EirGrid.ie

Grid Implementation Plan 2023–2028

September 2024

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*Information in this document with reference to completion dates (Estimated Completion Dates, Forecast Completion Dates and Indicative Completion Dates) has been prepared with all reasonable care and diligence. All and any dates have been estimated and are indicative and subject to change. All dates have been estimated in line with the European Union (Internal Market in electricity) (3) Regulations 2022 (S.I. no 227/2022) and all and any dates are subject to revision.

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Abbreviations

AA	Appropriate Assessment
CAP23	Climate Action Plan 2023
CP	Capital Project
CRU	Commission for Regulation of Utilities
DECC	Department of Environment, Climate and Communications
DMAP	Designated Maritime Area Plans
DSO	Distribution System Operator
EAR	Environmental Assessment Report
eNGO	Environmental Non-Governmental Organisation
EPA	Environmental Protection Agency
ESB	Electricity Supply Board
EWIC	East West Interconnector
GI	Geographic Information
GW	Gigawatt or Gateway (where numbered, e.g., GW3, in reference to EirGrid Development Framework Governance gateways)
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
IP	Implementation Plan
kV	Kilovolt
NBDC	National Biodiversity Data Centre
NBG	Net Biodiversity Gain
NDP	Network Delivery Portfolio
NHA	Natural Heritage Area
NID	Nature Inclusive Design
NNL	No Net Loss
NPF	National Planning Framework
ORE	Offshore Renewable Energy
OREDP	Offshore Renewable Energy Development Plan
ORESS	Offshore Renewable Electricity Support Scheme
PCI	Project of Common Interest
pNHA	Proposed Natural Heritage Area
PV	Photovoltaic
RES-E	Renewable energy share in electricity
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SEM	Single Electricity Market
SEO	Strategic Environmental Objective
SIA	Social Impact Assessment
SID	Strategic Infrastructure Development
SOEF	Shaping Our Electricity Future
SPA	Special Protection Area
TAO	Transmission Asset Owner
TDP	Transmission Development Plan
TSO	Transmission System Operator
UGC	Underground Cable
WSI	Wetland Survey Ireland

Contents

PART 1

Vision and strategy

1. Introduction to this Implementation Plan

1.1 Functions of EirGrid – the Irish Transmission System Operator

EirGrid plc ('EirGrid') is the licensed electricity Transmission System Operator (TSO) in Ireland.

By reference to Regulation 8(1)(a) of the European Communities (Internal Market in Energy) Regulations 2000 (SI 445/2000), EirGrid has the exclusive statutory functions:

"To operate and ensure the maintenance of and, if necessary, develop a safe, secure, reliable, economical and efficient electricity transmission system, and to explore and develop opportunities for interconnection of its system with other systems, in all cases with a view to ensuring that all reasonable demands for electricity are met and having due regard for the environment."

The electricity transmission network in Ireland refers to the higher-capacity electricity network (also known as the Extra-High Voltage or EHV network). As per Figure 1-1, the transmission network in Ireland comprises substations and circuits at 400 kV (i.e., 400,000 volts), 220 kV and 110 kV.

While operated by EirGrid, the network is owned by the Transmission Asset Owner (TAO) ESB Networks. EirGrid and ESB Networks have clearly defined functions in relation to the transmission network set out in an Infrastructure Agreement.

As part of its Statutory Licence, EirGrid publishes an annual Transmission Development Plan (TDP) – see Section 1.2 below. The TDP has a ten-year outlook of project activity.

This Implementation Plan is focussed on the TDP 2023–2032.

Within TPD 2023–2032, EirGrid has included an interactive GIS map of the grid here.

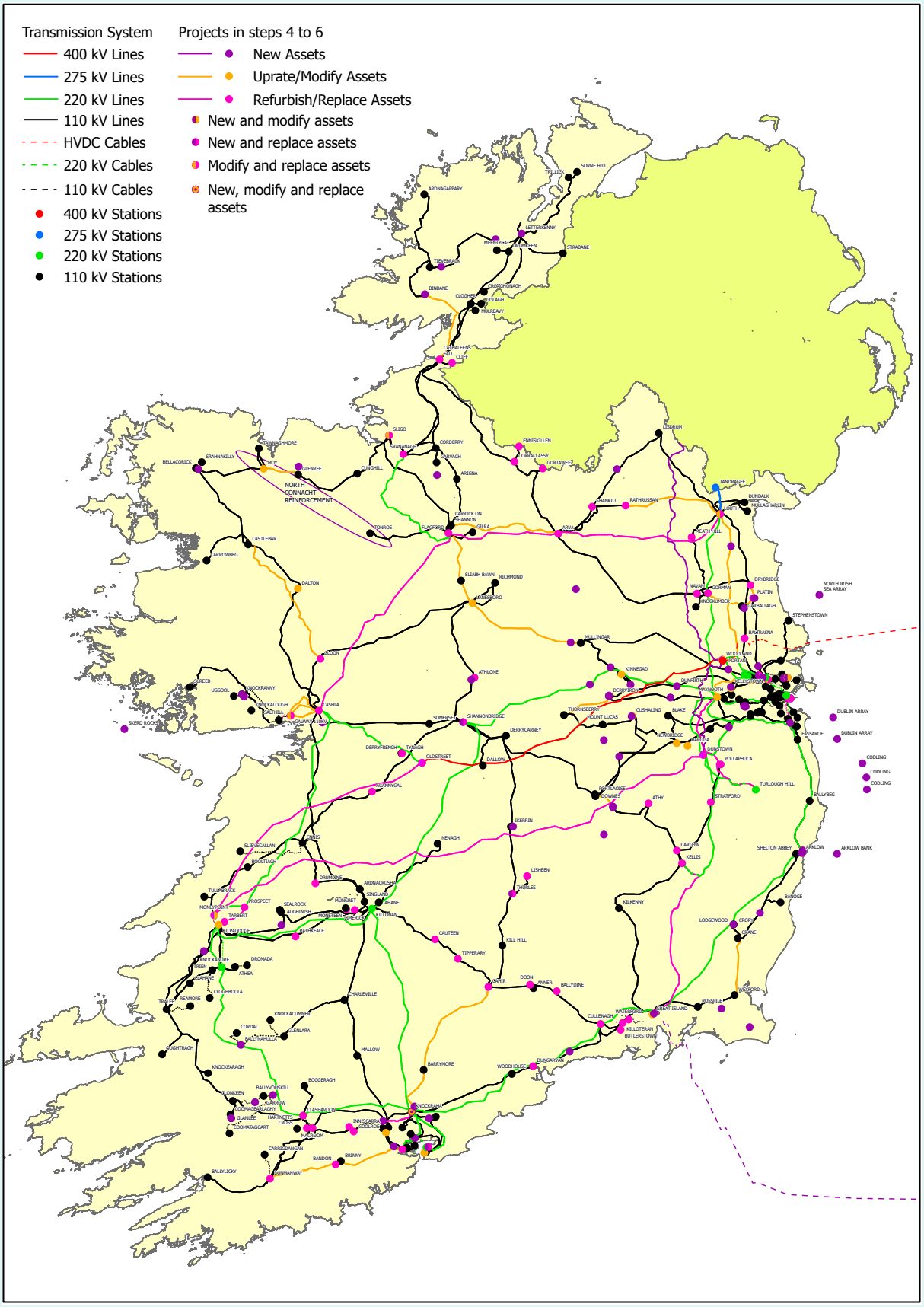


Figure 1-1: All-island electricity transmission system (source: TDP 2023–2032)

EirGrid is responsible for a safe, secure and reliable supply of electricity – now and in the future. It develops, manages and operates the electricity transmission grid – bringing power from where it is generated to where it is needed in Ireland (see Figure 1-2).

The transmission system must meet certain standards, identified in the Transmission System Security and Planning Standards[1] (TSSPS). This document sets out what the grid needs to be able to do. This can be found at www.eirgridgroup.com. Where the system is not capable of meeting those standards, reinforcement is often necessary.

The grid is used to supply power directly to industry and businesses which use large amounts of electricity. It also powers the lower-voltage electricity distribution network owned and operated by ESBN, which supplies the electricity used in homes, businesses, schools, hospitals and farms among others.

In 2021, EirGrid was designated as the system operator and asset owner of Ireland's offshore electricity transmission system, with ownership resting with EirGrid at all stages of the phased transition, regardless of whether the grid has been developed by individual renewable energy projects or EirGrid.

Subsequently in March 2023, the Department of Environment, Climate and Communications (DECC) published a Policy Statement on the Framework for Phase Two Offshore Wind (available at https://www.gov.ie/en/publication/f3bb6-policy-statement-on-the-framework-for-phase-two-offshore-wind/). The Policy Statement provides that EirGrid is taking on the role of offshore transmission asset developer, as well as owner and operator.

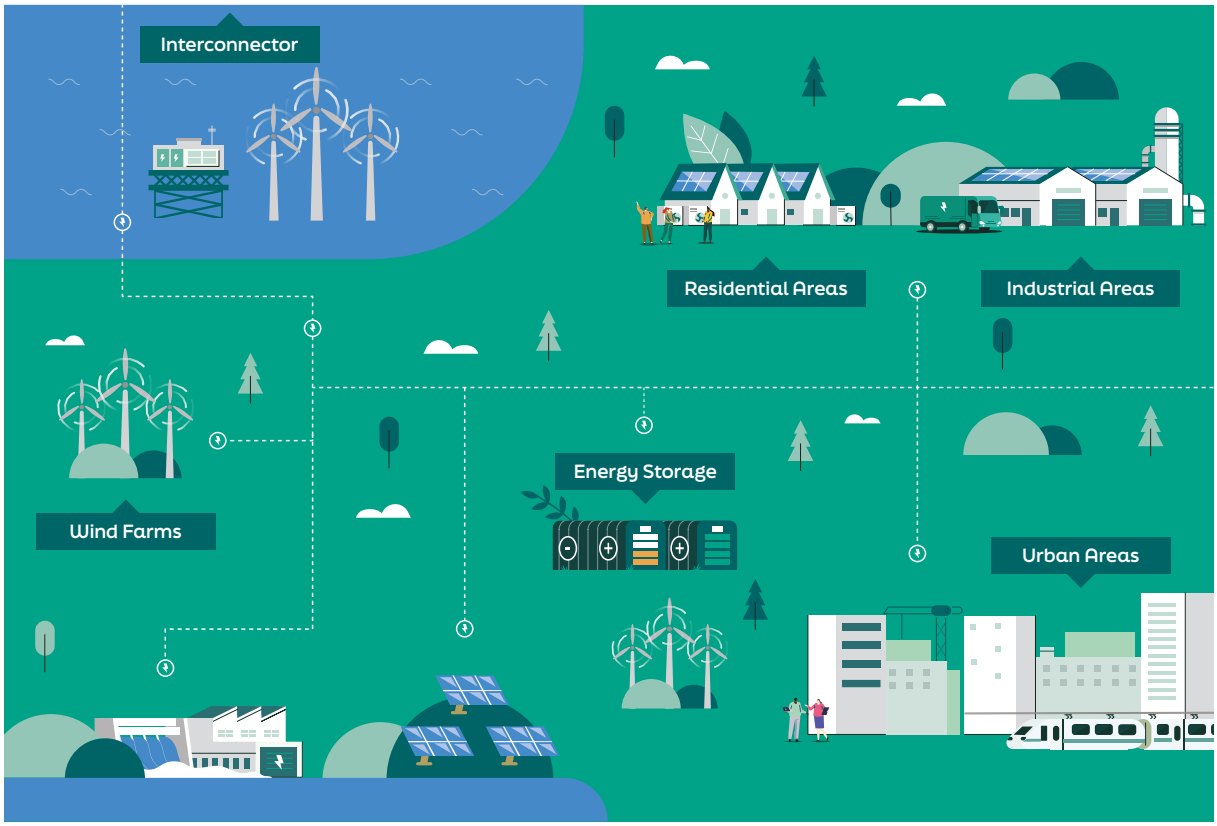


Figure 1-2: A graphic of the electricity transmission network

1 Formerly the Transmission Planning Criteria (TPC).

1.2 Shaping Our Electricity Future and this Implementation Plan

EirGrid released *Shaping Our Electricity Future* Version 1.1 (SOEF, published in June 2023). This comprises an update to the Roadmap EirGrid published in 2021. The updated Roadmap addresses the provisions of the Government's Climate Action Plan 2023 and in particular for 80% of energy consumption to be met by renewable sources by 2030 (see https://www.gov.ie/en/publication/7bd8c-climate-action-plan-2023/).

A detailed outline of SOEF is provided in Chapter 2 of this IP.

The SOEF Roadmap has been informed by a technical market review and industry and public consultation. In this latter respect, preparation of the Roadmap was founded upon EirGrid's committed approach to encourage public and stakeholder participation in the organisation's decision-making processes. It also reflects an updated economic context and the testing and/or availability of new technologies which can and will increasingly be available for use on the transmission grid.

The SOEF Roadmap also takes into account the Climate Action and Low Carbon Development (Amendment) Act 2021.

As a summary context, SOEF addresses matters such as why EirGrid develops the electricity transmission network, Government policy context that underpins this and the importance of an efficient and economical grid network. SOEF states (p. 4) in this regard that:

"As outlined in Shaping Our Electricity Future (2021), in order to achieve clean electricity ambitions by 2030, more energy from renewable sources, such as wind and sun, need to be added to the power system."

Reasons for grid development may stem from significant growth in demand, when new electricity generators are connected, or when existing generators close. There is an ongoing need to ensure fit-for-purpose grid infrastructure. This may involve the refurbishment, upgrading or replacement of existing infrastructure.

SOEF notes that demand for electricity has changed significantly in recent years. This is due to a number of reasons; including more efficient energy use, demand from new high energy customers such as data centres, a general forecasted national population increase and a focus on regional development.

Overall in this regard, SOEF states (p. 8) the following:

"Given the updated legislation, we now need to plan for an electricity system that can deliver 80% RES-E power system by 2030 in both Ireland and Northern Ireland, 51% reduction in greenhouse gas emissions by 2030 relative to 2018 and carbon neutral electricity system by 2050 in Ireland (hereafter referred to as the Renewable Ambition)."

This IP takes SOEF version 1.1 as a core context for grid development.

1.3 Transmission Development Plan (TDP) 2023 and this Implementation Plan

As noted in Section 1.1 above, EirGrid's Transmission Development Plan (TDP) is a plan for the development of the Irish transmission network and interconnection over a ten year period, which EirGrid publishes in accordance with the terms of its licence[2]. The TDP lists the committed projects and projects under development for the enhancement of the Irish transmission network over the coming ten years. Committed projects are those that have received EirGrid capital approval and are in Steps 4–6 of the six-step process for developing the grid.

The Commission for Regulation of Utilities (CRU) leads a public consultation on the TDP. Following the public consultation, EirGrid updates the TDP prior to submitting it to the CRU for approval (accompanied by a report which sets out the feedback received).

Each TDP includes an Environmental Appraisal Report (EAR), which considers whether the TDP is in accordance with the SEA of the Implementation Plan in place at that time. In short, the TDP is subject to appraisal to ensure its conformance with the provisions of the SEA of the adopted Implementation Plan.

The TDP 2023 also forms a core context for this Implementation Plan. Details of the approved 2023 TDP are set out at Part C of this IP.

In addition, the latest Network Delivery Portfolio (NDP) (July 2023) has also been consulted in terms of projects currently in the pipeline. The NDP is a progress update on all the system reinforcement, generator and demand and customer connection projects that are currently under development and this is available at www.eirgridgroup.com

2 This is required by Regulation 8(6) of the European Communities (Internal Market in Electricity) Regulations 2000 (S.I. 445 of 2000) and submitted for approval to the Commission for Energy Regulation (CER).

1.4 Purpose of this Implementation Plan

This Grid Implementation Plan (IP) supersedes the Grid Implementation Plan 2017–2022 which was subject to Strategic Environmental Assessment (SEA).

The IP, the TDP and the SOEF Roadmap each provide a different level of scale and detail – from the long term vision statements contained in the SOEF, to the objectives and policies to implement the strategy set out in this IP, to the specific projects outlined in the TDP. This is set out graphically at Figure 1-3 below.

Figure 1-3 also shows how the various plans are subject to Strategic Environmental Assessment and subsequent Environmental Appraisal Reports.

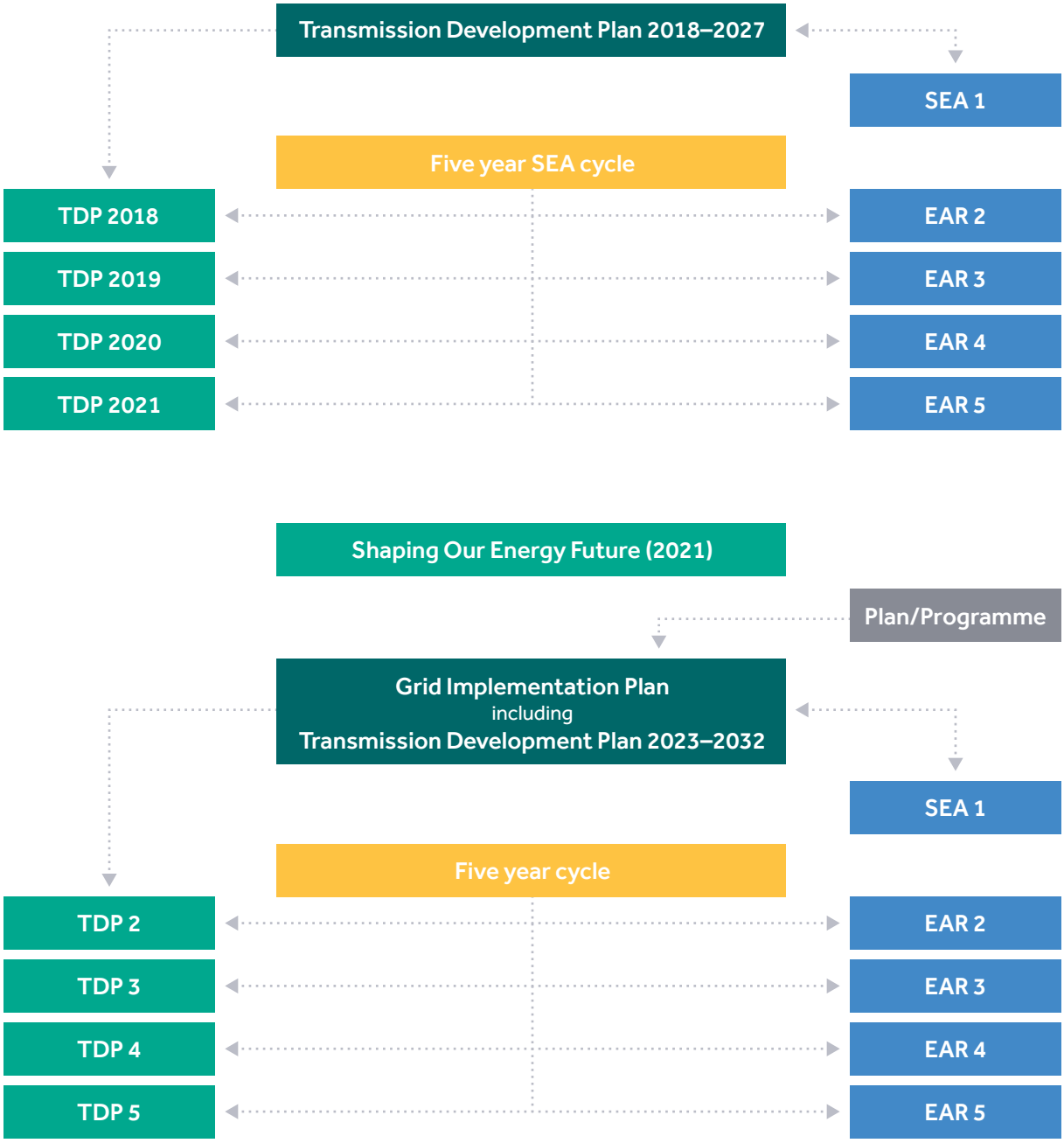


Figure 1-3: Relationship of the Grid Implementation Plan, Shaping Our Electricity Future and annual Transmission Development Plans

1.5 Strategic policy and planning context

1.5.1 Evolving policy

Policy will continue to evolve and therefore EirGrid's policies must also evolve. Since the launch of the previous Grid Implementation Plan, there have been significant developments to electricity policy at European level and in Ireland.

1.5.1.1 Europe

From a European perspective, the EU and its member states continue to be at the forefront of international climate and energy policy with the aim of carbon neutrality by 2050 as set out in the Regulation on the governance of the energy union and climate action (EU/2018/1999) and the European Green Deal.

The 2030 Climate and Energy Framework set out binding targets for the EU. As part of this, member states are required to produce National Energy and Climate Plans from 2021 to 2030 and a long-term strategy to reduce Greenhouse Gases to 2050.

In December 2020, the European Council committed to increasing the EU emissions reduction target to at least 55% by 2030 in the Fit for 55 package. The package aims to update EU legislation and put in place new initiatives to ensure that EU policies are in line with the climate goals agreed by the Council and the European Parliament. The package includes a proposal for a revision of the renewable energy directive increasing the current EU-level target of at least 32% of renewable energy sources in the overall energy mix to at least 40% by 2030. We understand negotiations for a revised renewable energy directive are currently on-going.

The EU aims to fully integrate national energy markets in order to provide benefit for consumers and businesses, to increase competition and to ensure security of supply, EirGrid as a member of the European Network of Transmission System Operators – ENTSO-E is contributing in the effort to achieve this aim.

Also at European level, in May 2022 the European Commission presented the REPowerEU Plan, its response to the global energy market disruption caused by Russia's invasion of Ukraine. There is a double urgency to transform Europe's energy system: ending the EU's dependence on Russian fossil fuels, which cost European taxpayers nearly €100 billion per year and tackling the climate crisis. The measures in the REPowerEU Plan are intended to respond to this urgency, through energy savings, diversification of energy supplies and accelerated roll-out of renewable energy to replace fossil fuels in homes, industry and power generation. EirGrid is contributing the realisation of this Plan by its planning and development of the Irish grid.

1.5.1.2 Ireland

In line with the EU ambition, the Climate Action and Low Carbon Development (Amendment) Act 2021 commits to achieving a 51% reduction in Ireland's overall Greenhouse Gas emissions by 2030 relative to 2018 emission levels and to achieving a climate neutral economy no later than 2050.

Overall carbon budgets for the periods 2020–2025, 2025–2030 and 2030–2035 came into effect in April 2022 and sectoral emissions ceilings were announced in July 2022. The Climate Action Plan 2023 (CAP23) was published in December 2022 and explicitly sets out updated emission reductions aligned with carbon budgets and sectoral emissions ceilings.

