup power and synchronous condensers to provide inertia & grid stability. FlexGen gas turbines need to be located close to existing 110kV or 220kV stations and the gas grid.

2.3 Telecommunications

The provision of high-quality telecommunications infrastructure is recognised by Kildare County Council as critical to the development of a knowledge economy and will help attract inward investment in hi-tech, knowledge-based industries.

ESB supports the approach and the view of Kildare County Council that to facilitate the provision of telecommunications services at appropriate locations within the County, the applicant must demonstrate compliance with national guidance. The Draft Plan recognises that applications for telecommunications development shall be consistent with the updated guidelines (PL 07/2012) that facilitate the improved development of telecommunications infrastructure and promotion of a policy of co-location.

The updated Guidelines facilitate the improved development of telecommunications infrastructure and promotion of a policy of co-location. ESB's telecoms infrastructure in the County continues to

assist in delivering enhanced communications networks through the provision of backhaul fibre and shared telecommunications towers. In addition, ESB Telecoms are working with ESB Networks to upgrade internal ESB Communications Networks to facilitate the roll-out of ESB's 'Smart Metering' project. The successful delivery of 'smart metering' is a central component of Ireland's plan to combat climate change through the reduction of unnecessary energy usage. Due to the extent and reach of the electricity network, additional masts may be required in some locations to ensure the delivery of 'smart metering' to all areas. ESB Telecoms will work within the development management standards to deliver this infrastructure.

All ESB Telecoms Mast sites are open for co-location and duplication of infrastructure is reduced as a result. ESB supports the Telecommunications policy that promotes co-location. ESB encourages policies consistent with the Department Circular to allow for the improved development of telecommunications infrastructure, particularly broadband capability in the area.

2.4 Sustainable Transport & Electric Vehicles

With Ireland's natural advantages in terms of wind and other renewables a large proportion of the power used by electric cars will be carbon free in the future. The Irish Government's Climate Action Plan 2021 has set stretching targets for EV adoption in Ireland to address energy demand and reduce emissions from Transport including achieving:

- 840,000 passenger vehicles by 2030.
- 95,000 electric vans and trucks by 2030.
- Procuring 1,200 low-emissions buses for public transport in cities.
- Building the EV charging network to support the growth of EVs at the rate required and develop our fast-charging infrastructure to stay ahead of demand.
- New scheme for 200 on-street public charge points per year for electric vehicles

The above targets demonstrate that EV's (incl. plug-in hybrid electric vehicles PHEV's) are central to Government targets for zero carbon emissions transportation systems. The establishment of EV infrastructure by ESB and the associated EV usage aligns with the key principles and benefits of sustainability and the National Climate Change Strategy on reduction of emissions.

There are currently over 45,000 EVs registered on Irish roads, so while the number has improved, the pace of uptake must increase over the coming years to achieve our fleet electrification targets. The overall support for Electric Vehicles throughout the Draft Plan is acknowledged. Policy EC P15 and Objective EC O45 all seek to support the expansion of the EV charging network by increasing the provision of designated charging facilities. These promoting objectives are underpinned by the parking standards set out in Chapter 5 *Sustainable Mobility & Transportation,* TM O109, TM O110 & TM O111.

ESB welcome the above initiatives and note that the standards applied are reflective of the EU Energy Performance of Buildings Directive that calls for an **increase to 20%** for the number of parking spaces which should have provision for electric vehicle charging infrastructure.

Therefore, by adopting these standards, Kildare County Development Plan will increase the usage of electric vehicles to the levels required. These standards have been implemented in the latest review of Development Plans by Planning Authorities in Ireland. Promoting policies and objectives are facilitating growth in charge point infrastructure, to become a comprehensive network of public and domestic charge points, with open systems and platforms accessible to all supply companies and all types of electric cars.

2.4.1 Other Sustainable Transport

ESB also wish to highlight that, green renewable hydrogen enables the further electrification of transport, allowing the full decarbonisation of the transport sector, as well as improved air quality as the technology replaces diesel buses and diesel HGV across Ireland.

In partnership with CIE and Bus Éireann, ESB was part of a new, in-service, trial of fuel cell electric buses powered by hydrogen produced from renewable electricity from ESB's Ardnacrusha hydro-electric power station. ESB has been actively engaging with Hydrogen Mobility Ireland (a partnership of businesses, public sector and academic stakeholders) to deliver a coordinated approach to this cutting-edge technology. This will ensure that Ireland can benefit from being an early starter in this solution to further decarbonise transport using renewable energy.

3. CONCLUSION

Investment in infrastructure is crucial to the economic and social well-being of our country. Such investment creates jobs, stimulates economic activity and provides modern, efficient facilities to provide the services that people need including healthcare, education and community services amongst others. There is a significant multiplier effect from investment in infrastructure which means that it stimulates growth in the local economy. This investment in infrastructure is also necessary to support EU and national policy on Climate Change adaptation and mitigation.

ESB, Ireland's leading electricity utility, is building a truly sustainable company by investing in smart networks, renewable energy and modernising the generation portfolio. Sustainability, both within the company and in the services we provide, is integral to our corporate strategy. We are committed to reducing carbon emissions and addressing long-term concerns over future fuel supplies. ESB is implementing energy strategies that support the transition of Ireland to a low-carbon and ultimately post-carbon economy to become a competitive, resilient and sustainable region. We request that due consideration is given to the issues raised in this submission, most particularly, that the final County Development Plan includes clear policies in relation to:

- Ensuring that the long-term operational requirements of existing utilities are protected. The importance of existing infrastructure and the associated Electricity Generation, Storage, Transmission and Distribution operations are strategic and national in nature.

- The final Plan should maintain the planning policies which protect the County's future capacity for the development of energy infrastructure whilst encouraging the sustainable development of renewable energy resources.

- Good solar irradiation and significant grid network present opportunities to maximise energy generation by solar means. It is appropriate that the Planning Authority may grant permissions for Solar PV for more than five years, in appropriate circumstances.

- ESB welcome the inclusion of supporting policies for emerging renewable energy storage technologies such as battery storage systems and other sources of renewable energy technology that are a viable means of providing energy security.

- Ensuring energy security during the transition to an all-green and renewables electricity sector by providing for adequate supporting energy structure which will include using the cleanest natural gas technologies aiding the integration of renewables in the shift to a sustainable energy system.

- Promoting, encouraging and facilitating the use of sustainable modes and patterns of transport, including electric vehicles, to ensure the implementation of the latest standards consistent with S.I. No. 393/2021. This will support the extension of charge point infrastructure to ensure it becomes a comprehensive network of public and domestic charge points with open systems and platforms accessible to all supply companies and all types of electric cars.

If we can be of any further assistance, or if you wish to clarify any of the points raised, please do not hesitate in contacting the undersigned.

Yours sincerely,

Colm Cummins | Senior Planner | Engineering & Major Projects | ESB
T: +353 1 702 6357 / +353 87 763 8171 | www.esb.ie