These include targets for electricity of:

- Carbon Budget 1: 2020–2025: 40 $MtCO_2$ equivalent.
- Carbon Budget 2: 2025–2030: 20 $MtCO_2$ equivalent.
- Reduce electricity sector emissions to 3 $MtCO_2$ equivalent per annum.
- 80% of electricity demand generated from renewable sources.
- 9GW of onshore wind capacity (6GW by 2025).
- 8GW of solar PV capacity (up to 5GW by 2025).
- At least 5GW of offshore wind capacity.
- At least 2GW new flexible gas plant.
- At least 500 MW of community based renewable energy projects.
- Ensure that 20–30% of system demand is flexible by 2030 (15–20% by 2025).
- Delivery of three new transmission grid connections or interconnections to Northern Ireland, Great Britain and the EU and explore further interconnection.

The targets in the Climate and Low Carbon (Amendment) Act 2021 and the CAP23 place an onus on EirGrid to both enable and deliver elements of the greatest change on the power system since the rural electrification project during the 1940's to the 1970's. This transformation will feed into major changes in how both business and society behave and operate.

1.5.1.3 Policy summary

Given the updated legislation, we now need to plan for an electricity system that can deliver 80% RES-E power system by 2030 in Ireland, 51% reduction in greenhouse gas emissions by 2030 relative to 2018 and carbon neutral electricity system by 2050 in Ireland (hereafter referred to as the Renewable Ambition). We also need to consider how the electricity system in Ireland complies with the requirements set out in the sectoral emissions ceilings for electricity.

During this significant electricity system transition we will need to deliver the Renewable Ambition while retaining the essential reliability, resilience and affordability of the electricity system in Ireland. We also need to consider the impacts of ageing infrastructure, the retirement and displacement of fossil fuel generators, an increase in renewable electricity supply, new technologies and storage, a rise in demand from large energy users and distribution connected customers, the social impacts of electricity infrastructure and a change in consumer preferences, behaviours and expectations for their electricity supply.

The main objective of the *Shaping Our Electricity Future* initiative is to outline a blueprint for a secure transition to deliver the Renewable Ambition. See Section 2 of this IP for further detail.

Version 1
70% RES-E

Version 1.1
80% RES-E, Carbon

1.5.2 Energy and electricity

This Implementation Plan is set into the strategic policy context of 'The White Paper: Ireland's Transition to a Low Carbon Energy Future 2015–2030'. This reaffirms the Government's existing approach to change to a low-carbon energy future. This change must also support the core policy goals of sustainability, security of supply and competitiveness. The White Paper outlines a vision and framework to guide Irish energy policy up to 2030 and sets goals of low and zero carbon energy systems by 2050 and 2100 respectively.

In respect of electricity transmission, the White Paper acknowledges that developing, maintaining and upgrading the grid is essential to meeting these short, medium and longer-term objectives. It also recognises the need – and efforts made by EirGrid – to build trust with communities and other stakeholders and, in general, to promote public participation and innovative 'smart' activities in our shared energy future.

The White Paper has considerable regard to wider emerging EU policies which promote smart low-carbon economies centred on energy efficiency. These policies also acknowledge the role of sustainable development of the transmission grid to assist in delivering this.

EirGrid acknowledges the clear linkage between energy policy and policies in respect of economics and employment. Investing in a secure transmission grid will open up large areas of the country for investment and will assist in facilitating further attraction of the high-tech power-dependent sector.

1.5.3 Planning and environment

From a spatial planning policy perspective, the National Planning Framework (NPF) sets out a 20 year strategic vision for the spatial planning and development of Ireland. It outlines how a strengthened network of cities, towns and rural communities and their resources will be complemented by social and physical infrastructure, to create balanced national development.

In relation to key infrastructure, the NPF states that:

"New energy systems and transmission grids will be necessary for a more distributed, more renewables focused energy generation system, harnessing both the considerable onshore and offshore potential from energy sources such as wind, wave and solar and connecting the richest sources of that energy."

While models to address balanced regional development are currently being explored, as noted elsewhere in this IP, a high-quality electricity supply will assist in achieving a wider and stronger economic base, greater economic competitiveness and associated social progress at a regional level.

This is supported by National Policy Objective 47 of the NPF, which states the following:

"In co-operation with relevant Departments in Northern Ireland, strengthen all-island energy infrastructure and interconnection capacity, including distribution and transmission networks to enhance security of electricity supply."

EirGrid participated in the contribution to the drafting of the original NPF and has been invited to participate in the Government Planning Advisory Forum in the respect of the planned updating of the NPF in 2023.

The Renewable Electricity Spatial Policy Framework is currently being prepared and will stand as the Government's policy for onshore renewable electricity, informing the regional development and distribution of onshore wind and solar PV generation. This framework will translate the national renewable electricity targets, as set out in the Climate Action Plan 2023 (CAP23), to Ireland's three Regional Assemblies. It will allocate regional spatial and renewable generation capacity targets, with supporting principles and polices, which together shall establish a framework within which all relevant stakeholders should operate in order to achieve the national climate objective.

The development of onshore renewable electricity in Ireland should align with the targets, principles and polices set out in this policy framework.

In relation to offshore, the Policy Statement on the Framework for Phase Two Offshore Wind which was published in March 2023 is a key milestone in achieving our offshore targets for 2030 as outlined in CAP23. In addition, public consultation on the Second Offshore Renewable Energy Development Plan (OREDPII) concluded in April 2023 and the outcome of this and associated developments will be a key building block towards our enduring plan-led approach to developing offshore renewable energy.

1.6 Conclusion

This IP, and EirGrid's approach to and undertaking of, transmission infrastructure development are governed by the prevailing strategic policy context in which it occurs.

While this section discusses key strategic policy areas, it will be the case that all projects identified in this IP and committed projects reported in the various Transmission Development Plans (TDPs), will also occur within the prevailing National, Regional and Local planning, environmental and other policy contexts, as well as in accordance with governing legislation and best practice guidance.

EirGrid does, and will continue to, provide expert input and influence into policy development in order to ensure the sustainable provision of grid infrastructure, as a balance of technical, environmental, social, economic and deliverability criteria.

2. The strategy for grid development

2.1 Technology

One of the cornerstones in delivering SOEF V1.1 is the use of innovative technologies on the existing grid. Innovation and technology are at the core of all decision-making processes and EirGrid continually reviews technological developments to assess their potential. Whilst we identify the key advantages of new transmission technologies, we are also cognisant that such potential advantages must always be balanced against the need to ensure a reliable and secure electricity supply.

EirGrid typically places new technologies into the three following categories:

- Technologies at the research and development stage;
- Those at trial use stage; and
- Those that are ready to use now.

EirGrid considers the range of possible ways that the grid may be used in the future. This planning allows EirGrid to efficiently develop the grid taking account of the uncertainties associated with how electricity will be generated and consumed in the future.

Development of these scenarios is informed by stakeholder opinions of what the future looks like and how they see things changing over time. The scenarios are typically reviewed every two years, in order to factor in any new information available regarding trends and changes in the electricity industry and other relevant factors. This will ensure an overall sustainable, secure, robust and reliable transmission network can be developed now for the future.

2.2 A balanced approach to grid development

In addition to the technical issues concerning grid development, but also of crucial importance, there is a need to achieve a balance between social, environmental and economic factors. An essential part of grid development is to understand how developing the transmission system might affect the environment. To ensure this is the case, EirGrid has developed a Framework for Grid Development, which provides a six-step 'end-to-end' structure for all our transmission projects. It ensures an appropriate balance between technical, economic, environmental, social and community considerations, with significant provision for stakeholder engagement at all stages. A general structure of this approach is set out in Figure 2-1 and is addressed in more detail in Section 6.2 below.

Specifically in respect of people and communities, there is a need to protect the interests of individuals, households, businesses and communities. When assessing route options for new lines, we aim to create as little disturbance as possible, but it's difficult to avoid private, business or community property.

Figure 2-1 General structure of EirGrid's approach to developing the grid

2.3 Climate action

The recent Climate Action and Low Carbon Development (Amendment) Act 2021 (as amended) was established to provide for the approval of plans by the Government in relation to climate change. This aims at pursuing the transition to a climate resilient, biodiversity rich and climate neutral economy by no later than the end of the year 2050. Ireland's Climate Action Plan 2023 sets out Ireland's National targets in this regard; moreover, Ireland has an Electricity & Gas Networks Sector Climate Change Adaptation plan prepared under the National Adaptation Framework which set targets for EirGrid such as:

- EirGrid and ESB Networks will undertake an in-depth analysis of local, regional and system level flexibility requirements and modify their own approaches and procedures to facilitate demand flexibility, to drive down costs to the consumer and provide the necessary flexibility to meet the needs of the energy transition to 2030;
- EirGrid will carry out further grid, operational and market studies to understand any additional measures, beyond current plans, to facilitate reduced sectoral emissions ceilings and, therefore, support annual renewable electricity share of up to 80%;
- The CRU and EirGrid will ensure an adequate level of conventional dispatchable generation capacity, to guarantee security of electricity supply, by publishing annually the levels of conventional dispatchable generation capacity required in each of the following 10 years. The CRU will ensure through market mechanisms, or other means, sufficient existing and conventional dispatchable generation capacity is available to meet the levels they set;

- EirGrid will develop a Power System Operational Policy Change Roadmap, setting out how power system operational policy will need to evolve to facilitate the integration of high levels of intermittent, non-synchronous renewable generation, including the reduction or removal of minimum generation constraints and increasing System Non-Synchronous Penetration (SNSP);
- EirGrid will evolve the operational tools and policies to facilitate the integration of interconnection, both in development and interconnectors yet to be identified; and
- EirGrid and ESBN will undertake analysis and implement the necessary measures to facilitate the integration of power generation technologies, including hybrid power plants. A framework to facilitate zero-carbon system services will be put in place as soon as possible to enable delivery of the 2030 targets.

The key issues in relation to Climate Change concerning this IP are as follows:

- The IP sets out how grid development will assist in meeting the targets set out in the Climate Action Plan 2023;
- The location of the Irish transmission network (existing or planned) will consider flood risk and location of proposed flood defence schemes;
- All policies and objectives within the Electricity & Gas Networks Sector Climate Change Adaptation Plan relevant to EirGrid must be implemented; and
- The potential impact of changes in climate including flooding and temperature increases should be factored into the IP.

2.4 Offshore wind and interconnection

As noted in Section 1 above, the Climate Action Plan 2023 includes the objective that 5 GW of offshore wind generation will be installed by 2030.

The *Policy Statement on the Framework for Ireland's Offshore Electricity Transmission System* (Policy Statement) was prepared by Department of the Environment, Climate and Communications (DECC) and subsequently approved by Government in April 2021. The Policy Statement detailed three phases of offshore grid development; the First Phase being based on a decentralised model, the second phase based on a hybrid model and the third phase comprising a centralised and 'plan-led' model from 2030 onwards. Each phase would line up with a series of Offshore Renewable Electricity Support Scheme (ORESS) auctions.

Meeting the 5 GW objective by 2030 requires simultaneous development of various policy, legislative and regulatory workstreams. These include the establishment of a new statutory consenting regime for the offshore renewable energy sector in Ireland, a route to market for future offshore wind projects through ORESS and the development of a new offshore regulatory framework.

Phase 1: ORESS1

There are four Phase 1 offshore projects through the ORESS1 auction which will provide 3.1GW of expected to deliver approximately 60% of the 2030 target and to become operational from 2028 onwards.

The successful ORESS1 projects are North Irish Sea Array (NISA), Dublin Array, Codling Wind Park and Sceirde Rocks Offshore Wind Farm[3].

These were all awarded Maritime Area Consents in 2022.

EirGrid will be the Transmission Asset Owner for all Phase 1 transmission infrastructure. Whilst projects will be constructed as per EirGrid's offshore functional specifications, EirGrid will have no formal role in the environmental design, or construction of these projects.

Phase 2: ORESS2

Phase 2 Projects through ORESS2 auction – will bridge gap between what can be delivered by the Phase 1 projects and the 2030 target of 5GW grid-connected offshore energy by 2030. A first auction to take place under Phase Two – ORESS 2 – is anticipated to launch in due course.

EirGrid has identified available onshore grid capacity for connection of offshore renewables of up to 900 MW in total off the South coast of Ireland.

EirGrid submitted foreshore licence applications to DHLGH in May 2023, for licences to undertake Site Investigations to inform identification of suitable locations for offshore grid infrastructure (subsea cabling and offshore substation platforms).

DECC's Policy Statement on the Framework for Phase Two Offshore Wind (DECC, 2023a), states in this regard that:

"Phase Two Offshore capacity will continue to be procured through the Renewable Electricity Support Scheme (RESS), with the size, regularity and urgency of auctions required to meet the 5 GW target to be determined by onshore grid and marine spatial constraints, and the outcome of Phase One."

3 https://www.eirgridgroup.com/site-files/library/EirGrid/ORESS-1-Final-Auction-Results-(OR1FAR).pdf

The policy statement also confirms that:

"The ORESS 2, and any subsequent Phase Two auctions, will exclusively procure a set volume of offshore wind capacity for development within individual Offshore Renewable Energy (ORE) Designated Areas, which will be designated according to legislative provisions for Designated Maritime Area Plans (DMAPs) in the Maritime Area Planning (MAP) Act."

The process of developing ORE Designated Areas will provide opportunities for public participation and consultation, as well as requiring statutory environmental assessments. The location of ORE Designated Areas for Phase Two will be geographically aligned with available onshore grid capacity, in addition to being informed by environmental considerations including European sites and Marine Protected Areas.

Additional onshore grid capacity for connection of offshore projects under Phase Two may be identified by EirGrid following the outcome of Phase One.

Phase 3

Phase 3 will be informed by the:

- Offshore Renewable Energy Development Plan, which will be published (final version, following consultation) in 2023/2024 and the Hydrogen Strategy which will be published by Government by Q3 2023.
- Publication of an Enduring Regime for Offshore Wind policy, together with a Phase 3 policy, in Q1 2024

Second Offshore Renewable Energy Development Plan (OREDP2)

The DRAFT second Offshore Renewable Energy Development Plan (OREDP2), published in early 2023 identified 'broad areas' suitable for ORE development. Any DMAP prepared on foot of the OREDP 2 will, as per the draft plan (DECC, 2023b), reflect the appropriate plan and project level mitigation measures identified in the OREDP II environmental assessments align with objectives set out in the National Marine Planning Framework (NMPF) to support and prioritise co-existence and co-location of ORE and other maritime uses and activities to mitigate conflicts and minimise the spatial footprint of proposals, where necessary and maximise the economic, social and environmental benefits of multiple developments or uses of an area.

- Demonstrate best practice in stakeholder and community engagement in order to ensure the maximum benefit to society from ORE including economic, environmental and social benefits such as employment and work and educational opportunities.
- Engagement with fisheries from the outset of the enduring regime.

EirGrid actively contributed to the OREDP 2 constraints mapping in from 2021–2023, as a member of the OREDP Data and Scientific Forum.

As stated in the Draft OREDP 2 (DECC, 2023b), the Offshore Renewable Energy (ORE) Designated Areas in the form of Designated Maritime Area Plans (DMAPs) will guide investment and decision making and will complement the forthcoming network of Marine Protected Areas.

As part of *Shaping Our Offshore Energy Future*, EirGrid plans to develop offshore electricity substations and associated undersea electricity cables. This new infrastructure will bring the power generated by offshore windfarms into our national electricity grid.

EirGrid has started the rollout of an engagement plan across areas located close to the Draft South Coast Designated Maritime Area Plan. This has involved engagements with communities and stakeholders in 2023 in advance of a formal consultation process associated with EirGrid's south coast offshore grid connection project.

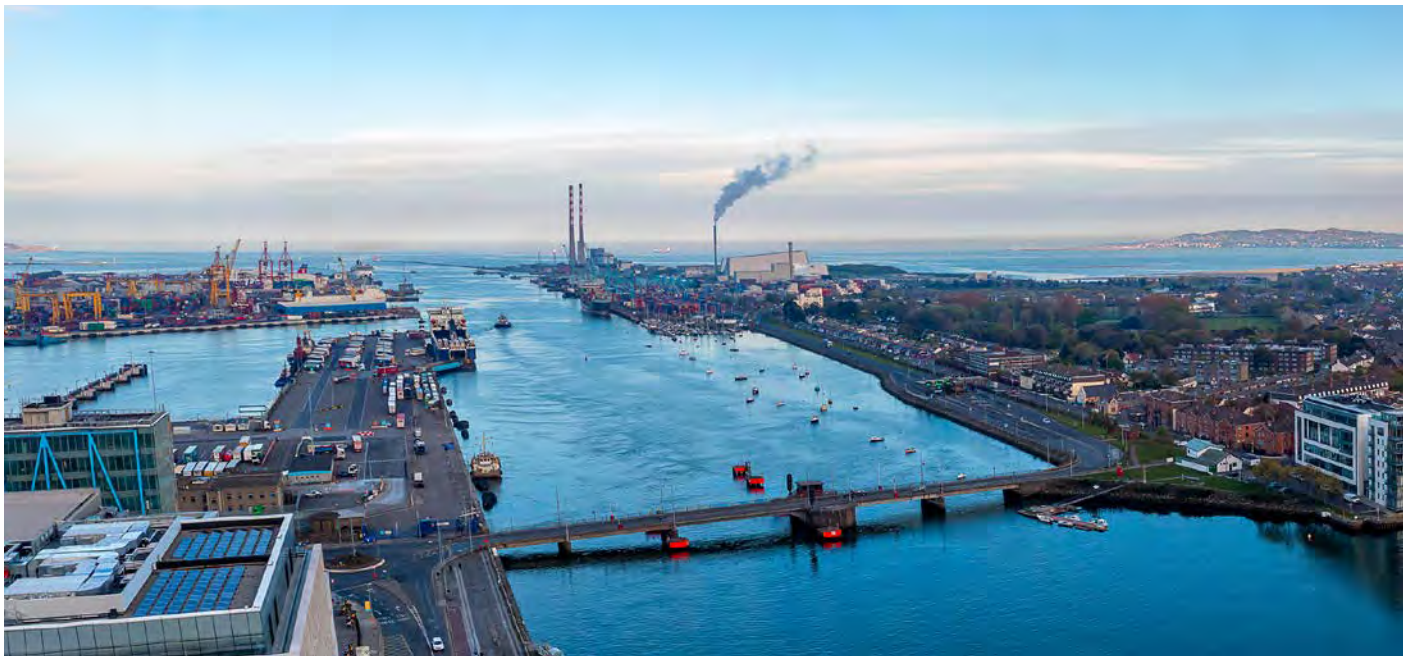
Interconnectors

The 500 MW East West Interconnector from Meath to Schotten (Wales) has been operational since 2012 and is owned and managed by the EirGrid Interconnector Designated Activity Company (EIDAC).

The 700 MW Celtic Interconnector from Claycastle, Co. Cork to Brittany in France has been granted approval and is now in the construction phase, with ownership and management to be delivered by Celtic Interconnector Designated Activity (CIDAC). The Celtic interconnector is expected to be operational from 2027.

The 500 MW Greenlink Interconnector from Wexford to Pembrokeshire (Wales) is also under construction and is privately owned.

In 2023, DECC published a National Policy Statement on Interconnectors. This policy outlines proposals to increase electricity interconnection capacity and explore new interconnection opportunities with Spain, Belgium and the Netherlands as well as further connections to both Great Britain and France.



3. Regional development

The implementation of the SOEF Roadmap V1.1 and the TDP 2023 will involve the development of transmission infrastructure across Ireland. This will take a variety of forms:

New build projects
Projects that involve the construction of entirely new assets.

Uprate/Modify projects
Projects that involve the uprating (upgrading) of existing assets. An example of an uprate project is changing equipment to increase the capacity rating of circuits or busbars.

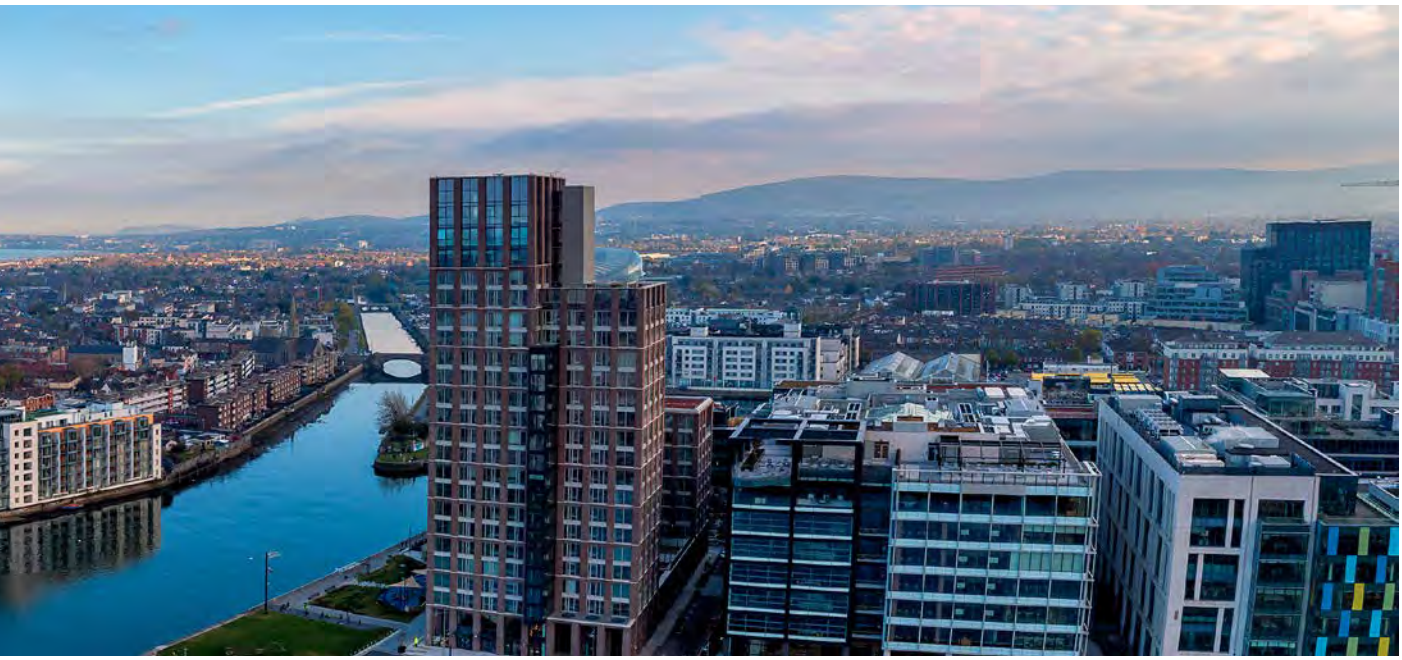
This category also includes projects that involve the modification of existing assets.

An example of an uprate project is the installation of new couplers or new bays in existing stations, or replacement of existing conductors on an overhead line with higher capacity conductors. Reconfiguration of existing stations is also included in this category.

Refurbish/Replace projects
Projects that involve the refurbishment of existing stations or existing circuits, primarily for ongoing maintenance purposes, and without increasing the capacity of those assets. This might include the replacement of rotted wooden polesets. This category also includes projects that involve the replacement of existing assets. For example, the replacement of stations at or close to the end of their useful life or replacement and upgrading of protection in existing stations.

Other
Projects that do not fall into any of the three categories above.

This chapter details the committed projects in TDP 2023 as of the data freeze date, 21 December 2022. Committed projects are those projects that are in Steps 4–6 of our six-step process for developing the grid. Committed projects have received EirGrid capital approval which occurs at the end of Step 3. Indicative completion dates are included for these projects*.



This chapter describes the projects including their drivers, needs, location, EirGrid Capital Approval dates (GW3), Project Agreement with ESBN dates (GW6), forecast energisation date (EI), capital project number (CP No.) and step in the six-step process for developing the grid.

Table 3-1 below, extracted from TDP 2023, summarises the active projects into their respective categories and regions. Please refer to Appendix 1 for a full list of projects in the TDP 2023–2032.

Table 3-1: Summary of projects by category and region (source: TDP 2023–2032)

Project category	Border, Midlands, West	South–East, Mid-East, Dublin	South-West, Mid-West	Projects at multiple locations	Total
New build	28	16	49		**93**
Uprate/Modify	23	7	18	1	**49**
Refurbish/Replace	8	15	24	5	**52**
Other	–	–	5	3	**8**
Total	**59**	**38**	**96**	**9**	**202**

In addition to the projects set out in TDP 2023, other projects are included in EirGrid's pipeline development programme that have arisen subsequent to the TDP data freeze date on 21 December 2022. These are captured in the Network Development Portfolio (NDP) update of July 2023.

Both the projects listed in the TDP 2023 and the additional projects listed in the NDP are outlined below on a regional basis.

3.1 The Border, Midlands and West

Summary of projects (TDP 2023)

Project category	No. of projects
New build	28
Uprate/Modify	23
Refurbish/Replace	8
Total	**59**

Active TDP projects by region (extract below from TDP 2023)

The Border, Midlands and West has a wide variety of generation sources. These are dispersed around the region and include wind, solar, storage, hydro, diesel, gas and a co-fired peat/biomass-burning power station. Note that two peat-powered generating plants at Shannonbridge in Offaly and Lanesboro in Longford closed at the end of December 2020.

The existing transmission network is predominantly 110 kV and 220 kV. There is limited high capacity 400 kV infrastructure in the southern part of the region. It is important to note that the North-West area is relatively isolated from the 220 kV network and comprises of a network of 110 kV circuits, many of which are long lines, and is characterised by a strong wind resource and a low electricity demand.

Development of this network is mainly required to connect a high level of renewable generation.

While the eastern part of the country has seen significant increases in new large industry demand, the West and North-West have seen a large amount of renewable generation connections with many requests for further connection. This level of generation is greater than the capacity of the network resulting in local constraints related to power-transfer needs. These large transfers of power create voltage support needs, which are exacerbated by the decommissioning of the peat plants in the Midlands.

To cater for high levels of renewable generation, network reinforcement is necessary. This will enable the efficient export of generation from this area towards areas with high load, such as the eastern seaboard.

One of the main challenges involved in the grid development of the North-West is the fact that there are limited opportunities for outages and multiple simultaneous circuit outages for maintenance, uprating, new connections or substation works, are often not possible. As part of Shaping Our Electricity Future, EirGrid has launched an initiative to review and transform how outages of the transmission system are planned and granted. This initiative will include a review of outage requirements and durations during construction as well as consideration of outages during project initiation and decision making. This process will seek to minimize the requirement for outages during construction where possible. EirGrid and ESBN will continue to work closely to deliver the outage programme and in turn the grid delivery programme as effectively and efficiently as possible in all areas of the network requiring reinforcement including the Border, Midlands and West.

In summary there are reinforcement needs due to:

- Local constraints related to power-transfer capacity and voltage support needs;
- Asset condition; and
- Further market integration with Northern Ireland.

The projects described in this section will enable the transmission network to accommodate more diverse power flows. They will also provide benefits to existing and future users of the transmission network and facilitate future regional load growth.

The TDP contains a list of the committed projects as at 21 December 2022. Indicative completion dates are included for these projects.

We will continue to assess reinforcement needs in the North-West and to identify candidate solutions as part of the *Shaping Our Electricity Future* update, aiming to find new projects required in the area beyond those already progressing through the grid development process.

As needs and projects progress through the six-step process they will be included in the TDP.

Projects include:

- North South Interconnector Development (CP0466) – 400 kV Circuit from Woodland Transmission Station in Co. Meath to Turleenan Transmission Station in Northern Ireland.
- Castlebar – Cloon 110 kV Thermal Uprate (CP0848).
- Glenree – Moy 110 kV Thermal Uprate (CP1155).
- Cashla – Flagford 220 kV Line Refurbishment (CP1119).
- Flagford – Sliabh Bawn 110 kV Thermal Uprate (0817).
- Lanesboro – Mullingar 110 kV Thermal Uprate (CP1000).
- Lanesboro – Sliabh Bawn 110 kV Thermal Uprate (CP1078).
- Galway 110 kV Station Redevelopment (CP0871).
- Cashla – Salthill 110 kV Thermal Uprate (CP1168).
- Cashla – Galway 110 kV Circuit 1 Thermal Uprate (CP1191).
- Cashla – Galway 110 kV Circuit 2 Thermal Uprate (CP1275).
- Cashla – Galway 110 kV Circuit 3 Thermal Uprate (CP1276).
- Skerd Rocks (CP1393).
- Sligo, Srananagh 220–110 kV Protection Upgrade (CP1139).

- Sligo 110 kV Station – Srananagh 1 & 2 Bay Uprates (CP1156).
- Derryiron – Thornsbury 110 kV Thermal uprate (CP1199).
- Derryiron Busbar Uprate (CP1232).
- Coolnabacky – Portlaoise 110 kV Line Uprate (CP0835).
- Lanesboro 110 kV Station Redevelopment (CP0919).

In addition, the following additional projects are listed in the latest NDP (July 2023):

- CP0982 Flagford Sligo Capacity Needs
- CP1003 Cushaling – Portlaoise 110 kV Line Uprate.
- CP1252 Edenderry 1 (Cushaling Power Ltd).
- CP1047 Oweninny Power 2.
- CP1354 Coolshamroge 110 kV Station (Manusmore Solar Park).
- CP1250 Sprecher and Schuh Circuit Breaker replacement.
- CP1259 Cuilleen Power.
- CP1329 Stonestown 110 kV Station (Derrinlough Wind Farm).

Figure 5-1 shows the location of projects in Steps 4 to 6 in the Border, Midlands and West.

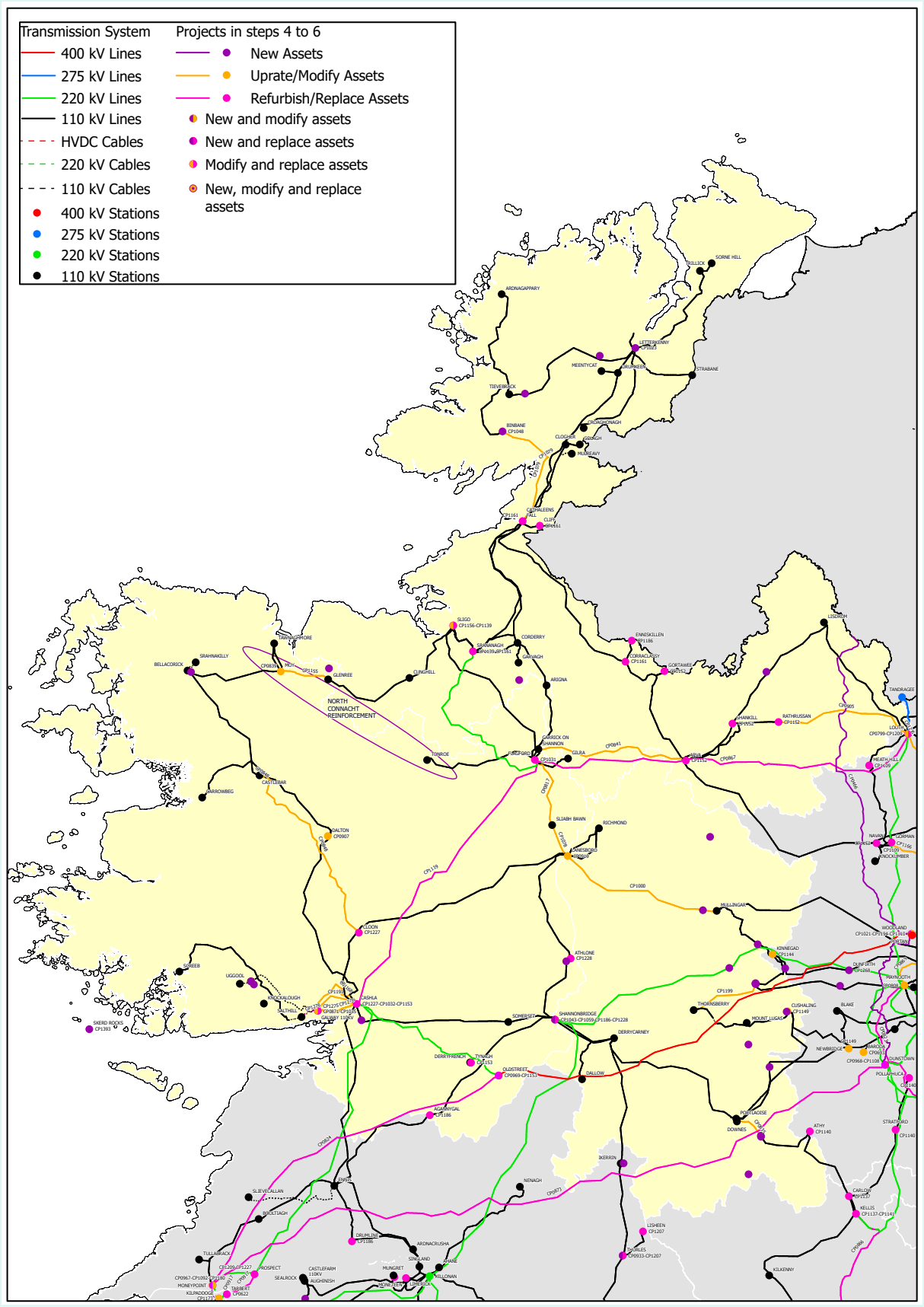


Figure 5-1: Planned network developments in Steps 4 to 6 in the Border, Midlands and West (Source: TDP 2023–2032)

3.2 The South-West and Mid-West

Summary of projects (TDP 2023)

Project category	No. of projects
New build	16
Uprate/Modify	7
Refurbish/Replace	15
Total	**38**

Active TDP projects by region (extract below from TDP 2023)

The South-West and Mid-West have a wide variety of generation sources dispersed around the region. These include wind, storage, hydro, gas, fuel oil, diesel and coal burning power stations.

The existing transmission network is composed of 110 kV, 220 kV and 400 kV infrastructure. The high capacity 220 kV and 400 kV circuits facilitate high inter-regional power flows from the region.

The development of the transmission network in the area is characterised by the connection of high levels of wind generation in Co. Cork and Co. Kerry.

These high levels of generation result in transmission network constraints as power is exported out of the area towards the Moneypoint and Knockraha transmission stations. Generation levels in the area are set to increase in the coming years.

The level of generation is greater than the capacity of the network resulting in local constraints related to power-transfer needs. These large transfers of power create voltage support needs.

To cater for the high levels of generation, network reinforcement is needed to enable the efficient export of generation from the area.

In summary, there are reinforcement needs due to:

- Local constraints related to power-transfer capacity and voltage support needs; and
- Asset condition.

The projects described in this section will enable the transmission network to accommodate more diverse power flows. They will also provide benefits to existing and future users of the transmission network and facilitate future regional load growth.

The TDP contains a list of the committed projects as at 21 December 2022. Indicative completion dates are included for these projects.

We will continue to assess reinforcement needs in the South-West and Mid-West and to identify candidate solutions as part of the *Shaping Our Electricity Future* update, aiming to find new projects required in the area beyond those already progressing through the grid development process.

EirGrid is currently working on a joint project with the French TSO Réseau de Transport d'Électricité (RTE) called the Celtic Interconnector, that would land on the southern coast of Ireland with a connection point in Cork. This interconnector is deemed a Project of Common Interest (PCI) by the European Commission. PCIs are intended to help the EU achieve its energy policy and climate objectives: affordable, secure and sustainable energy for all citizens. See Appendix A, Irish Projects in European Plans, for more information.

Projects include:

- Tarbert 220/ 110 kV Station Refurbishment (CP0622).
- Cahir and Connected Stations 110 kV Protection Upgrade (CP1111).
- Barrymore – Cahir – Knockraha 110 kV Line Uprate (CP1320).
- Coolroe, Inniscarra and Connected Stations Protection Upgrade (CP1160).
- West Cork Protection Upgrade (CP1164).
- Bandon – Dunmanway 110 kV Line Uprate (CP1211).
- Bandon – Raffeen 110 kV Line Uprate (CP1212).
- Knockraha 220 kV Station Upgrade (CP0796).
- Trabeg 110 kV Station (CP0741).
- Knockraha 220 kV Transformer Replacement (CP1222).
- Knockraha Station Celtic Interconnector (CP1215).
- Killonan 220/110 kV Station Redevelopment (CP0624).

The following projects are listed in the latest NDP (July 2023):

- CP1086 Dunstown T4201 and Woodland T4201 Transformer replacement.
- CP1223 Bandon 110 kV Busbar Rating Needs.
- CP1177 Whitegate 110 kV Station Refurbishment Project.
- CP1198 Barnakyle MIC Increase.
- CP1286 Tonroe 110 kV Station DSO.
- CP1297 Glansillagh 220 kV Station.

Figures 5-2 (a) and (b) show the location of projects in Steps 4 to 6 in the South-West and Mid-West.

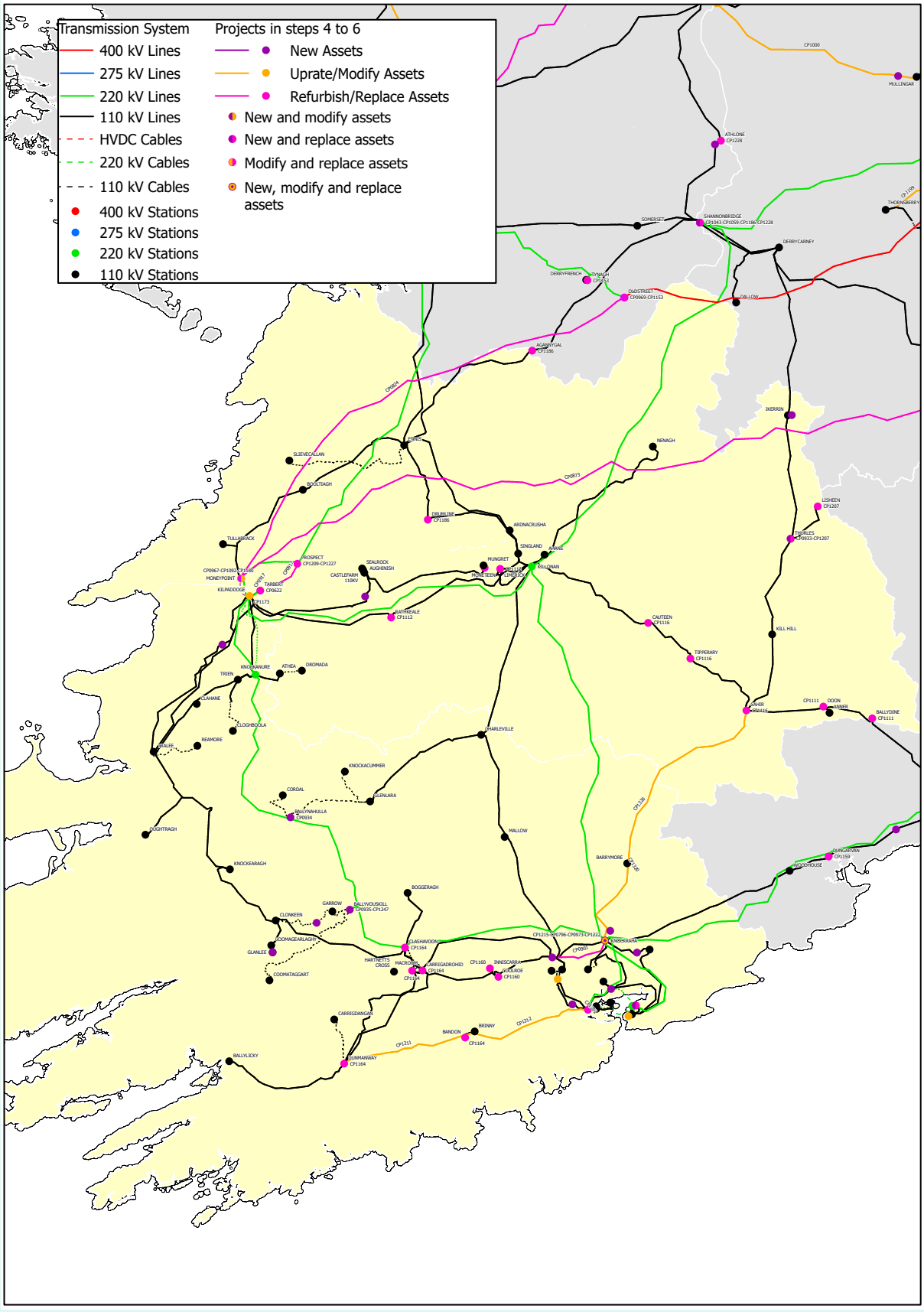


Figure 5-2 (a): Planned network developments in Steps 4 to 6 in the South-West and Mid-West (source: TDP 2023–2032)

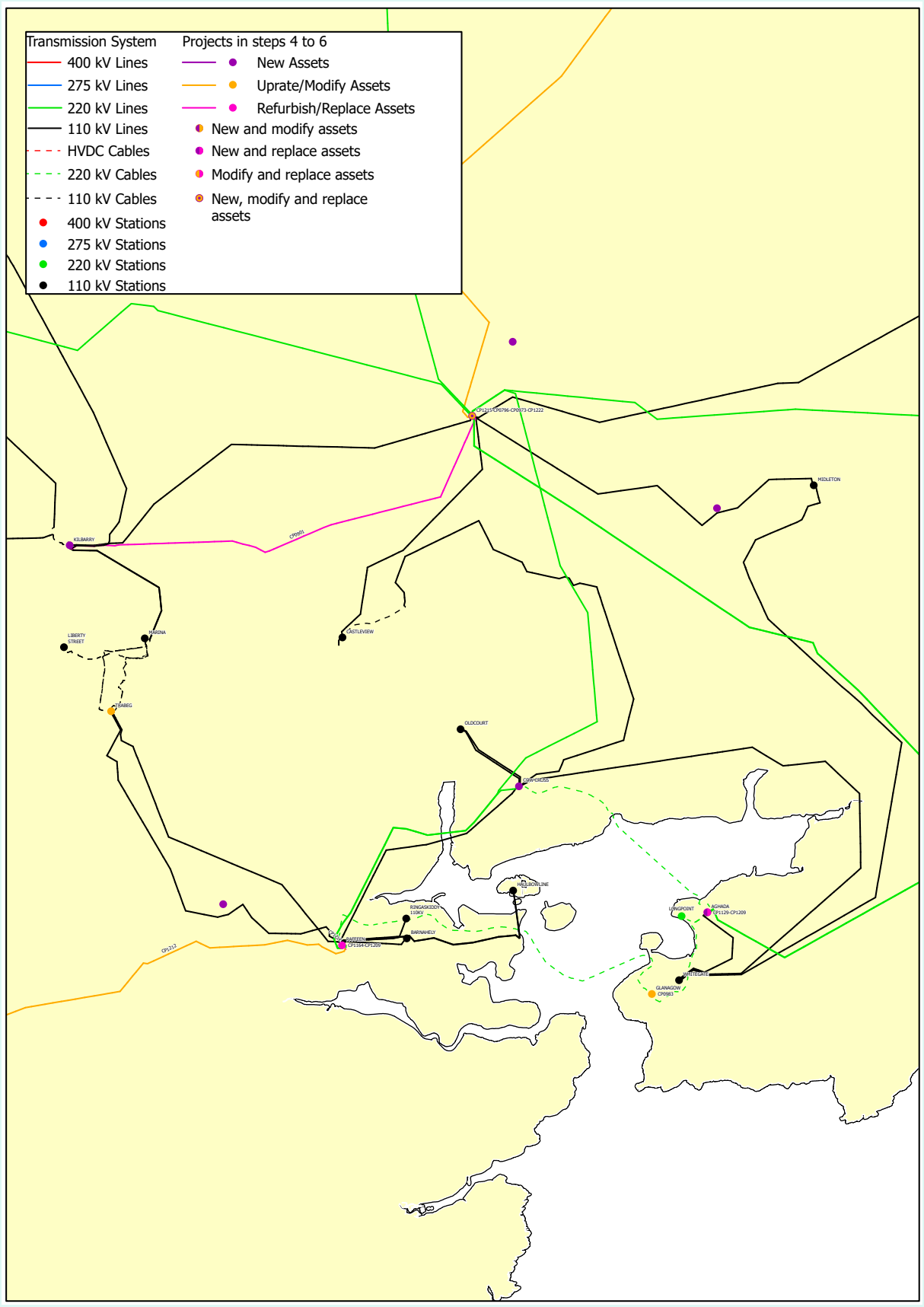


Figure 5-2 (b): Planned network developments in Steps 4 to 6 in Cork (source: TDP 2023–2032)

3.3 The South-East, Mid-East and Dublin

Summary of projects (TDP 2023)

Project category	No. of projects
New build	49
Uprate/Modify	18
Refurbish/Replace	24
Other	5
Total	**96**

Active TDP projects by region (extract below from TDP 2023)

The South-East, Mid-East and Dublin has a wide variety of generation sources dispersed around the region including pumped storage, gas burning power stations, hydro, solar, waste to energy and the 500 MW East West Interconnector (EWIC).

The greater Dublin area is the major load centre on the Irish transmission network.

As demand grows in Dublin, there are transmission capacity constraints getting power into and around Dublin. To address potential issues, the SEM Committee oversees the Single Electricity Market provisions locational capacity through the Capacity Market Auctions report[4].

The existing regional transmission network is comprised of 110 kV, 220 kV and 400 kV infrastructure. The transmission network has to meet a number of diverse power flows that can vary depending on:

- The generation dispatch;
- Network demand;
- Interconnector flows; and
- Network topology.

The network must accommodate high density demand in the area and local generation exports. Additionally, the network can be subject to high inter-regional power transfers from both north to south and south to north.

4 https://www.sem-o.com/documents/general-publications/T-4-2024-2025-Final-Capacity-Auction-Results-Report.pdf

The development of the transmission network in the area is characterised by the displacement of thermal generation in Dublin for wind generation resulting in power-transfer capacity and voltage support needs due to an increase in power flows in the region. This reason being is, in order to integrate higher RES, the energy that was supplied by the thermal plants in the Dublin area will be supplied by the onshore generation, coming from the West and South-West and from the planned offshore wind generation connections in the Irish sea. The installation of offshore wind generation will at times reduce the impact of large transfers of power into the region from the West but creates other power-transfer capacity needs in Greater Dublin.

A third party is undertaking the development of an additional HVDC interconnector between Ireland and Great Britain, known as the Greenlink Interconnector. The connection point for the interconnector is in the south-east, by a new 220 kV GIS tailed station, Loughtown, which will connect into an existing bay in Great Island station. This interconnector is deemed a PCI by the European Commission. PCIs are intended to help the EU achieve its energy policy and climate objectives: affordable, secure and sustainable energy for all citizens. See Appendix A Irish Projects in European Plans for more information.

Network reinforcement will be required to cater for the power flows resulting from additional demand, generation and interconnection. This will enable the efficient transfer of power to the load centres of the eastern seaboard and the Dublin area.

In summary, there are reinforcement needs due to:

- Local constraints related to power-transfer capacity and voltage support needs;
- Asset condition; and
- Increase in RES connections, wind and solar farms.

The projects described in this section will enable the transmission network to accommodate more diverse power flows. They will also provide benefits to existing and future users of the transmission network and facilitate future regional load growth.

The TDP contains a list of the committed projects as at 21 December 2022. Indicative completion dates are included for these projects.

We will continue to assess reinforcement needs in the South-East, Mid-East and Dublin and to identify candidate solutions as part of the Shaping Our Electricity Future update, aiming to find new projects required in the area beyond those already progressing through the grid development process.

This region includes the sub-regions of Dublin and the Greater Dublin area, Kildare, Meath and Wicklow. Given the amount of project activity in these areas, the below provides a summary of project activity in these sub-regions:

Dublin and the Greater Dublin Area

Key projects in the Dublin area include the replacement of the 220 kV cable network. They also include projects related to the reinforcement of the transmission and distribution networks in the Dublin Area. The driver for these projects is Security of Supply. Other projects are related to new generation connection in Dublin. More detail on this is provided in the TDP.

Kildare

Key projects in the Kildare area include projects related to reinforcement and line diversion of the transmission network. The driver for these projects is Security of Supply. The majority of these works will involve transformer replacements and protection relay replacements.

Meath

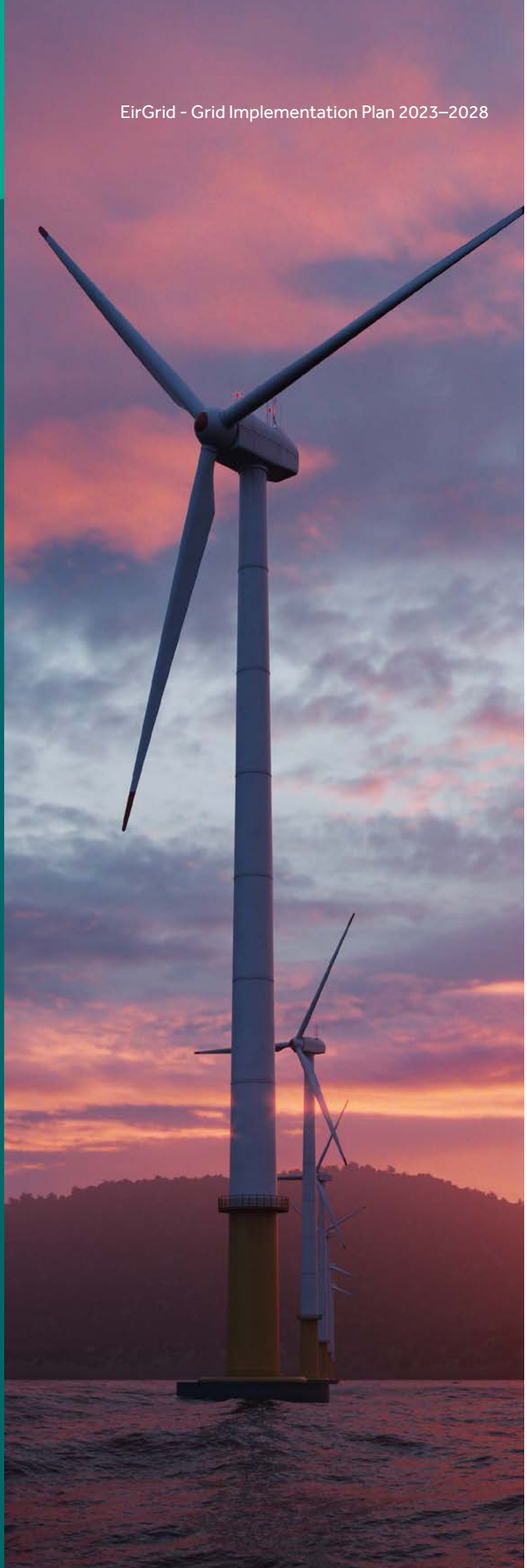
Key projects in the Meath area include projects related to reinforcement of the transmission network. The driver for these projects is Security of Supply and the majority of these projects involve replacement of aged protection relays and teleprotection interfaces in order to mitigate sub-optimal performance of the protection system.

Wicklow

Key projects in the Wicklow area involve offshore development. The driver for these projects is RES Integration. The majority of these projects involve offshore wind farms and associated new customer stations tailed to existing stations in the network.

Projects include:

- Greenlink Interconnector (CP1088).
- Grid Link Option 3 Regional Option Solution, comprising:
- Series Compensation on the existing 400 kV overhead lines that cross the country from Moneypoint in County Clare to Dunstown in County Kildare and Woodland in County Meath. The series compensation devices are planned for:
  - Moneypoint 400 kV Station Series Compensation (CP0967)
  - Oldstreet 400 kV Station Series Compensation (CP0969)
  - Dunstown 400 kV Stations Series Compensation (CP0968)
- Laois – Kilkenny Reinforcement Project (CP0585),
- Belcamp – Shellybanks New 220 kV Cable (CP0984)
- Castlebagot New 220/ 110 kV Station (CP0872)
- East Meath – North Dublin Reinforcement (CP1021).
- Kildare – Meath Grid Upgrade (CP0966).
- Louth – Woodland 220 kV Line Uprate (CP1235).
- Replacement Woodland and Dunstown Station (CP1197).
- Kellis Station 220–110 kV Protection Upgrade (CP1141).
- Athy, Carlow and Connected 110 kV Stations Protection Upgrade (CP1140).
- Crane – Wexford 110 kV Thermal Uprate (CP1172).
- Great Island 220/110 kV Transformer Uprates (CP1242).
- Cullenagh and Connected stations Protection Upgrade (CP1159).
- Butlerstown, Killoteran and Waterford 110 kV Protection Upgrade (CP1163).
- Glencloosagh Phase 1 – Rotating Stabiliser (CP1173).



- Newbridge – Cushaling 110 kV line, Stations Bay Conductors and Lead-in Conductor Uprate (CP1149).

In addition, NDP 2024 includes the following projects:

- CP1390 Maynooth – Rinawade 110 kV Uprate.
- CP1312 Athy – Carlow 110 kV Circuit 1.
- CP1296 Rinawade 110 kV GIS Station (Liffey Park) .

The projects in the South-East, Mid-East and Dublin are discussed in more detail below.

Figures 5-3 (a) and (b) show the location of projects in Steps 4 to 6 in the South-East, Mid East and Dublin.

In addition to the above, the latest NDP (July 2023) includes the following national projects which are not listed above:

- CP1316 Battery Upgrades – Diesel Generator Upgrades.
- CP1340 Connection Projects.

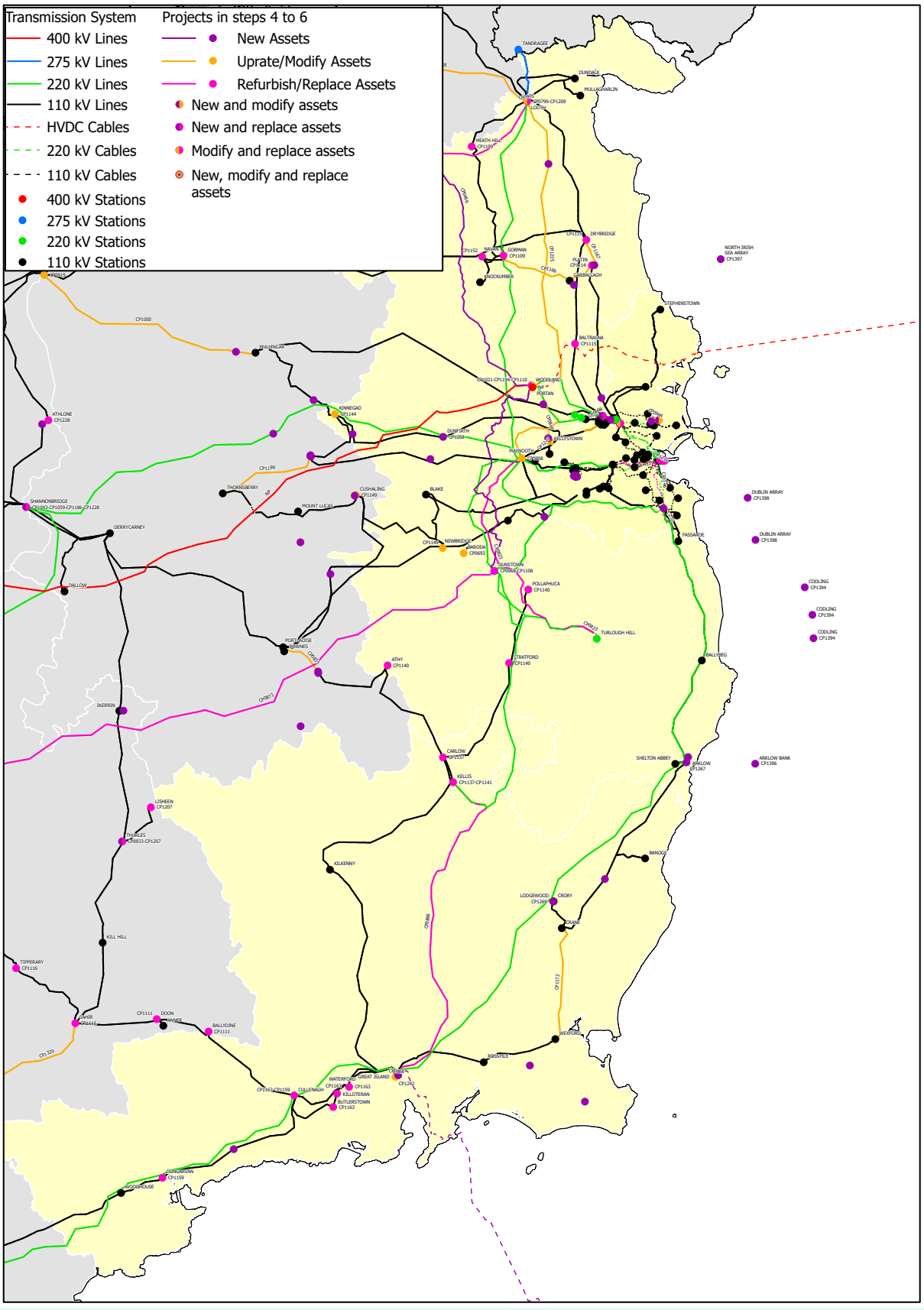


Figure 5-3 (a): Planned network developments in Steps 4 to 6 in the South-East, Mid-East and Dublin (source: TDP 2023–2032)

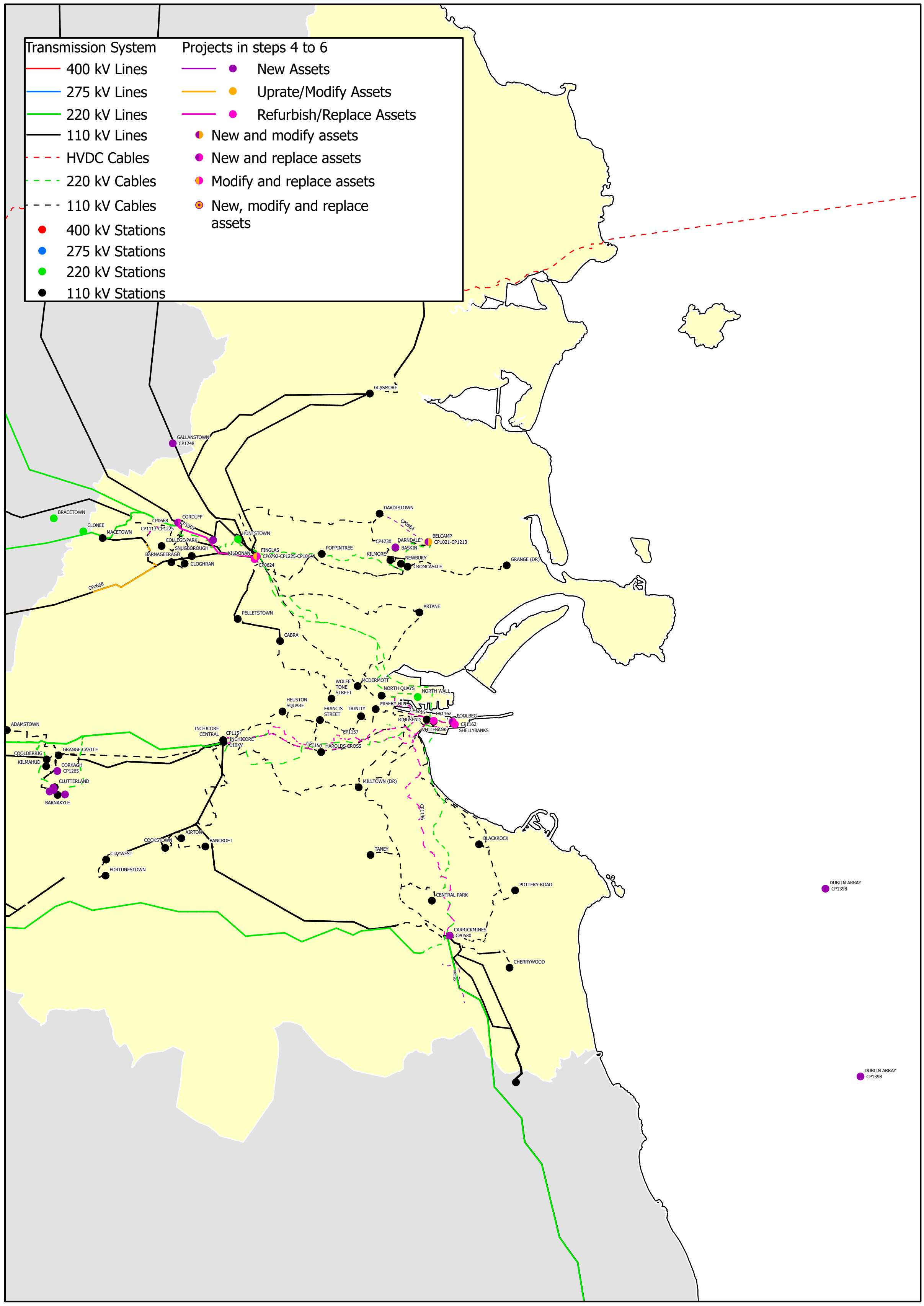


Figure 5-3 (b): Planned network developments in Steps 4 to 6 in the Dublin region (source: TDP 2023–2032)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PART B

Implementation

4. Our approach to the environment

4.1 Introduction

EirGrid has a statutory obligation to ensure that the operation, maintenance and development of the national transmission system has due regard for the environment.

What this means in practice is that all aspects of the environment are central to the decision making process when it comes to developing the grid.

4.2 Achievements since 2018

The development of EirGrid's major projects in accordance with its Project Development and Consultation Roadmap has ensured that environmental issues were considered at an early stage in project development.

EirGrid's planning and environmental team is embedded into every grid development project, in order to ensure that environmental issues are at the forefront of decision-making. Early involvement in projects allows potential environmental issues to be identified and avoided or managed in the course of project development.

Screening for Appropriate Assessment (AA) is an integral function of the EirGrid environmental team. Screening for Appropriate Assessment of a proposed development is undertaken or managed by EirGrid's Senior Ecologist. This process is fundamental in determining the planning status of projects that normally fall under the category of exempted development.

This process of internal Screening for Appropriate Assessment has been subject to scrutiny by the High Court in a Judicial Review and has been found to be robust.

The planning and environment team is fully integrated into project teams and EirGrid's Senior Planners and Senior Ecologist have acted as expert witnesses at multiple Oral Hearings conducted by An Bord Pleanála in respect of Strategic Infrastructure Development (SID) applications. In addition, during the pre-application process, the Senior Ecologist liaises closely with Statutory and non-statutory environmental agencies to discuss and address any issues regarding the environmental aspects of a proposed development.

EirGrid has developed a specific environment space on its website. This allows for a clear external articulation of EirGrid's commitment to, and approach to, the protection of the environment in its grid development and other functions. It also ensures easy public access to the information on the environment that EirGrid has prepared or gathered over the last number of years, including its evidence-based studies and guidelines.

4.2.1 Action for nature

EirGrid has accelerated its biodiversity action since the Irish government declared the biodiversity and climate emergency in 2019, the Chief Infrastructure Office's 2020–2025 Strategic Action Plan, five biodiversity initiatives were assigned the highest level of business priority.

In 2019, we commenced a series of nature restoration projects starting with the East West Interconnector (EWIC) Biodiversity Project, in collaboration with Hitachi Energy. Now in Year 3 of the project, we have seen significant successes including:

- Sowing native-grown yellow rattle and a new meadow management regime involving two cuts and use of a 'chain harrow' to favour wild flowers over grasses.
- Planting of native treelines and an orchard of Irish heritage varieties (on habitats of low ecological value).
- Native woodland plants appearing in existing parkland after stopping herbicide usage.
- Establishment of insect habitats in exposed earth banks and standing and dead wood.

The project is registered under the NBDC's All-Ireland Pollinator Plan and was selected as a case study in the NPWS' 2020 Irish Business and Biodiversity Project report.

To ensure our restoration methods are evidence-based, EirGrid commissioned Wetlands Survey Ireland's (WSI) botanists for a multi-year monitoring project. WSI survey 'quadrats' in two fields managed differently (one cut twice with hand removal of weeds; one cut once and seeded with native-certified yellow rattle). The results will help us identify optimal evidence-based approaches to grassland restoration and will influence EirGrid and ESB's existing methods for restoring nature at substations. The results will also interest restoration scientists, who can review our findings online.

There were inevitably some challenges including loss of planted trees to the local hare population (all of which were replanted). Details on the EWIC Biodiversity Project, including photographs and mapping of biodiversity actions are available on our website.

In 2022, we established a new requirement for our consultants to implement 'Nature Inclusive Design' proposals across our capital projects in collaboration with our in-house ecologist, ESB and nature conservation bodies where appropriate.

On underground cable (UGC) projects, in consultation with ESB and technical advice from arboriculturists, we are exploring planting certain shallower-rooted native shrub species over off-road cable routes, by integrating high performing root barrier membranes. We are undertaking root radar surveys to verify predicted root depths of different species, identified in the scientific literature. We have established a European Working Group chaired by the Renewable Grid Initiative to integrate best European practice. At passing bays, where road boundaries are temporarily removed to allow traffic flow during in-road cable laying, we are 'building back better', by re-planting with locally sourced, native species, in species-rich mixes (five woody species per 30 m section). We avoid species-rich hedges and mature trees wherever possible and promote best practice TEAGASC hedgerow planting methods in areas not already comprising species-rich hedges. In 2022 and 2023, these measures were committed over a minimum of 154 km of cable projects in counties Mayo, Roscommon, Cork, Kildare and Meath.

In 2023, we initiated a new contract to design risk assess, cost and identify technical specifications for so-called marine 'Nature Inclusive Design features', such as reef cubes, 'fish hotels' and 'eco-concrete mattresses'. The expert consultants delivering this contract include ARC Marine, one of the industry leaders in the design, manufacture, installation and monitoring of marine NID.

4.2.2 Innovation and research strategy

In December 2021, EirGrid and SONI published our Innovation and Research Strategy. The strategy sets out a roadmap to delivering increased levels of innovation and identifies a number of innovative programmes in a co-ordinated and prioritised manner across a 'now, next, beyond lens'.

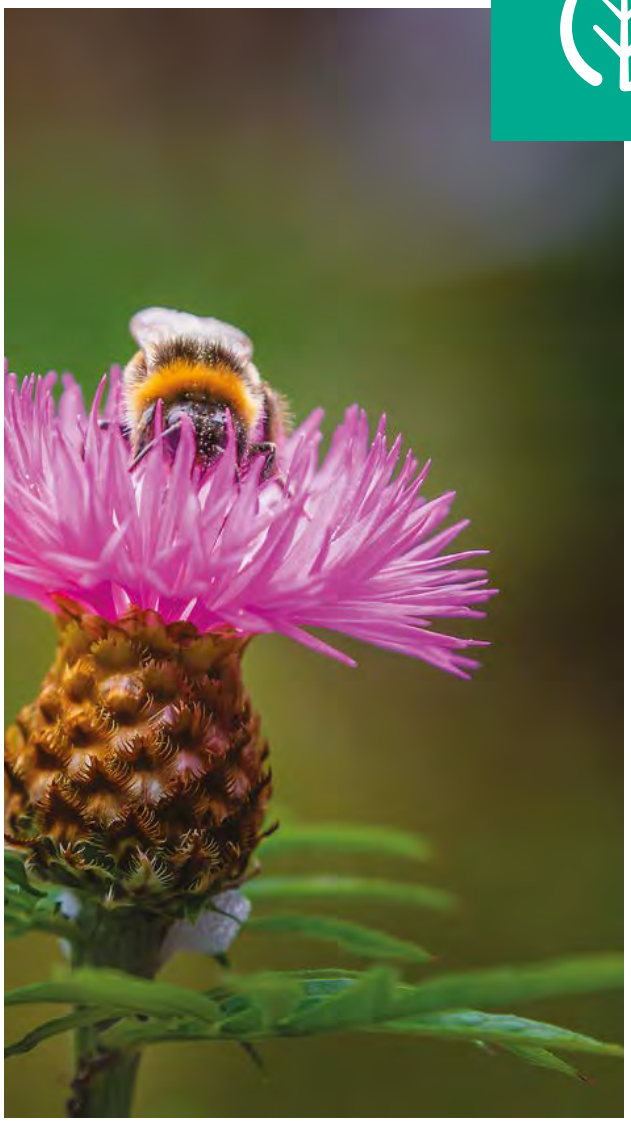
4.2.3 SEA monitoring process

Article 10 of Strategic Environmental Assessment Directive (2001/42/EEC) requires the competent authority to monitor the significant environmental effects of implementing a plan/programme, or modification to same to, inter alia, identify at an early-stage unforeseen adverse effects and undertake remedial action, where required.

In 2022, EirGrid published a report summarizing EirGrid's monitoring of the IP. The overarching aims of monitoring were those identified in the Environmental Protection Agency's (EPA) 2020 Guidance on SEA Statements and Monitoring. Specifically, the overarching aims were to: (i) identify the real effects of the Plan (including unforeseen effects); (ii) propose remedial mitigation measures (i.e., recommendations for the next plan cycle), where mitigation measures have not been implemented or were not effective, and (iii) Identify data gaps. Recommendations were proposed to remedy or refine data collection, fill data gaps, improve monitoring and implementation of environmental mitigation and to enhance future SEA monitoring.

4.3 Challenges

Challenges exist in relation to the fulfilment of environmental statutory obligations. EirGrid are committed to ensuring continued compliance with governing law and practice particularly in relation to protected sites and habitats, appropriately mitigating against climate change and avoiding and mitigating against adverse environmental impacts in topics such as biodiversity, cultural heritage, water, landscape, soils and noise.



4.4 Policies and objectives

The following environmental policies and objectives developed for this IP will ensure appropriate protection of the environment in grid development:

4.4.1 General

It is the policy of EirGrid:

ENVP1: To uphold best environmental practice in the design and appraisal of onshore and offshore grid development, considering impacts onshore, offshore, cumulatively and across state boundaries where relevant.

ENVP2: To continually improve EirGrid's approach to the protection of the onshore and marine environment from development impacts, by applying the findings from monitoring at plan and project level to improve existing processes and fund and resource new processes where required.

ENVP3: To apply a strategic/programmatic approach to onshore and offshore grid development to optimise environmental assessment and public engagement at a regional/landscape scale. Through programmatic approaches, reduce timescales and resources and increase project delivery rate to achieve the 2030 targets of up to 80% electricity from renewable sources.

ENVP4: To require the use of sustainable urban drainage systems in all new grid developments where appropriate.

ENVP5: To have regard to the statutory guidelines on the Planning System and Flood Risk Management, as may be revised/updated when devising grid development projects and in the preparation of grid development strategies and plans.

ENVP6: To seek to preserve and maintain air quality in accordance with good practice and relevant legislation in the construction of grid development projects onshore and offshore.

ENVP7: To facilitate new technologies which minimise noise emissions on onshore and offshore grid development.

ENVP8: To seek to preserve and maintain noise quality (including underwater noise) in accordance with good practice and relevant legislation.

ENVP9: To have regard to the objectives of the National Landscape Strategy and the Regional Seascape Character Assessment in onshore and offshore grid development projects, to protect landscapes and seascapes from grid development.

ENVP10: To ensure appropriate dust suppression during construction works.

ENVP11: To avoid or minimise impacts on surface, ground and marine water quality and support achieving objectives of the Marine Strategy Framework Directive and Water Framework Directive.

ENVP12: To deliver projects while ensuring natural resources in coastal and marine waters are exploited in a sustainable manner so that biodiversity is maintained or achieved and that European regional seas are clean, healthy and productive.

ENVP13: To protect the water environment, water quality and aquatic ecology in accordance with the EU Water Framework Directive, the development of its transmission projects.

ENVP14: To contribute as appropriate, to the protection of existing and potential water resources and their use by humans and wildlife, including rivers, streams, wetlands, groundwater, coastal waters and associated

habitats and species in accordance with the requirements and guidance in the EU Water Framework Directive 2000(2000/60/EC), the European Union (Water Policy) Regulations 2003 (as amended), the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI No. 272 of 2009), the Groundwater Directive 2006/118/EC and the European Communities Environmental Objectives (groundwater) Regulations, 2010 (S.I. No. 9 of 2010) and other relevant EU Directives, including associated national legislation and policy guidance (including any superseding versions of same).

ENVP15: To support the application and implementation of a catchment planning and management approach to development and conservation, including the implementation of Sustainable Drainage System techniques for new development.

ENVP16: To develop a robust and evidence-based methodology, leveraging Geographic Information technology to quantify losses of rural field boundaries on grid projects, having regard for updates to Environmental Impact Assessment legislation.

ENVP17: Risk assess the potential to plant certain shallower-rooted woody species over High Voltage Underground Cables, informed by engagement with the ESB and other Transmission System Operators, and through use of technological innovations to identify root extents.

ENVP18: To cooperate and knowledge share with government departments and other state bodies, to advance the preparation and implementation of government legislation and policy onshore and offshore, including on matters of renewable energy and associated grid development.

It is the objective of EirGrid:

ENVO1: To ensure that grid development projects onshore and offshore follow standard approaches to environmental assessment of grid development projects including EirGrid topic specific guidelines on Electromagnetic Fields (EMF), Cultural Heritage and Ecology and international best practice.

ENVO2: To continue to prepare and/or update EirGrid evidence-based environmental guidelines, to integrate updated evidence or assess new types of development including offshore.

ENVO3: To develop the environment space on the EirGrid website as a tool for sharing information on EirGrid's impacts on and actions for the environment.

ENVO4: To have regard to any future National Landscape and/or Seascape Character Assessment in the development of its grid development projects.

ENVO5: That all grid development proposals and, in particular, transmission substation developments, shall carry out, to an appropriate level of detail, a site-specific Flood Risk Assessment that shall demonstrate compliance with all current Guidelines, standards and best practice. The Flood Risk Assessment shall pay particular emphasis to residual flood risks, site-specific mitigation measures, flood-resilient design and construction and any necessary management measures.

ENVO6: To identify the nature of tourism in a project area; to consider the cumulative/in combination impact on tourism of a project and to consider short term and long term impacts of grid development projects on tourism as appropriate.

ENVO7: That development of new transmission substations will not occur on sites which are below estimated flood levels for CFRAM Zone A or Zone B, without the relevant justification test.

ENVO8: To continually improve the effectiveness of project level mitigations and fill knowledge gaps by reviewing project-level environmental monitoring reports and identifying any instances of mitigation failure to inform remedial actions and/or revisions to future mitigation specifications.

ENVO9: To continually improve the effectiveness of plan level mitigations and fill knowledge gaps by regularly (where possibly annually) publishing SEA-related monitoring reports and implementing recommendations for process improvements.

ENVO10: To establish and maintain a Geographic Information System of existing and proposed EirGrid grid development projects onshore and offshore, to assist with the identification of cumulative and transboundary impacts, increase geospatial resources and deepen application of GI technologies to optimise delivery of EirGrid's functions and environmental objectives generally.

ENVO11: To insert in project environmental assessments for onshore and offshore projects, new requirements for Contractors to provide written environmental monitoring reports to the EirGrid Planning and Environmental Unit, in addition to any prescribed bodies. This will increase the flow of information back to EirGrid and between project and plan level assessments to ensure mitigation efficacy is understood and mitigation specifications are continually improved.

ENVO12: To ensure that site selection and design of new overground infrastructure onshore and offshore considers views from existing purpose-built tourism facilities, as well as views from touring routes, walking trails, scenic viewing points, blueways and greenways.

ENVO13: To identify the nature of fisheries and aquaculture within the area of each grid project; fully consider cumulative/in combination impacts on fisheries and aquaculture from each project and consider short and long-term impacts of grid development projects on fisheries and aquaculture.

ENVO14: To consider the potential impact upon tourism in the development planning of transmission projects and to protect tourism resources through the appropriate and sustainable planning and design of transmission infrastructure development.

ENVO15: To integrate Grid IP policies into lower-tier plans and programmes and projects (so-called 'tiering' or transfer of mitigation from higher to lower levels) and monitor, report and continually improve effectiveness of implementation via the SEA monitoring process.

4.4.2 Biodiversity

It is the policy of EirGrid:

BIODP1: To protect flora, fauna and habitats and sites designated in the Habitats Directive, the Birds Directive, the Wildlife Act 1976 (as amended), the Flora Protection Order (S.I. no. 235 of 2022) and the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended).

BIODP2: To avoid or where unavoidable minimise the impact of grid development on existing trees and hedgerows and all semi-natural habitats.

BIODP3: To protect and wherever possible enhance wooded, wetland and other habitats which function as wildlife corridors, in accordance with Article 10 of the EU Habitats Directive.

BIODP4: To design habitat creation, restoration and enhancement into project scopes wherever possible, (except where constrained by external factors outside EirGrid's control such as third party land ownership on linear infrastructure), in collaboration with ESBN for onshore assets, while complying with relevant technical and safety standards.

BIODP5: To optimise use of the existing six-step Framework for Grid Development for biodiversity protection and restoration, through use of best available field and desktop data including the Tailte Éireann Land Cover to avoid sensitive features in the identification of the study area and technology (Step 3), the identification of route options (Step 4) and development of the preferred route (Step 5).

BIODP6: To integrate into offshore grid projects risk-assessed Nature Inclusive Design measures with proven ecological performance. The performance of such measures will be monitored to inform adaptive management and the results of this monitoring and details of any corrective actions will be openly shared to advance the common understanding of marine NID.

BIODP7: To share high quality biodiversity and other environmental data collected on EirGrid projects onshore and offshore, in support of the National Biodiversity Plan 2023–2030 and Irish government Open Data Strategy 2023–2027 and ensure this is readily accessible through the National Biodiversity Data Centre and open source portals (including the Irish Government data.gov.ie portal). EirGrid will also seek to make EirGrid's open data purposeful, by engaging with relevant third parties in public authorities, academia and industry to inform them of the scope of and any limitations to datasets.

BIODP8: To develop and implement marine biodiversity policy as EirGrid develops offshore grid projects, to include considerations for Marine Protected Areas, Marine Nature Inclusive Design, monitoring of mitigation effectiveness and providing open access to high quality environmental data, in line with European and national legislation and policy.

It is the objective of EirGrid:

BIODO1: That any grid development project, either individually or in combination with other projects, that has the potential to give rise to significant effect on the integrity of any European (Natura) site(s) shall be subject to Appropriate Assessment (AA) in accordance with Article 6 of the EU Habitats Directive.

BIODO2: Having regard to BIOD01 and applying the mitigation hierarchy, deliver No Net Loss of biodiversity, if not Net Biodiversity Gain, on all EirGrid projects (onshore and offshore), except where external factors beyond EirGrid control constrain this objective (e.g., third party land ownership on linear infrastructure). As a last resort in such cases where external factors constrain delivery of NNL or NBG, EirGrid will consider off-site habitat compensation. Such off-site compensation may be delivered by third party suppliers (e.g., not-for-profits) on third party lands, or on ESBN-owned lands, or (if and when established through appropriate governance) on lands acquired by EirGrid for biodiversity compensation. Where EirGrid concludes NNL or NBG has been achieved, this conclusion will be underpinned by objective and scientifically rigorous data. The approach may involve use of a biodiversity metric or tool and qualitative assessment, but will have regard for and keep step with guidance from Irish government, the Chartered Institute of Ecology Management or other authoritative sources.

BIODO3: To continue the retrofitting of bird flight diverters on existing overhead lines (where the opportunity arises during line repairs) and seek to establish a citizen science reporting portal for bird strikes to better understand likely high risk lines to birds and collaborate with ESBN, eNGOs and research institutes to continually review and improve the effectiveness of bird flight diverters.

BIODO4: To standardize the reporting of residual biodiversity impacts (after mitigation) at a geographic frame of reference and report on trends in the course of SEA-related monitoring.

BIODO5: To establish the submission of ecological records to the National Biodiversity Data Centre as Business-as-Usual, by imposing as a contractual requirement at planning and where relevant operational phases of grid developments onshore and offshore.

4.4.3 Climate change

It is the policy of EirGrid:

CLIMP1: To integrate measures to address climate change into grid development, through effective mitigation and adaptation responses, in accordance with available guidance and best practice.

CLIMP2: To support, through all activities and, in particular, connection of low-carbon and renewable energy generation onshore and offshore, delivery of the Government's target of up to 80% electricity consumption generated from renewable energy sources by the year 2030.

CLIMP3: That there is no increase in flood risk as a result of grid development and to ensure any flood risk to the development is appropriately managed.

It is the objective of EirGrid:

CLIMO1: To assist towards meeting national and EU climate targets, in particular the Government's Climate Action Plan 2023 (and future plans). Specific to grid development, EirGrid will deliver its obligations under the Governments Sectoral Climate Change Adaptation Plan (Electricity and Gas Networks) in grid development plans and projects.

CLIMO2: To mitigate the impacts of climate change through policies and processes that reduce energy consumption and energy loss/wastage. EirGrid will meet committed targets to reduce Green House Gas Emissions under the international Science Based Targets initiative, towards which progress will be reported publicly.

CLMO3: To develop site-specific measures to protect critical grid infrastructure from the effects of climate change.

4.4.4 Cultural heritage

It is the policy of EirGrid:

CULTP1: To conserve and protect designated and undesignated architectural assets and their settings (onshore) and archaeological heritage (onshore and offshore).

CULTP2: To protect known and unknown (potential) archaeological material in grid development, by avoidance, best practice mitigation measures and by process improvements identified from review of project level environmental monitoring reports.

CULTP3: To engage at an early stage and, iteratively, with local authority experts and the National Monuments Service to identify the relevant scope of archaeological assessments and method statements on all grid projects onshore and offshore.

It is the objective of EirGrid:

CULTO1: To obtain summary archaeological monitoring reports for grid developments onshore and offshore in collaboration with ESB (where relevant) and share summary findings from the Database of Irish Excavation Reports on the EirGrid webpage.

CULTO2: To review and update EirGrid's 2009 Code of Practice, to include offshore archaeological features in consultation with relevant experts in the Department of Housing, Local Government and Heritage.

4.4.5 Transmission

It is the policy of EirGrid:

TP1: To promote and facilitate the sustainable development of a high-quality transmission grid to serve the existing and future needs of the country, in accordance with EirGrid's strategy and the *Shaping Our Electricity Future* Transmission Network Analysis.

TP2: To consider all practical technology options in the development of its projects, including maximising use of the existing grid.

TP3: To continue to be proactive in the development of emerging or innovative technical solutions for the development of the transmission grid.

TP4: To effectively manage renewable surpluses by promoting and/or utilising Demand Flexibility focused on renewable generation.

TP5: To ensure EirGrid and ESB Networks develop and implement an end-to-end TSO/TAO joint approach to optimise delivery of onshore and offshore grid infrastructure projects.

TP6: To promote Security of Supply in order to maximise access to generation and promote future interconnections with neighbouring countries.

4.4.6 Project development

It is the policy of EirGrid:

PDP1: To adhere to and regularly review EirGrid's approach to developing the grid and any associated guidelines, consenting precedents, policies and processes, to ensure the structured, consistent development of all its grid development projects.

PDP2: To promote sustainable grid development by balancing complex and/or competing technical, economic, environmental, social and deliverability goals and priorities in decision-making.

PDP3: To continue to build staffing capacity to adequately resource onshore and offshore grid development and operation, across engineering, environmental, project management, administrative, legal and human resources.

PDP4: In selecting the proposed location or route of a new project, EirGrid will identify and explore all reasonable alternatives to identify the optimal solution/Best Performing Option. The selection of the location or route will be determined following a multi-criteria assessment of technical, economic, environmental, socio-economics and deliverability and will be publicly consulted upon.

PDP5: To seek opportunities to co-locate grid projects with existing and proposed linear infrastructure where appropriate (e.g., greenways, blueways, utilities) in collaboration with other state authorities and other parties to minimise cost and social, environmental, construction and operational impacts when delivering grid projects.

It is the objective of EirGrid:

PDO1: To undertake periodic reviews, as appropriate, of the approach and associated guidelines, policies and processes, to ensure that the approach remains a suitable and sustainable structured approach to the development of grid development projects.

4.4.7 Project consenting

It is the policy of EirGrid:

PCP1: To comply with relevant legislation and have regard for relevant guidelines in planning and consenting of grid development projects and make provision for any policies for the provision of grid development set out in these documents. In particular, to have regard to the National Spatial Strategy, National Planning Framework, National Marine Planning Framework, Offshore Renewable Energy Development Plans, Regional Planning Guidelines and Regional Spatial and Economic Strategies.

PCP2: To have regard to precedent arising from decisions of the Competent Authorities and of the High Court in Judicial Review of decisions, relating to the planning and consenting of grid development projects.

PCP3: To promote sustainable grid development by balancing complex and/or competing technical, economic and environmental goals and priorities in decision-making.

PCP4: To prepare and/or update internal policies and processes related to the planning and consenting of grid development projects, including the existing internal process for Screening of Exempted Development and Screening for Appropriate Assessment.

PCP5: To fulfil EirGrid's role in the implementation of European legislation, policy and guidance on Accelerated permitting for renewables and associated grid infrastructure, onshore and offshore, having regard for environmental protections and eligibility criteria.

4.4.8 Consultation and engagement

It is the policy of EirGrid:

CEP1: To consult and engage on grid developments with statutory and non-statutory stakeholders, including communities, landowners, fishers, aquaculture operators and the general public, at the earliest meaningful stage of a project's development. Consultation will be transboundary where relevant, to include governments, statutory nature conservation bodies and other agencies, including the Northern Ireland Environment Agency for cross-border matters.

CEP2: To recognise and develop the essential role that communities, landowners, fishers and aquaculture operators and other stakeholders play in grid development and to engage with different stakeholders as appropriate at all stages of a grid development project and in plan-making.

CEP3: To ensure consultation and engagement feedback is appropriately considered in decision making.

CEP4: To facilitate formal complaints and to resolve such complaints in a timely manner.

It is the objective of EirGrid:

CEO1: To engage with statutory and non-statutory stakeholders in a meaningful manner as set out in the EirGrid Engagement Handbook and Toolkit and via EirGrid's Agricultural Liaison Officers and Community Liaison Officers.

CEO2: To maintain and update as required EirGrid's Complaints procedure.

4.4.9 Human beings

It is the policy of EirGrid:

HBSP01: To consider and address social impact and the impact on human beings in the development of grid development projects, as appropriate.

HBSP02: To examine the social impact of grid developments on the receiving environment as appropriate and in accordance with EirGrid's methodology for Social Impact Assessment.

HBSP03: To ensure that all grid development projects are screened for the requirement for a Social Impact Assessment and, where so required, that such Assessment will accompany an application for statutory consent.

HBSP04: To promote and deliver EirGrid's Community Benefit Policy and Proximity Payments for certain categories of grid development projects, in accordance with established terms of reference.

HBSP05: To assess and mitigate wherever possible the potential impact upon tourism in the development of grid development projects onshore and offshore, particularly on natural and unspoilt attractions with identified tourism potential.

HBSP06: To assess and mitigate wherever possible the potential impact upon fisheries and aquaculture in the development of grid development projects particularly in areas of economic importance to the seafood sector.

It is the objective of EirGrid:

HBSO1: To implement our new Community Benefit policy and fund high quality sustainability, biodiversity and community projects in areas affected by grid development projects. All projects are aligned with United Nations Sustainable Development Goals and administered through a Community Forum to ensure they are designed by local communities, for local communities.

5. Our approach to technology

5.1 Introduction

EirGrid considers all practical technology options and aims to optimize the existing grid to minimise the need for new infrastructure. By doing this, EirGrid ensures that the grid is fit for purpose beyond 2030 and that the grid uses technology to minimize new grid infrastructure.

5.2 Achievements since 2018

Over the last number of years, EirGrid has undertaken a leading role in the introduction of new technologies to the Irish transmission system for the benefit of consumers.

New technology ensures that the grid is fit for purpose beyond 2030 and that the grid utilises technology to minimise new grid infrastructure. For example, alternative technologies, such as mature non-wires alternatives and new technology options are considered in all future developments of the network.

Technology enablement ensures that the integration of new technologies and innovations on the power system is met in order to allow the grid to operate efficiently and effectively.

This is typically achieved by:

- Addressing the challenges associated with the integration of large-scale storage technology.
- Facilitating the provision of system services from new and existing RES as well as small-scale flexible generation.
- Enabling demand side flexibility to maximise its potential.
- Engaging with large energy users to investigate the potential for large energy users to contribute to system flexibility.
- Proactively engaging with industry and academia to review and evaluate emerging technologies which are not covered by the other work streams.

The use of new technologies can bring a number of advantages, including enhanced operational performance, improved system reliability, shortened construction times and reduced impact on the environment. All of these have the potential to reduce system costs.

We have continued to examine the performance of underground cables and their technical impact on the network, noting their advantage in terms of the potential for reduced visual impact compared with overhead line technologies. However, this must be balanced against the potential impacts on sensitive environmental and ecological areas from what can be significant civil engineering works. We will continue to assess technological developments in this area to ensure the full capability of this technology is available for use on the Irish grid.

The transmission grid in Ireland, similar to other European and international grids, uses high voltage alternating current (HVAC). Where power is to be transferred over long distances it may be cost effective and technically possible to do so using high voltage direct current (HVDC). Over the last number of years we have continued to examine the performance of HVDC and its technical impact on the network.

We have investigated series compensation, which changes the electrical performance of a circuit on which it is installed. This technology can provide significant benefit by increasing the practical transfer capability of the system – essentially getting more power through the existing transmission network.

Demand Side Management and Response has been used in Ireland for many years, primarily at the larger industrial level. It works when customers reduce their electricity consumption on request. This helps us to operate the grid more securely. We have developed initiatives such as Power Off and Save and have contributed to the RealValue Project which demonstrate the advantages such initiatives can have for domestic consumers.

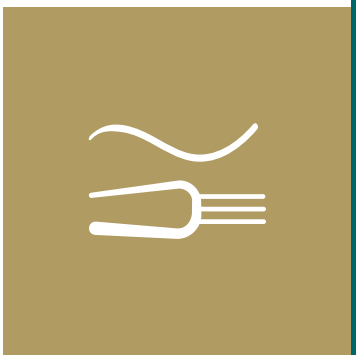
We are also investigating the use of modular power flow control technologies that may enable us to make better use of the existing transmission network. The goal is to use less visually intrusive pylons, particularly in sensitive areas (i.e., composite polesets, etc.).

Over the last number of years, we have learned that the level of uncertainty over the future usage of the grid is increasing. To cater for this, we are changing how we plan the grid. Our new approach involves developing a range of energy scenarios (possible situations or events that impact on energy).

Given the strong emergence of offshore wind in delivering Renewable Ambition, strong progress is being made to set the required regulatory frameworks and connection principles and methods in place. The initial focus leading up to 2030 is on developments on the east coast and south coast, which places the generation close to the largest centre of demand, again reducing network constraints and the scale and quantity of network reinforcements required.

5.3 Challenges

EirGrid has a statutory obligation to maintain and develop a safe, secure and reliable electricity transmission grid. This must be based upon proven technologies. While EirGrid is investing in innovation and exploring new technologies, it must ensure that power continues to flow from where it is generated to where it is required in an economical and efficient manner.



6. Our approach to project development

6.1 Introduction

As is addressed in Part C of this IP, EirGrid undertakes a number of grid development projects as part of its statutory role in maintaining, developing and operating the transmission grid.

A focus in the development of our projects is on matters of proper planning and sustainable development. This requires a careful balancing of the technical need and solutions for a project with appropriate and adequate opportunities for public participation in the project development process. It must also include significant emphasis and focus on the environmental impact of the project, primarily in reference to the EU Habitats Directive, Birds Directive and EIA Directive, but also in terms of social impact.

EirGrid has been proactive in developing clear structured processes for the planning and development of electricity transmission infrastructure. This includes the technical development of projects in collaboration with matters of planning, environment, public affairs, administrative, financial and corporate governance.

As outlined in Chapter 2, EirGrid has an established approach to developing grid projects in Ireland. This is a 'beginning-to-end' process, from the identification of a need to develop the grid to the eventual construction and operation of a project. This approach integrates the technical development of a project with increased and enhanced engagement with stakeholders, communities and landowners. This approach has been implemented for a number of years and was recently updated last year.

6.2 Achievements since 2018

EirGrid has developed a number of internal policies and processes to govern the development of its projects. These have ensured consistency of approach, as well as expert environmental input into all stages of project delivery. EirGrid's senior planners and ecologist are embedded into every grid development project being undertaken, in order to ensure that planning and environmental issues are at the forefront of all strategy and decision-making.

The Framework for Grid Development was reviewed and updated in 2021 to ensure that it reflected the evolving approach by EirGrid to best-in-class project development. This review did not fundamentally alter the nature of the six-step process, as summarized below.

A guide on how we develop the Grid and how the public can engage in this process is published on the EirGrid website.

Step 1 How do we identify the future needs of the electricity grid?

Step 2 What technologies can meet these needs?

Step 3 What's the best option and what area may be affected?

Step 4 Where exactly should we build?

Step 5 The planning process.

Step 6 Construction, energisation and benefit sharing.

Figure 6-1 General structure of EirGrid's approach to developing the grid

Step 1: How do we identify the future needs of the electricity grid?

Assess the existing system to identify and verify any issues or risks arising for the transmission grid that may result in a grid development project;

Step 2: What technologies can meet these needs?

Developing a long list, and subsequent short list, of technology options to meet the identified need;

Step 3: What's the best option and what area may be affected?

Identifying a preferred technology solution (and corresponding study area) from the short list of options. This includes identifying environmental and other constraints occurring in the study area. It should be noted that, depending on the results from the selection process, which utilises multi-criteria analysis, more than one option may be brought forward to Step 4.

Step 4: Where exactly should we build?

Identifying the specific nature, extent and location of the proposed development.

Step 5: The planning process

Obtaining statutory consent for the proposed development, or confirming that the proposed development is exempted development not requiring consent;

Step 6: Construction, energisation and benefit sharing

Building the project on the ground in liaison with ESB Networks (ESBN) and administering our community gain fund to affected communities.

6.3 Challenges

Since the framework has been implemented, all internal policies and processes relating to grid development, technical network planning and external affairs have been updated accordingly. However, one new challenge which has emerged is whether or not the framework needs to be updated to incorporate offshore development. This would be addressed over the lifetime of this IP.

Another challenge is ensuring an appropriate balance between the timely and cost efficient development of our transmission projects while also providing a clear and transparent structure to our stakeholders to facilitate opportunities for public participation in the development of our projects. Notwithstanding these challenges, the current approach implemented offers an appropriate and sustainable approach to the development of our transmission projects.

6.4 Policies and objectives

The following policies and objectives have been adopted by EirGrid in order to ensure an appropriate and sustainable approach to the development of our transmission projects.

It is the policy of EirGrid:

PDP1: To have regard to EirGrid's approach to developing the grid and any associated guidelines, consenting precedents, policies and processes, to ensure the structured, consistent development of all its grid development projects.

PDP2: To promote sustainable grid development by balancing complex and/or competing technical, economic, environmental, social and deliverability goals and priorities in decision-making.

PDP3: To continue to build staffing capacity to adequately resource onshore and offshore grid development and operation, across engineering, environmental, project management, administrative, legal and human resources

It is the objective of EirGrid:

PD01: To undertake periodic reviews, as appropriate, of the approach and associated guidelines, policies and processes, to ensure that the approach remains a suitable and sustainable structured approach to the development of grid development projects.

All of the Project Development policies and objectives detailed above are assessed against Strategic Environmental Objectives in Chapter 11 of the SEA Environmental Report, Tables 11.6 and 11.7. By its very nature, the provision of development (new grid infrastructure) could potentially have a significant negative effect on the receptors associated with the SEOs. The assessment reflects this with a combination of positive, neutral and some potentially negative outcomes (in the absence of mitigation). Chapter 12 of the SEA Environmental report details recommendations on how some aspects of the IP could be improved. Some minor amendments to the Project Development policies and objectives have been suggested (Table 12.1, 12.2) and are reproduced in Part D of this IP. These recommendations will be taken into account in the finalisation of the IP. Note all policies and objectives were screened out for the need for Appropriate Assessment (see accompanying Natura Impact Statement, Chapter 5, AA Screening).

7. Our approach to planning and consenting of projects

7.1 Introduction

Our grid developments occur within a planning and environmental context, where the focus is on matters of proper planning and sustainable development and, where public participation is of key importance, as is the environmental and ecological impact of our projects.

EirGrid's in-house Planning and Environmental team provides strategic advice to project teams regarding matters of planning and consenting of project.

Under the provisions of Section 182A of the Planning and Development Act 2001 (as amended), electricity transmission infrastructure development such as that being carried out by EirGrid generally comprises Strategic Infrastructure Development (SID). This requires an application for Statutory Approval to be made directly to An Bord Pleanála, following formal pre-application consultation with the Board.

However, the majority of projects which are pursued by EirGrid are either deemed to be 'exempted development' or are submitted to planning authorities as Section 34 planning applications.

In addition to those developments which require statutory consent, EirGrid undertakes certain development which is considered to comprise exempted development – development which does not require a prior statutory consent.

This is primarily in reference to Section 4(1)(g) of the Planning Act, which provides that the following is exempted development:

"...development consisting of the carrying out by any local authority or statutory undertaker of any works for the purpose of inspecting, repairing, renewing, altering or removing any sewers, mains, pipes, cables, overhead wires, or other apparatus, including the excavation of any street or other land for that purpose."

EirGrid has developed an internal process for the assessment of and ultimate sign-off, of certain development as exempted development. This requires, in part, a comprehensive Screening for Appropriate Assessment of the proposed development, undertaken or managed by EirGrid's Senior Ecologist. EirGrid publishes all AA Screening determinations on EirGrid's website in compliance with Regulation 42 (13) of the EC (Bird and Natural Habitat) Directive.

Where deemed necessary or appropriate, a Declaration of Exempted Development, in accordance with Section 5 of the Planning and Development Act 2000 (as amended), is obtained from the relevant Planning Authority.

7.2 Achievements since 2018

Since 2018, EirGrid has submitted various different applications for statutory approval of major grid development projects to the Strategic Infrastructure Division (SID) of An Bord Pleanála, as well as numerous Section 34 Planning Applications to local authorities. EirGrid has never been refused planning permission for any planning application and this is testament to the extensive consultation carried out during the application process by EirGrid.

Of particular note, EirGrid's Celtic Interconnector project is deemed a European Project of Common Interest (PCI). In 2021, separate applications were made for various statutory consents in Ireland onshore, Ireland offshore, UK offshore, France offshore and France onshore. These have all been consented and the project has received a Comprehensive Decision under the PCI Legislation from the competent authority for PCI in Ireland, An Bord Pleanála.

A number of these approved developments and other previously approved SID projects, were the subject of applications also to the Board for modifications to the original approved development. These are submitted in accordance with Section 146B of the Planning and Development Act (as amended). All such applications for modification of previously approved SID were confirmed by the Board.

In addition, a significant number of transmission infrastructure development projects were deemed by An Bord Pleanála not to comprise SID and thus were submitted to the relevant Planning Authority. These were all subject to Grants of Permission by the Planning Authority; in a number of cases, the Decision of a Planning Authority to Grant Permission was appealed by a third party to An Bord Pleanála, who granted permission for the development.

A considerable number of grid development projects, primarily comprising upgrading and/or replacement of existing infrastructure, were deemed exempted development – either by way of EirGrid's internal process for Screening of Exempted Development, or by way of a formal application to the relevant Planning Authority for a Declaration of Exempted Development under Section 5 of the Planning and Development Act 2000 (as amended). In particular, these 'Section 5 Declarations' provide, to a certain extent, a supporting precedent for decision-making regarding the exempted development status of certain development.

In 2023, the planning teams in EirGrid and ESB Engineering and Major Projects agreed a Memorandum of Understanding (MoU) regarding Exempted Development, thereby ensuring a consistency in approach between the two electricity developers.

7.3 Challenges

The planning and consenting of our transmission infrastructure projects will continue to be a key element of the overall grid development process undertaken by EirGrid.

The Irish planning system is one of the most open and transparent in Europe and internationally, with considerable opportunity for public participation, facilitated formally by the Competent Decision-Making Authorities (An Bord Pleanála and/or the relevant Planning Authorities), but also informally by EirGrid (see Chapters 6 and 8). This requires our planning applications to be robust, informative, accessible and easy to understand by all parties.

We must anticipate that there inevitably will continue to be opposition to our projects, by those who are directly or indirectly affected by, or have concerns regarding, our transmission infrastructure development proposals, although we will do our utmost to address such concerns during the project development process and through appropriate consultation.

In this regard, in general (i.e., not just related to transmission infrastructure development projects) there has been a marked increase in decisions of An Bord Pleanála that are the subject of Judicial Review. Planning applications must be prepared in consideration of this changing circumstance.

7.4 Policies and objectives

The following policies and objectives have been adopted by EirGrid in order to ensure an appropriate and sustainable approach to the planning and consenting of our transmission projects.

It is the policy of EirGrid:

PCP1: To comply with relevant legislation and have regard for relevant guidelines in planning and consenting of grid development projects and make provision for any policies for the provision of grid development set out in these documents. In particular, to have regard to the National Spatial Strategy, National Planning Framework, Offshore Renewable Energy Development Plans, Regional Planning Guidelines and Regional Spatial and Economic Strategies.

PCP2: To have regard to precedent arising from decisions of the Competent Authorities and of the High Court in Judicial Review of decisions, relating to the planning and consenting of grid development projects.

PCP3: To promote sustainable grid development by balancing complex and/or competing technical, economic and environmental goals and priorities in decision-making.

PCP4: To prepare and/or update internal policies and processes related to the planning and consenting of grid development projects, including the existing internal process for Screening of Exempted Development and Screening for Appropriate Assessment

The Planning and Consent policies and objectives detailed above are assessed against Strategic Environmental Objectives the SEA Environmental Report. By its very nature the provision of development (new grid infrastructure) could potentially have a significant negative effect on the receptors associated with the SEOs. There are potential positive and negative effects associated with the implementation of this objective as it may not always be possible to provide the least environmental impactful development on the balance with economic and technical goals. The assessment reflects this with a combination of positive, neutral and some potentially negative outcomes (in the absence of mitigation). The SEA Environmental report details recommendations on how some aspects of the IP could be improved. Some minor amendments to the Planning and Consents policies and objectives have been suggested (Table 12.1, 12.2) and are reproduced in Part D of this IP. These recommendations will be taken into account in the finalisation of the IP.

8. Our approach to consultation and engagement

8.1 Introduction

Early and ongoing public consultation and engagement is at the core of EirGrid decision-making. The feedback received from public consultation and engagement events is fundamental to our project decision-making, as well as helping us continually improve public participation and community engagement.

8.2 Achievements since 2018

EirGrid places social acceptance at the heart of its process development framework. Since adoption of the 2017–2022 IP, EirGrid has published a new Public Engagement Strategy (2021).

EirGrid's Public Engagement team has grown significantly since the 2017 IP. In addition to the Agricultural Liaison Officers, it now includes Community Liaison Officer and Engagement Specialists roles to engage with communities and identify key concerns which may require project mitigations (e.g., re-routing of transmission infrastructure).

In 2022, EirGrid published an enhanced Community Benefit Policy as part of its new Public Engagement Strategy. Implementation of the policy, provide direct benefits to communities who are closest to new transmission infrastructure. Funding is provided under three streams: community, sustainability and biodiversity. Community Benefit Fund will be underpinned by the objectives of the UN Sustainable Development Goals (SDGs).

The Sustainable Development Goals are a universal call to action to:

- End poverty
- Protect the planet; and
- Improve the lives and prospects of everyone, everywhere.

The 17 goals were adopted by all UN Member States in 2015, as part of the 2030 Agenda for Sustainable Development. It set out a 15-year plan to achieve the goals. All applications must align their project to one or more of the SDG's. Specific requirements for applicants under each stream will be developed in the community benefit strategy and outlined in the fund guidelines. For example, biodiversity projects funded by the scheme will align with the Community Foundation for Ireland Guidance for Community Biodiversity Action Plans.

Funds, which are proportional to the scale of the project, support local non for-profit community groups, help communities transform their area and provide the opportunity to each community to become or remain a 'sustainable energy community'. The community benefit scheme becomes live once a project receives planning permission.

In 2022, EirGrid embarked on a year-long series of citizens roadshow events to inform local communities on EirGrid's plans to future-proof the electricity grid and provide information including microgeneration, retrofitting grants and regional development issues.

The roadshows follow on from the 2021 *Shaping Our Electricity Future* consultation programme during which EirGrid sought views and inputs from all sectors of society and industry about grid development.

In 2021, EirGrid published Our Public Engagement Strategy for a Cleaner Energy Future. This strategy outlines EirGrid's public engagement strategy which is driven by renewable energy targets in the Government's Climate Action Plan. The Strategy states that:

"If we don't engage successfully with those affected by grid development plans, we won't achieve climate action targets."

The strategy is based off three different goals with associated enablers which are as follows:

Social acceptance

Work towards solutions that have landowner and public support. Enablers include the following:

- Consider the social acceptability of each solution.
- Improve participation and public engagement methods.
- Enhance community benefits.
- Deliver ambitious education and information campaigns.
- Improve our approach to landowner engagement.

Capacity

Increase our public engagement capacity and invest in our people and tools. Enablers include the following:

- Review and update our processes and outputs.
- Restructure our teams with a greater focus on public engagement.
- Increase our public engagement capacity by adding personnel.
- Carry out independent evaluation and certification of our public engagement every year.
- Expand our public engagement tool-kit.

Partnerships

Renew and revitalise our existing alliances – and develop new ones. Enablers include the following:

- Work with Government on a multi-partner campaign about climate action to support public policy.
- Support and encourage the energy sector to work together more effectively.
- Strengthen relationships with community organisations.
- Renew and develop new alliances with enabling organisations.

8.3 Challenges

There are a number of challenges that continue to face EirGrid in relation to consultation and engagement. These include ensuring that all consultation and engagement that is undertaken is done so in a transparent, meaningful and relevant way; ensuring that engagement with landowners and communities occurs as early as possible and in advance of decisions made regarding specific locations for potential projects; and ensuring all feedback received is appropriately considered in the decision-making process. In addition, identifying all relevant stakeholders in the shared marine space has become an emerging challenge.

8.4 Policies and objectives

The following policies and objectives have been adopted by EirGrid to ensure an appropriate and sustainable approach to consultation and engagement in the development of our transmission projects.

It is the policy of EirGrid:

CEP1: To consult and engage on grid developments with statutory and non-statutory stakeholders, including communities, landowners and the general public, at the earliest meaningful stage of a project's development. Consultation will be transboundary where relevant, to include governments, statutory nature conservation bodies and other agencies, including the Northern Ireland Environment Agency for cross-border matters.

CEP2: To recognise and develop the essential role that communities, landowners and other stakeholders play in grid development and to engage with different stakeholders as appropriate at all stages of a grid development project and in plan-making.

CEP3: To ensure consultation and engagement feedback is appropriately considered in decision making.

CEP4: To facilitate formal complaints and to resolve such complaints in a timely manner.

It is the objective of EirGrid:

CE01: To engage with statutory and non-statutory stakeholders in a meaningful manner as set out in the EirGrid Engagement Handbook and Toolkit and via EirGrid's Agricultural Liaison Officers and Community Liaison Officers.

CE02: To maintain and update as required EirGrid's Complaints procedure.

The consultation policies and objectives detailed above are assessed against Strategic Environmental Objectives in Chapter 11 of the SEA Environmental Report; Tables 11.10 and 11.11. Overall, these policies and objectives score positively against the Strategic Environmental Objectives of the SEA. Chapter 12 of the SEA Environmental report details recommendations on how some aspects of the draft IP could be improved. Some minor amendments to the consultation policies and objectives have been suggested (Table 12.1, 12.2) and are reproduced in Part D of this IP. These recommendations were taken into account in the finalisation of the IP. Note all policies and objectives were screened for the need for Appropriate Assessment (see accompanying Natura Impact Statement, Chapter 5, AA Screening).

9. Our approach to human beings and society

9.1 Introduction

Grid development occurs within a physical and social context – developing a 21st century transmission system will deliver social, economic and environmental benefits to every person in Ireland.

EirGrid recognises that grid infrastructure development can have an impact on the community and society in which infrastructure is hosted. It is therefore important this is viewed and appropriately analysed alongside technical, cost, environmental, social and deliverability considerations.

EirGrid also recognises that while it aims to create as little disturbance as possible to landowners, businesses and communities in the siting of new grid infrastructure this is not always possible and that a direct benefit to impacted communities is appropriate.

9.2 Achievements since 2018

EirGrid has always considered the potential impact on human beings in the context of Environmental Impact Assessment. This included consideration of the following typical issues that are identified in the EPA Advice Notes on Current Practice [2003]:

"
- Economic activity – will the development stimulate additional development and/ or reduce economic activity, and if either, what type, how much and where?
- Social consideration – will development change patterns and types of activity and land-use?
- Land use – will there be severance, loss of rights of way or amenities, conflicts, or other changes likely to alter the character and use of the surroundings?
- Health and Safety – will there be risks of death, disease, discomfort or nuisance?"

The explicit consideration of social impact, in addition to the more general consideration of human beings, is now an important element of decision making in relation to grid infrastructure development within the organisation.

Social impact typically refers to the way in which issues such as cultural identity, place and community attachment, health and overall sense of social cohesion may be changed or affected by a project.

SIA is the tool used to address a range of tangible (measurable) considerations, but also intangible issues such as local knowledge, perceptions, vulnerabilities, language and beliefs for those individuals, community or network of communities that are most likely to e affected by a project.

EirGrid has developed a methodology framework for Social Impact Assessment (SIA) to provide a consistent format in assessing the potential social impacts of grid development projects. This SIA methodology, which has had regard to the new six-step approach to developing the grid, will facilitate the early identification of social concerns and issues. This will thereby inform the identification, avoidance or minimisation of potential adverse impacts of transmission infrastructure on receiving communities.

The SIA must refer to specific findings from the community engagement and/ or public participation strands of project development outlined at Chapter 8, as well as to Environmental Impact Assessment and landscape and visual impact assessment studies outlined in Chapter 4, in order to understand issues that may affect local social and ecological assets, land use or recreational amenities.

9.3 Challenges

SIA is not a mandatory requirement for project development in Ireland and there is currently no standardised approach. Neither is SIA a well-used tool in an Irish context.

EirGrid's SIA methodology and proposed approach is based on a review of international SIA models and best practice. However being at the forefront of SIA is therefore a challenge in terms of implementing new methods and practices in an Irish context.

9.4 Policies and objectives

It is the policy of EirGrid:

HBSP01: To consider and address social impact and the impact on human beings in the development of grid development projects, as appropriate.

HBS02: To examine the social impact of grid development s on the receiving environment as appropriate and in accordance with EirGrid's methodology for Social Impact Assessment.

HBS03: To ensure that all grid development projects are screened for the requirement for a Social Impact Assessment and, where so required, that such Assessment will accompany an application for statutory consent.

HBS04: To promote and deliver EirGrid's Community Benefit Policy and Proximity Payments for certain categories of grid development projects, in accordance with established terms of reference.

HBS05: To assess and mitigate wherever possible the potential impact upon tourism in the development of grid development projects onshore and offshore, particularly on natural and unspoilt attractions with identified tourism potential.

It is the objective of EirGrid:

HBS01: To implement our new Community Benefit policy and fund high quality sustainability, biodiversity and community projects in areas affected by grid development projects. All projects are aligned with United Nations Sustainable Development Goals and administered through a Community Forum to ensure they are designed by local communities, for local communities.

The Social policies and objectives detailed above are assessed against Strategic Environmental Objectives in the SEA Environmental Report; Tables 11.12 and 11.3. The outcome of this assessment is overall very positive. Chapter 12 of the SEA Environmental report details recommendations on how some aspects of the draft IP could be improved. Some minor amendments to the Social policies and objectives have been suggested (Table 12.1, 12.2) and are reproduced in Part D of this IP. These recommendations were taken into account in the finalisation of the IP. Note all policies and objectives were screened for the need for Appropriate Assessment (see accompanying Natura Impact Statement, Chapter 5, AA Screening).

PART C

Strategic Environmental Assessment (SEA)

10. Strategic Environmental Assessment (SEA)

10.1 Strategic Environmental Assessment of Grid Implementation Plan 2023–2032

A Strategic Environmental Assessment Scoping Document was prepared by Fehily Timoney in December 2022 which outlined a summary of the key environmental issues arising as part of the implementation of this Plan and therefore recommended whether or not SEA was scoped in or out.

In order to adequately address the key environmental issues pertaining to the adoption of this plan, the SEA Scoping report used 12 different environmental themes which are outlined in Table 11.1 below.

Table 11.1: Environmental themes scoped and assessed during strategic environmental assessment of the plan

Theme	Summary of environmental issues	Scope
Population, human health and the economy	• Population and development growth will potentially influence the energy requirement within Ireland; • Settlement patterns influence the location of transmission development projects; • The construction of transmission infrastructure can cause disruption to the local community, such as noise, dust, disruption to services/utilities and traffic etc.; • Public perception of transmission development proposals; • Potential impacts to energy supply to industry services (e.g., fishing industry, tourism etc.); • Perceived risk and associated anxiety issues related to grid development; and • Potential visual effect of transmission lines, see also Section Landscape, Seascape and visual amenity landscape, Seascape and visual amenity.	Population: IN Human health: IN Socio-economic: IN
Biodiversity, flora and fauna	• Route selection and classification criteria are a key consideration in the development of the IP due to the largely linear nature of the developments associated with the IP. • The potential for effects to the marine environment – particularly with respect to noise impacts or impacts to ranging patterns of vagile species or benthic communities around sea cabling; • The potential for effects on non-designated biodiversity features, e.g., important habitats and species outside designated sites – particularly with regard to fragmentation, barriers to movement and displacement; • The potential for effects on protected areas: National and European sites (e.g., SAC, SPAs, RAMSAR), National sites (e.g., NHAs) and other Natural Heritage Sites and Conservation Interest Sites, e.g., refuge for fauna or flora, wildfowl reserves; • The requirement for ecological protection can pose restrictions to existing/future transmission development; • The potential to spread invasive species; and • Potential for biodiversity enhancement.	IN

Theme	Summary of environmental issues	Scope
Landscape, seascape and visual amenity	• Effects of transmission infrastructure on areas of designated landscape quality and scenic views etc.; • Grid development options can be constrained by the need to protect the landscape character and features; • Sensitivity of the landscape to change from transmission infrastructure; and • Visual intrusion on receptors from transmission infrastructure.	IN
Cultural heritage – archaeology and architectural	• The potential impact of the construction of transmission infrastructure on archaeological and architectural heritage, including risk of encountering UXO in the marine environment; • The potential impact on the setting of archaeological and architectural heritage due to the permanent presence of transmission infrastructure; and • Grid development options can be constrained by the need to protect the character of areas of existing archaeological and architectural resources.	IN
Geology and soils	• Potential for impacts on geological features (such as karst) or geological designations; • Potential for impacts on soil resources and offshore sediment transport; • Potential impacts to soils (land) vulnerable to erosion; and • Potential for unearthing contaminated material.	Geology: IN Soils: IN
Land use	• Potential constraints on sea fisheries, both during construction and operation of infrastructure projects associated with the IP; and • Potential constraints on other sections such as agricultural, forestry and fisheries; primarily related to construction and operation of infrastructure projects associated with the IP.	Land use: IN
Air quality and noise	• Transmission developments, particularly during the construction phase, may have a temporary negative impact on air quality and create noise pollution; and • High voltage transmission infrastructure has associated noise outputs – note there is no above ground noise associated with underground cabling.	Noise: IN Air quality: IN

Theme	Summary of environmental issues	Scope
Water	• Potential pressures and impacts on water body status from the construction of transmission projects, i.e., increased sedimentation, groundwater recharge and accidental spillages etc.	IN
Material assets and infrastructure	• Economic growth and development of infrastructure will increase the energy requirement within Ireland – particularly in the heat and transport sectors as they are electrified; • Demands for increased renewable infrastructure and connection networks; • Existing permitted developments which currently require connection on the grid or servicing; and • Effects of construction on current infrastructure such as road/ rail/waterway networks.	IN
Tourism and recreation	• Transmission development may have the potential to restrict or reduce the quality of resources important for recreation and/or tourism including angling facilities, boating activities and/or associated resources; and • Demand for tourism infrastructure and associated power loadings could interact with the tourism sector.	IN
Climate change	• The IP will contribute to the renewable energy targets, as set out in the Climate Action Plan 2021; • The location of the future transmission network (existing or planned) should consider flood risk and locations of proposed flood defence schemes; • All policies and objectives within the Electricity & Gas Networks Sector Climate Change Adaptation Plan relevant to EirGrid must be implemented; and • The potential impact of changes in climate including flooding and temperature increases should be factored into the IP.	IN
Transboundary effects	• Potential effects from developments which arise due to the implementation of the IP such as interconnectors which could include effects to Northern Ireland, England, Scotland, Wales and France.	IN

11. SEA mitigation

11.1 Introduction

Assessment of, and consultation on the policies, objectives outlined in the draft IP and assessment of individual projects that form part of this IP has resulted in mitigations to assist in the sustainable delivery of the IP. Mitigation measures arising from the SEA and the NIS (prepared to support Appropriate Assessment of the draft IP), including those requested by consultees are presented in this chapter.

11.2 SEA Environmental Report

The mitigation in relation to the policies and objectives of the draft Grid IP are outlined in Chapter 12 of the SEA Environmental Report in Tables 12.1 and 12.2 (and reproduced in this chapter). These tables outline proposed alterations to the draft Grid IP policies and objectives proposed by the SEA/AA team.

These policy mitigations were taken on board as part of the overall review of the IP in combination with comments collated from the public consultation of the IP, SEA and AA.

Table 12.1: EirGrid policies – SEA mitigation

Aspect	No.	Original	Amendment or addition (indicated by underlined text)
General	ENVP1	To uphold best environmental practice in the design and appraisal of onshore and offshore grid development, considering impacts onshore, offshore, cumulatively and across state boundaries where relevant.	None.
	ENVP2	To continually improve EirGrid's approach to the protection of the onshore and marine environment from development impacts, by applying the findings from monitoring at plan and project level to improve existing processes and fund and resource new processes where required.	None.
	ENVP3	To apply a strategic/programmatic approach to onshore and offshore grid development to optimise environmental assessment and public engagement at a regional/landscape scale. Through programmatic approaches, reduce timescales and resources and increase project delivery rate to achieve the 2030 targets of up to 80% electricity from renewable sources.	None.
	ENVP4	To require the use of sustainable urban drainage systems in all new grid developments where appropriate.	None.

Aspect	No.	Original	Amendment or addition (indicated by underlined text)
General	ENVP5	To have regard to the statutory guidelines on the Planning System and Flood Risk Management, as may be revised/updated when devising grid development projects and in the preparation of grid development strategies and plans.	None.
	ENVP6	To seek to preserve and maintain air quality in accordance with good practice and relevant legislation in the construction of grid development projects onshore and offshore.	None.
	ENVP7	To facilitate new technologies which minimise noise emissions on onshore and offshore grid development	None.
	ENVP8	To seek to preserve and maintain noise quality (including underwater noise) in accordance with good practice and relevant legislation.	None.
	ENVP9	To have regard to the objectives of the National Landscape Strategy and the Regional Seascape Character Assessment in onshore and offshore grid development projects, to protect landscapes and seascapes from grid development.	None.
	ENVP10	To ensure appropriate dust suppression during construction works.	None.
	ENVP11	To minimise impacts on surface, ground and marine water quality and support achieving objectives of the Marine Strategy Framework Directive and Water Framework Directive.	To avoid impacts on surface, ground and marine water quality and support achieving objectives of the Marine Strategy Framework Directive and Water Framework Directive.
	ENVP12	To deliver projects while ensuring natural resources in coastal and marine waters are exploited in a sustainable manner so that biodiversity is maintained or achieved and that European regional seas are clean, healthy and productive.	None.
	ENVP13	None – policy added during SEA process.	To protect the water environment, water quality and aquatic ecology in accordance with the EU Water Framework Directive, the development of its transmission projects.

Aspect	No.	Original	Amendment or addition (indicated by underlined text)
General	ENVP14	None – policy added during SEA process.	To contribute as appropriate, to the protection of existing and potential water resources and their use by humans and wildlife, including rivers, streams, wetlands, groundwater, coastal waters and associated habitats and species in accordance with the requirements and guidance in the EU Water Framework Directive 2000 (2000/60/EC), the European Union (Water Policy) Regulations 2003 (as amended), the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI No. 272 of 2009), the Groundwater Directive 2006/118/EC and the European Communities Environmental Objectives (groundwater) Regulations, 2010 (S.I. No. 9 of 2010) and other relevant EU Directives, including associated national legislation and policy guidance (including any superseding versions of same).
	ENVP15	None – policy added during SEA process.	To support the application and implementation of a catchment planning and management approach to development and conservation, including the implementation of Sustainable Drainage System techniques for new development.
	ENVP16	None – policy added during SEA process.	To develop a robust and evidence-based methodology, leveraging Geographic Information technology to quantify losses of rural field boundaries on grid projects, having regard for updates to Environmental Impact Assessment legislation.
	ENVP17	None – policy added during SEA process.	Risk assess the potential to plant certain shallower-rooted woody species over High Voltage Underground Cables, informed by engagement with the ESB and other Transmission System Operators and through use of technological innovations to identify root extents.
	ENVP18	None – policy added during SEA process.	To cooperate and knowledge share with government departments and other state bodies, to advance the preparation and implementation of government legislation and policy onshore and offshore, including on matters of renewable energy and associated grid development.

Aspect	No.	Original	Amendment or addition (indicated by underlined text)
Biodiversity	BIODP1	To protect flora, fauna and habitats and sites designated in the Habitats Directive, the Birds Directive, the Wildlife Act 1976 (as amended), the Flora Protection Order (S.I. no. 235 of 2022) and the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended).	None.
	BIODP2	To minimise the impact of grid development on existing trees and hedgerows and all semi-natural habitats.	To avoid or where unavoidable minimise the impact of grid development on existing trees and hedgerows and all semi-natural habitats.
	BIODP3	To protect and wherever possible enhance wooded, wetland and other habitats which function as wildlife corridors, in accordance with Article 10 of the EU Habitats Directive.	None.
	BIODP4	To design habitat creation, restoration and enhancement into project scopes wherever possible, in collaboration with ESBN for onshore assets, while complying with relevant technical and safety standards.	To design habitat creation, restoration and enhancement into project scopes wherever possible (except where constrained by external factors outside EirGrid's control such as third party land ownership on linear infrastructure), in collaboration with ESBN for onshore assets, while complying with relevant technical and safety standards.
	BIODP5	None – policy added during SEA process.	To optimize use of the existing six-step Framework for Grid Development for biodiversity protection and restoration, through use of best available field and desktop data including the Tailte Éireann National Land Cover and remotely sensed data to avoid sensitive features in the identification of the study area and technology (Step 3), the identification of route options (Step 4) and development of the preferred route (Step 5).
	BIODP6	None – policy added during SEA process.	To integrate appropriate Nature Inclusive Design measures, whose ecological performance has been proven, into offshore grid projects, following appropriate design risk assessment. The performance of such measures will be monitored to inform adaptive management and the results of this monitoring and details of any corrective actions will be openly shared to advance the common understanding of marine NID.

Aspect	No.	Original	Amendment or addition (indicated by underlined text)
Biodiversity	BIODP7	None – policy added during SEA process.	To share high quality biodiversity and other environmental data collected on EirGrid projects onshore and offshore, in support of the National Biodiversity Plan 2023–2030 and Irish government Open Data Strategy 2023–2027 and ensure this is readily accessible through the National Biodiversity Data Centre and open source portals (including the Irish Government data.gov.ie portal). EirGrid will also seek to make EirGrid's open data purposeful, by engaging with relevant third parties in public authorities, academia and industry to inform them of the scope of and any limitations to datasets.
	BIODP8	None – policy added during SEA process.	To develop and implement marine biodiversity policy as EirGrid develops offshore grid projects, to include considerations for Marine Protected Areas, Marine Nature Inclusive Design, monitoring of mitigation effectiveness and providing open access to high quality environmental data, in line with European and national legislation and policy.
Climate change	CLIMP1	To integrate measures to address climate change into grid development, through effective mitigation and adaptation responses, in accordance with available guidance and best practice.	None.
	CLIMP2	To support, through all activities and, in particular connection of low-carbon and renewable energy generation onshore and offshore, delivery of the Government's target of up to 80% electricity consumption generated from renewable energy sources by the year 2030.	None.
	CLIMP3	That there is no increase in flood risk as a result of grid development and to ensure any flood risk to the development is appropriately managed.	None.

Aspect	No.	Original	Amendment or addition (indicated by underlined text)
Cultural heritage	CULTP1	To conserve and protect designated and undesignated architectural assets and their settings (onshore) and archaeological heritage (onshore and offshore).	None.
	CULTP2	To protect known and unknown (potential) archaeological material in grid development, by avoidance, best practice mitigation measures and by process improvements identified from review of project level environmental monitoring reports.	None.
	CULTP3	None – policy added during SEA process.	To engage at an early stage and, iteratively, with local authority experts and the National Monuments Service to identify the relevant scope of archaeological assessments and method statements on all grid projects onshore and offshore.
Transmission	TP1	To promote and facilitate the sustainable development of a high-quality transmission grid to serve the existing and future needs of the country, in accordance with EirGrid's *Shaping Our Electricity Future* Transmission Network Analysis.	None.
	TP2	To consider all practical technology options in the development of its projects, including maximising use of the existing grid.	None.
	TP3	To continue to be proactive in the development of emerging or innovative technical solutions for the development of the transmission grid.	None.
	TP4	To effectively manage renewable surplus by utilising Demand Flexibility in order to promote and/or utilising Demand Flexibility focused renewable generation.	None.
	TP5	To ensure EirGrid and ESB Networks develop and implement an end-to-end TSO/TAO joint approach to optimise delivery of onshore and offshore grid infrastructure projects.	None.
	TP6	To promote Security of Supply in order to maximise access to generation and promote future interconnections with neighbouring countries.	None.

Aspect	No.	Original	Amendment or addition (indicated by underlined text)
Project development	PDP1	To adhere to and regularly review EirGrid's approach to developing the grid and any associated guidelines, consenting precedents, policies and processes, to ensure the structured, consistent development of all its grid development projects.	None.
	PDP2	To promote sustainable grid development by balancing complex and/or competing technical, economic, environmental, social and deliverability goals and priorities in decision-making.	None.
	PDP3	To continue to build staffing capacity to adequately resource onshore and offshore grid development and operation, across engineering, environmental, project management, administrative, legal and human resources.	None.
	PDP4	None – policy added during SEA process.	In selecting the proposed location or route of a new project, EirGrid will identify and explore all reasonable alternatives to identify the optimal solution/Best Performing Option. The selection of the location or route will be determined following a multi-criteria assessment of technical, economic, environmental, socio-economics and deliverability and will be publicly consulted upon.
	PDP5	None – policy added during SEA process.	To seek opportunities to co-locate grid projects with existing and proposed linear infrastructure where appropriate (e.g., greenways, blueways, utilities) in collaboration with other state authorities and other parties to minimise cost and social, environmental, construction and operational impacts when delivering grid projects.

Aspect	No.	Original	Amendment or addition (indicated by underlined text)
Project consenting	PCP1	To comply with relevant legislation and have regard for relevant guidelines in planning and consenting of grid development projects and make provision for any policies for the provision of grid development set out in these documents. In particular, to have regard to the National Spatial Strategy, National Planning Framework, Offshore Renewable Energy Development Plans, Regional Planning Guidelines and Regional Spatial and Economic Strategies.	To comply with relevant legislation and have regard for relevant guidelines in planning and consenting of grid development projects and make provision for any policies for the provision of grid development set out in these documents. In particular, to have regard to the National Spatial Strategy, National Planning Framework, National Marine Planning Framework, Offshore Renewable Energy Development Plans, Regional Planning Guidelines and Regional Spatial and Economic Strategies.
	PCP2	To have regard to precedent arising from decisions of the Competent Authorities and of the High Court in Judicial Review of decisions, relating to the planning and consenting of grid development projects.	
	PCP3	To promote sustainable grid development by balancing complex and/or competing technical, economic and environmental goals and priorities in decision-making.	
	PCP4	To prepare and/or update internal policies and processes related to the planning and consenting of grid development projects, including the existing internal process for Screening of Exempted Development and Screening for Appropriate Assessment.	
	PCP5	None – policy added during SEA process.	To fulfil EirGrid's role in the implementation of European legislation, policy and guidance on Accelerated permitting for renewables and associated grid infrastructure, onshore and offshore, having regard for environmental protections and eligibility criteria.

Aspect	No.	Original	Amendment or addition (indicated by underlined text)
Consultation and engagement	CEP1	To consult and engage on grid developments with statutory and non-statutory stakeholders, including communities, landowners and the general public, at the earliest meaningful stage of a project's development. Consultation will be transboundary where relevant, to include governments, statutory nature conservation bodies and other agencies, including The Northern Ireland Environment Agency for cross-border matters.	To consult and engage on grid developments with statutory and non-statutory stakeholders, including communities, landowners, fishers, aquaculture operators and the general public, at the earliest meaningful stage of a project's development. Consultation will be transboundary where relevant, to include governments, statutory nature conservation bodies and other agencies, including The Northern Ireland Environment Agency for cross-border matters.
	CEP2	To recognise and develop the essential role that communities, landowners and other stakeholders play in grid development and to engage with different stakeholders as appropriate at all stages of a grid development project and in plan-making.	To recognise and develop the essential role that communities, landowners, fishers and aquaculture operators and other stakeholders play in grid development and to engage with different stakeholders as appropriate at all stages of a grid development project and in plan-making.
	CEP3	To ensure consultation and engagement feedback is appropriately considered in decision-making.	None.
	CEP4	To facilitate formal complaints and to resolve such complaints in a timely manner.	None.

Aspect	No.	Original	Amendment or addition (indicated by underlined text)
Human beings	HBSP01	To consider and address social impact and the impact on human beings in the development of grid development projects as appropriate.	None.
	HBS02	To examine the social impact of grid development s on the receiving environment as appropriate and in accordance with EirGrid's methodology for Social Impact Assessment.	None.
	HBS03	To ensure that all grid development projects are screened for the requirement for a Social Impact Assessment and, where so required, that such Assessment will accompany an application for statutory consent.	None.
	HBS04	To promote and deliver EirGrid's Community Benefit Policy and Proximity Payments for certain categories of grid development projects, in accordance with established terms of reference.	None.
	HBS05	To assess and mitigate wherever possible the potential impact upon tourism in the development of grid development projects onshore and offshore, particularly on natural and unspoilt attractions with identified tourism potential.	None.
	HBS06	None	To assess and mitigate wherever possible the potential impact upon fisheries and aquaculture in the development of grid development projects particularly in areas of economic importance to the seafood sector.

Table 12.2: EirGrid objectives – SEA recommendations

Aspect	No.	Original	Proposed amendment, recommendation or addition (indicated by underlined text)
General	ENVO1	To ensure that grid development projects onshore and offshore follow standard approaches to environmental assessment of grid development projects including EirGrid topic specific guidelines on Electromagnetic Fields (EMF), Cultural Heritage and Ecology and international best practice.	None.
	ENVO2	To continue to prepare and/or update EirGrid evidence-based environmental guidelines, to integrate updated evidence or assess new types of development, including offshore.	None.
	ENVO3	To develop the environment space on the EirGrid website as a tool for sharing information on EirGrid's impacts on and actions for the environment.	None.
	ENVO4	To have regard to any future National Landscape and/or Seascape Character Assessment in the development of its grid development projects.	None.
	ENVO5	That all grid development proposals and, in particular, transmission substation developments, shall carry out, to an appropriate level of detail, a site-specific Flood Risk Assessment that shall demonstrate compliance with all current Guidelines, standards and best practice. The Flood Risk Assessment shall pay particular emphasis to residual flood risks, site-specific mitigation measures, flood-resilient design and construction and any necessary management measures.	None.
	ENVO6	To identify the nature of tourism in a project area; to consider the cumulative/in combination impact on tourism of a project and to consider short term and long term impacts of grid development projects on tourism as appropriate.	None.

Aspect	No.	Original	Proposed amendment, recommendation or addition (indicated by underlined text)
General	ENVO7	That development of new transmission substations will not occur on sites which are below estimated flood levels for CFRAM Zone A or Zone B, without the relevant justification test.	None.
	ENVO8	To continually improve the effectiveness of project level mitigations and fill knowledge gaps by reviewing project-level environmental monitoring reports and identifying any instances of mitigation failure.	To continually improve the effectiveness of project level mitigations and fill knowledge gaps by reviewing project-level environmental monitoring reports and identifying any instances of mitigation failure, to inform remedial actions and/ or revisions to future mitigation specifications.
	ENVO9	To continually improve the effectiveness of plan level mitigations and fill knowledge gaps by regularly (where possible annually) publishing SEA-related monitoring reports and implementing recommendations for process improvements.	None.
	ENVO10	To establish and maintain a Geographic Information System of existing and proposed EirGrid grid development projects onshore and offshore, to assist with the identification of cumulative and transboundary impacts.	To establish and maintain a Geographic Information System of existing and proposed EirGrid grid development projects onshore and offshore, to assist with the identification of cumulative and transboundary impacts, increase geospatial resources and deepen application of GI technologies to optimise delivery of EirGrid's functions and environmental objectives generally.
	ENVO11	None – new policy added during SEA process.	To insert in project environmental assessments for onshore and offshore projects, new requirements for Contractors to provide written environmental monitoring reports to the EirGrid Planning and Environmental Unit, in addition to any prescribed bodies. This will increase the flow of information between project and plan level assessments, to ensure mitigation efficacy is understood and mitigation specifications are continually improved.

Aspect	No.	Original	Proposed amendment, recommendation or addition (indicated by underlined text)
General	ENVO12	To ensure that site selection and design of new overground infrastructure onshore and offshore considers views from existing purpose-built tourism facilities, as well as views from touring routes, walking trails, scenic viewing points and greenways.	To ensure that site selection and design of new overground infrastructure onshore and offshore considers views from existing purpose-built tourism facilities, as well as views from touring routes, walking trails, scenic viewing points, blueways and greenways.
	ENVO13	None – new policy added during SEA process.	To identify the nature of fisheries and aquaculture in a project area; to consider the cumulative/in combination impact on fisheries and aquaculture of a project and to consider short term and long-term impacts of grid development projects on fisheries and aquaculture, as appropriate.
	ENVO14	None – new policy added during SEA process.	To consider the potential impact upon tourism in the development planning of transmission projects and to protect tourism resources through the appropriate and sustainable planning and design of transmission infrastructure development.
	ENVO15	None – new policy added during SEA process.	To integrate Grid IP policies into lower-tier plans and programmes and projects (so-called 'tiering' or transfer of mitigation from higher to lower levels) and monitor, report and continually improve effectiveness of implementation via the SEA monitoring process.

Aspect	No.	Original	Proposed amendment, recommendation or addition (indicated by underlined text)
Biodiversity	BIODO1	That any grid development project, either individually or in combination with other projects, that has the potential to give rise to significant effect on the integrity of any European (Natura) site(s) shall be subject to Appropriate Assessment (AA) in accordance with Article 6 of the EU Habitats Directive.	None.
	BIODO2	None – new policy added during SEA process.	Having regard to BIOD01, and applying the mitigation hierarchy, deliver No Net Loss of biodiversity, if not Net Biodiversity Gain, on all EirGrid projects (onshore and offshore), except where external factors beyond EirGrid control constrain this objective (e.g., third-party land ownership on linear infrastructure). As a last resort in such cases where third party land ownership constraints delivery of NNL or NBG, EirGrid will consider off-site habitat compensation. Such off-site compensation may be delivered by third party suppliers (e.g., not-for-profits) on third party lands, or on ESBN-owned lands, or (if and when established through appropriate governance) on lands acquired by EirGrid for biodiversity compensation. Where EirGrid concludes NNL or NBG has been achieved, this conclusion will be underpinned by objective and scientifically rigorous data. The approach may involve use of a biodiversity metric or tool, but will have regard for and keep step with guidance from Irish government, the Chartered Institute of Ecology Management, or other authoritative sources.

Aspect	No.	Original	Proposed amendment, recommendation or addition (indicated by underlined text)
Biodiversity	BIODO3	To continue the retrofitting of bird flight diverters on existing overhead lines (where the opportunity arises during line repairs) and seek to establish a citizen science reporting portal for bird strikes to better understand likely high risk lines to birds.	To continue the retrofitting of bird flight diverters on existing overhead lines (where the opportunity arises during line repairs), seek to establish a citizen science reporting portal for bird strikes to better understand likely high risk lines to birds and collaborate with ESBN, eNGOs and research institutes to continually review and improve the effectiveness of bird flight diverters.
	BIODO4	To standardize the reporting of residual biodiversity impacts (after mitigation) at a geographic frame of reference and report on trends in the course of SEA-related monitoring.	None.
	BIODO5	To establish the submission of ecological records to the National Biodiversity Data Centre as business-as-usual, by imposing as a contractual requirement at planning and where relevant operational phases of grid developments onshore and offshore.	None.
Climate change	CLIMO1	To assist towards meeting national and EU climate targets, in particular the Government's Climate Action Plan 2023 (and future plans). Specific to grid development, EirGrid will deliver it's obligations under the Governments Sectoral Climate Change Adaptation Plan (Electricity and Gas Networks) in grid development plans and projects.	None.
	CLIMO2	To mitigate the impacts of climate change through policies and processes that reduce energy consumption and energy loss/ wastage. EirGrid will meet committed targets to reduce Green House Gas Emissions under the international Science Based Targets initiative, towards which progress will be reported publicly.	None.
	CLIMO3	None – new policy added during SEA process.	To develop site-specific measures to protect critical grid infrastructure from the effects of climate change.

Aspect	No.	Original	Proposed amendment, recommendation or addition (indicated by underlined text)
Cultural heritage	CULTO1	To obtain summary archaeological monitoring reports for grid developments onshore and offshore in collaboration with ESB (where relevant) and share summary findings from the Database of Irish Excavation Reports on the EirGrid webpage.	None.
	CULTO2	None – new policy added during SEA process.	To review and update EirGrid's 2009 Code of Practice, to include offshore archaeological features in consultation with relevant experts in the Department of Housing, Local Government and Heritage.

11.2.1 References

COM (2013) 169 final; Green Paper: A 2030 framework for climate and energy policies, Accessed at https://eur-lex.europa.eu on 22/04/2016.

Department of Communications, Energy & Natural Resources (2015), Ireland's Transition to a Low Carbon Energy Future 2015–2030, Accessed at http://www.dcenr.gov.ie/energy/SiteCollectionDocuments/Energy-initiatives/Energy%20White%20Paper%20-%20Dec%202015.pdf on 26/04/2016

12. Appendix 1: List of projects as per Transmission Development Plan 2023

12.1 Projects in the Border, Midlands and West Planning Area

There are 55 projects in the Border, Midlands and West Planning Area. These projects are listed in Table C-2 below.

Table C-2 Planned projects in the Border, Midlands and West Planning Area (39 projects)

	CP No.	Project title	Type	km	
1	CP0816	North Connacht 110 kV Project	New build capacity	–	
2	CP0466	North South 400 kV Interconnector	New build capacity	137[5]	
3	CP0835	Coolnabacky – Portlaoise 110 kV Line Uprate	Uprate/Modify	8	
4	CP0839	Moy 110 kV Station – Reconfiguration and Busbar Uprate[6]	Uprate/Modify	–	
5	CP0867	Flagford – Louth 220 kV Line Refurbishment	Refurbish/Replace	110	
6	CP0905	Louth – Ratrussan 110 kV No. 1 Line Uprate	Uprate/Modify	39	
7	CP0871	Galway 110 kV Station Redevelopment Project	Uprate/Modify	–	
8	CP0919	Lanesboro 110 kV Station Redevelopment Project	Uprate/Modify	–	
9	CP1031	Flagford 220 kV Station Sprecher & Schuh CB Replacement	Refurbish/Replace	–	
10	CP1032	Cashla 220 kV Station Sprecher & Schuh CB Replacement	Refurbish/Replace	–	
11	CP1048	Power Flow Control Scheme	New build capacity	–	
12	CP1061	Shantallow 110 kV Station – Shantallow Solar Farm	New build connection	–	
13	CP0644	Bracklone 110 kV Station – DSO	New build connection	–	

5 The total length is 137 km, 103 km in Ireland and 34 km in Northern Ireland.
6 ATR completed.

Drivers			Needs					Location	Step	ATR	LED	GW3 (CA)	GW6 (PA)	Energisation
Security of supply	RES integration	Market integration	Inter-regional PF	Local constraints	Connection	Inter-connection	Asset condition							
	■			■				Mayo, Roscommon	5	■	TSO	12/09/2018	15/03/2023	30/06/2026
■	■	■	■	■		■		Meath, Cavan, Monaghan, Armagh, Tyrone	5		TSO	21/09/2016	28/03/2023	22/12/2025
■	■			■			■	Laois, Laois	5		TSO	30/05/2018	30/03/2024	30/11/2025
■	■			■			■	Mayo	6	■	TSO	30/09/2014	07/10/2015	30/11/2023
■							■	Roscommon, Leitrim, Longford, Cavan, Meath, Louth	6		TSO	20/04/2015	30/04/2020	30/11/2025
■							■	Louth, Monaghan, Cavan	6		TSO	25/05/2016	29/08/2022	30/09/2024
■	■			■			■	Galway	6	■	TSO	21/06/2017	21/12/2018	30/11/2024
	■			■				Longford	6	■	TSO	28/12/2017	30/06/2020	30/11/2029
■							■	Roscommon	6		TSO	30/06/2018	11/07/2019	20/11/2026
■							■	Galway	6		TSO	30/06/2018	11/07/2019	30/11/2026
	■			■	■			Longford	4		TSO	04/02/2021	29/09/2023	18/12/2024
	■				■			Galway	6		DEV	11/07/2019	17/12/2021	12/08/2024
■					■			Laois	6		DSO	19/03/2020	01/06/2022	01/04/2025

	CP No.	Project title	Type	km	
14	CP0841	Arva-Carrick on Shannon 110 kV Line Uprate – Refurb	Uprate/Modify	43	
15	CP0848	Castlebar – Cloon 110 kV Line Uprate-Refurb	Uprate/Modify	57.3	
16	CP1094	Buffy 110 kV Station	New build connection	–	
17	CP1060	Loughteague 110 kV Solar Farm	New build connection	–	
18	CP1073	Oweninny 3	New build connection	–	
19	CP1126	Mully Graffy Windfarm	New build connection	–	
20	CP1127	Lenalea Windfarm	New build connection	–	
21	CP1139	Sligo & Srananagh 220 kV& 110 kV Protection Upgrade	Refurbish/Replace	–	
22	CP1152	Arva and connected stations 110 kV Protection Upgrade	Refurbish/Replace	–	
23	CP1153	Oldstreet, Tynagh and Cashla 400 kV & 220 kV Protection Upgrade	Refurbish/Replace	–	
24	CP1161	Cathaleen's Fall and Connected Stations 110 kV Protection Upgrade	Refurbish/Replace	–	
25	CP1158	Clonfad Solar	New build connection	–	
26	CP1119	Cashla Flagford 220 kV Line Refurbishment	Refurbish/Replace	88	
27	CP1142	Firlough 110 kV Station (Firlough Wid Farm)	New build connection	–	
28	CP1156	Sligo 110 kV Station – Srananagh 1 & 2 Bay uprates	Uprate/Modify	–	
29	CP1199	Derryiron – Thornsberry 110 kV Circuit Uprate	Uprate/Modify	19.67	
30	CP1143	Blackwater Bog Solar 1	New build connection	–	
31	CP1000	Lanesboro – Mullingar 110 kV line LCA	Uprate/Modify	46	
32	CP1079	Binbane – Cathaleen's Fall 110 kV Circuit Thermal Capacity	Uprate/Modify	34.3	
33	CP1078	Lanesboro – Sliabh Bawn Thermal Uprate	Uprate/Modify	9.4	
34	CP0817	Flagford – Sliabh Bawn 110 kV Circuit Uprate	Uprate/Modify	21.2	
35	CP0907	Dalton 110 kV Busbar	Uprate/Modify	–	
36	CP1155	Glenree – Moy 110 kV Line Uprate	Uprate/Modify	13.86	
37	CP1023	Letterkenny Busbar Ratings Needs	New build capacity	–	

Drivers			Needs					Location	Step	ATR	LED	GW3 (CA)	GW6 (PA)	Energisation
Security of supply	RES integration	Market integration	Inter-regional PF	Local constraints	Connection	Inter-connection	Asset condition							
■	■		■	■				Cavan, Longford, Leitrim, Roscommon	6	■	TSO	21/05/2020	15/12/2021	30/11/2024
■	■			■				Mayo, Galway	5	■	TSO	16/09/2020	29/12/2023	30/11/2025
	■				■			Galway	6		DEV	10/02/2020	19/11/2020	30/03/2023
	■				■			Laois	6		DEV	03/06/2020	05/11/2021	31/03/2025
	■				■			Mayo	3		DEV	02/07/2020	30/04/2024	30/06/2026
	■				■			Donegal	4		DEV	06/08/2020	10/02/2023	28/06/2024
	■				■			Donegal	4		DEV	01/10/2020	05/10/2021	28/04/2023
■							■	Sligo	6		TSO	01/10/2020	16/07/2021	30/11/2025
■							■	Cavan	6		TSO	12/11/2020	01/09/2021	01/12/2025
■							■	Galway	6		TSO	12/11/2020	05/08/2021	30/11/2024
■							■	Donegal	6		TSO	04/12/2020	01/12/2021	30/11/2025
	■				■			Westmeath	3		DEV	19/01/2021	22/12/2022	30/06/2024
■							■	Galway, Roscommon	5		TSO	26/02/2021	30/09/2023	30/11/2025
	■				■			Mayo	3		DEV	04/02/2021	30/04/2024	30/06/2026
■	■			■				Sligo	4		TSO	18/06/2021	04/04/2022	30/11/2025
	■			■	■			Offaly	5		TSO	19/11/2021	30/09/2023	30/11/2025
	■				■			Offaly	3		DEV	06/05/2021	31/12/2023	28/03/2025
■				■				Longford, Westmeath	5	■	TSO	29/01/2021	29/12/2023	30/11/2024
■	■			■	■			Donegal	5	■	TSO	29/01/2021	30/03/2023	30/11/2023
■				■				Longford, Roscommon	5	■	TSO	18/02/2021	29/12/2023	30/11/2024
■	■			■				Roscommon	6	■	TSO	18/02/2021	02/06/2022	31/10/2024
■	■			■				Mayo	4	■	TSO	01/10/2021	30/06/2023	24/11/2026
■	■			■				Sligo, Mayo	5		TSO	15/04/2021	30/09/2023	30/06/2025
■	■			■				Donegal	4		TSO	17/06/2021	10/09/2024	30/10/2029

	CP No.	Project title	Type	km	
38	CP1170	Newbridge – Portlaoise 110 kV Partial Thermal Uprate	Uprate/Modify	19.8 +2	
39	CP1168	Cashla-Salthill 110 kV Thermal Uprate	Uprate/Modify	9.4	
40	CP1059	Shannonbridge BESS – New 220 kV Transformer Bay	New build connection	–	
41	CP1219	Coole Wind Farm	New build connection	–	
42	CP1220	Garrintaggart 110 kV Station – Pinewoods Wind Farm	New build connection	–	
43	CP1217	Philipstown 110 kV Station (Cushaling Wind Farm)	New build connection	–	
44	CP1174	Aghaleague 110 kV Station	New build connection	–	
45	CP1231	Knockdrin 110 kV Station (Yellow River Wind Farm)	New build connection	–	
46	CP1229	Lislea 110 kV Station (Drumlins Wind Farm)	New build connection	–	
47	CP1255	Castlelost FlexGen	New build connection	–	
48	CP1259	Cuilleen Power	New build connection	–	
49	CP1264	Rhode ESS	New build connection	–	
50	CP1191	Galway Area Transmission Network Needs	Uprate/Modify	13.8	
51	CP1232	Derryiron 110 kV Busbar Rating Needs	Uprate/Modify	–	
52	CP1237	Ferry View 110 kV Station	New build connection	–	
53	CP1275	Cashla – Galway 110 kV Circuit 2 Uprating (part of CP1191)	Uprate/Modify	11.3	
54	CP1276	Cashla – Galway 110 kV Circuit 3 Uprating (part of CP1191)	Uprate/Modify	11.3	
55	CP1234	Laurencetown 110 kV Station	New build connection	–	
56	CP1262	Shanonagh 110 kV Station	New build connection	–	
57	CP1272	Derryiron Temporary Bypass Project	Uprate/Modify	–	
58	CP1393	Offshore Phase 1 Project 1	New build connection	–	
59	CP0837	Bellacorrick 110 kV Station T141 Uprate	Uprate/Modify	–	

Drivers			Needs					Location	Step	ATR	LED	GW3 (CA)	GW6 (PA)	Energisation
Security of supply	RES integration	Market integration	Inter-regional PF	Local constraints	Connection	Inter-connection	Asset condition							
■			■	■				Newbridge, Portlaoise	5		TSO	05/08/2021	30/12/2023	30/11/2025
■	■		■	■				Galway	5		TSO	18/03/2021	29/12/2023	30/11/2025
■	■				■			Offaly	6		DEV	28/05/2021	12/10/2022	01/07/2024
	■				■			Westmeath	4		DEV	01/02/2022	01/11/2024	01/04/2025
	■				■			Laois	4		DEV	01/02/2022	01/09/2023	01/04/2025
	■				■			Offaly	3		DEV	03/02/2022	01/10/2023	01/07/2024
	■				■			Roscommon	3		DEV	02/03/2022	30/03/2024	31/10/2025
	■				■			Offaly	3		DEV	07/04/2022	30/09/2023	29/11/2024
	■				■			Monaghan	3		DEV	29/04/2022	22/12/2022	01/10/2024
■					■			Westmeath	3		DEV	04/05/2022	03/10/2023	01/07/2024
■					■			Roscommon	3		DEV	05/05/2022	03/10/2023	01/07/2024
■	■				■			Offaly	3		DEV	23/06/2022	31/10/2023	31/01/2025
■	■		■	■				Galway	3		TSO	21/11/2022	30/12/2025	30/11/2029
■	■		■					Galway	3		TSO	29/04/2022	29/09/2023	31/12/2025
	■					■		Offaly	3		DEV	07/07/2022	01/01/2024	02/12/2024
■	■		■	■				Westmeath	3		TSO	21/11/2022	31/12/2024	31/12/2029
■	■		■	■				Laois	3		TSO	21/11/2022	31/12/2024	31/12/2029
	■					■		Offaly	3		DEV	07/04/2022	31/10/2023	01/12/2024
	■					■		Roscommon	3		DEV	10/11/2022	29/02/2024	25/04/2025
■	■		■					Offaly	3		TSO	12/10/2022	31/03/2023	30/06/2023
	■				■			Monaghan	3		TSO	15/12/2022	31/12/2024	30/06/2027
■	■				■			Westmeath	3		TSO	10/12/2014	07/12/2018	01/06/2023

12.2 Projects in the South-West and Mid-West Planning Area

There are 38 projects in the South-West and Mid-West Planning Area. These projects are listed in Table C-3 below.

Table C-3 Planned projects in the South-West and Mid-West Planning Area (38 projects)

	CP No.	Project title	Type	km	
1	CP0622	Tarbert 220 kV Station Upgrade	Refurbish/Replace	–	
2	CP0824	Moneypoint – Oldstreet 400 kV Line Refurbishment	Refurbish/Replace	104	
3	CP0796	Knockraha Station & Installation of Additional Couplers	Uprate/Modify	–	
4	CP0624	Killonan 220 kV Station Refurbishment – Kilonan Station Works	Refurbish/Replace	–	
5	CP0933	Thurles 110 kV Station – Statcom	New build capacity	–	
6	CP0934	Ballynahulla 220–110 kV Station – Statcom	New build capacity	–	
7	CP0935	Ballyvouskill 220–110 kV Station – Statcom	New build capacity	–	
8	CP0873	Dunstown – Moneypoint 400 kV Refurbishment	Refurbish/Replace	209	
9	CP0902	Tarbert – Trien 110 kV No. 1 Line Refurbishment	Refurbish/Replace	21	
10	CP0973	Knockraha Short Circuit Rating Mitigation	Uprate/Modify	–	
11	CP0983	Point on Wave Controller for Glanagow 220 kV Station	Uprate/Modify	–	
12	CP0949	Kilbarry 110 kV GIS Station	New build connection	–	
13	CP1069	Ballinknockane Solar Farm	New build connection	–	
14	CP1062	Drombeg Solar 110 kV Station	New build connection	–	
15	CP0901	Kilbarry-Knockraha 110 kV No.2 Line Refurbishment	Refurbish/Replace	12.5	
16	CP1116	Tipperary, Cahir and Connected Stations 110 kV Protection Upgrade	Refurbish/Replace	–	
17	CP0741	Trabeg 110 kV Station – uprate 2x110 kV transformer bays and control room extension DSO	Uprate/Modify	–	
18	CP1111	Ballydine, Cahir and Connected Stations 110 kV Protection Upgrade	Refurbish/Replace	–	
19	CP1112	Limerick and Connected Stations 110 kV Protection Upgrade	Refurbish/Replace	–	
20	CP1129	Aghada BESS 02	New build connection	–	
21	CP1132	Cow Cross New 110 kV Transformer	New build capacity	–	

Drivers			Needs					Location	Step	ATR	LED	GW3 (CA)	GW6 (PA)	Energisation
Security of supply	RES integration	Market integration	Inter-regional PF	Local constraints	Connection	Inter-connection	Asset condition							
■							■	Kerry	6		DSO	29/05/2012	16/12/2014	30/11/2023
■							■	Clare, Galway	6		TSO	17/09/2014	20/06/2018	30/11/2024
■				■				Cork	6	■	TSO	21/09/2016	30/09/2016	30/11/2025
■							■	Limerick	6		TSO	30/09/2011	01/04/2019	16/11/2027
■	■			■				Tipperary	6	■	TSO	22/10/2015	19/10/2020	30/11/2023
■	■			■				Kerry	6		TSO	22/10/2015	04/07/2019	29/09/2023
■	■			■				Cork	6	■	TSO	22/10/2015	04/07/2019	31/08/2023
■							■	Kildare, Laois, Tipperary, Clare	6		TSO	20/06/2014	05/12/2019	30/11/2025
■							■	Kerry	6		TSO	15/03/2016	27/09/2017	30/11/2024
■							■	Cork	6		TSO	03/11/2016	21/06/2019	03/11/2025
■				■				Cork	6		TSO	04/08/2016	23/05/2017	30/11/2023
■					■			Cork	6		DSO	14/02/2017	04/03/2021	30/11/2024
	■				■			Limerick	6		DEV	16/05/2019	24/12/2020	01/10/2024
	■				■			Kerry	6		DEV	28/06/2019	17/12/2020	31/07/2024
■							■	Cork, Cork	5		TSO	13/05/2020	03/10/2022	30/11/2024
■							■	Tipperary	6		TSO	13/05/2020	14/07/2021	30/05/2024
■					■			Cork	3		DSO	03/06/2020	29/04/2021	01/05/2025
■							■	Tipperary	6		TSO	21/05/2020	18/07/2021	30/11/2024
■							■	Limerick	4		TSO	21/05/2020	29/09/2023	31/12/2025
■	■				■			Cork	6		DEV	05/11/2020	17/12/2021	31/08/2023
■			■		■			Cork	6		DSO	02/09/2020	07/10/2021	28/08/2023

	CP No.	Project title	Type	km	
22	CP1160	Coolroe, Inniscarra & Connected Stations Protection Upgrade	Refurbish/Replace	–	
23	CP1164	West Cork 110 kV Protection Upgrade	Refurbish/Replace	–	
24	CP1207	Lisheen – Thurles 110 kV Protection Upgrade	Refurbish/Replace	–	
25	CP1128	Ballynabrannagh 100 kV Station (Moonatooreen Solar)	New build connection	–	
26	CP0917	Prospect – Tarbert 220 kV Cable Replacement Project	Refurbish/Replace	2.48	
27	CP1211	Bandon Dunmanway 110 kV Circuit Thermal Capacity	Uprate/Modify	25.9	
28	CP1212	Bandon Raffeen 110 kV Circuit Thermal Capacity	Uprate/Modify	27.2	
29	CP1224	Lysaghtstown 110 kV Station	New build connection	–	
30	CP1215	Knockraha station Celtic IC Non-contested Works	New build connection	–	
31	CP1209	Brown Boveri Circuit Breaker Replacements	Refurbish/Replace	–	
32	CP1236	Timoney 110 kV Station	New build connection	–	
33	CP1246	Coomnaclohy 110 kV Station (Knocknamork Wind and Solar Park)	New build connection	–	
34	CP1320	Barrymore Cahir Knockraha 110 kV Line Uprate	Uprate/Modify	63.5	
35	CP1245	Castletreasure 110 kV Station	New build connection	–	
36	CP1222	Knockraha 220 kV Transformer Replacement	Refurbish/Replace	–	
37	CP1247	New Ballyvouskill 220–110 kV Transformer	New build capacity	–	
38	CP1240	Coumaclovane Solar Extension	New build connection	–	

	Drivers			Needs					Location	Step	ATR	LED	GW3 (CA)	GW6 (PA)	Energisation
	Security of supply	RES integration	Market integration	Inter-regional PF	Local constraints	Connection	Inter-connection	Asset condition							
	■							■	Cork	6		TSO	04/12/2020	04/11/2021	30/11/2024
	■							■	Cork	6		TSO	04/02/2021	03/02/2022	30/11/2024
	■							■	Tipperary	5		TSO	04/11/2021	25/10/2022	30/11/2023
		■				■			Cork	2		DEV	04/11/2021	30/04/2024	30/06/2025
	■							■	Kerry	4		TSO	16/06/2021	29/09/2023	28/11/2025
	■	■	■	■					Cork	3		TSO	21/01/2022	30/09/2024	31/12/2026
	■	■	■	■					Cork	3		TSO	28/01/2022	31/12/2024	31/12/2027
		■				■			Cork	3		TSO	03/02/2022	30/01/2023	30/11/2023
	■	■	■			■	■		Cork	3		TSO	23/02/2022	04/07/2023	31/12/2026
	■							■	Cork	3		TSO	31/03/2022	22/12/2023	01/12/2028
		■				■			Tipperary	3		DEV	07/07/2022	23/11/2023	19/11/2024
		■				■			Cork	3		DEV	07/07/2022	28/02/2024	01/12/2024
	■			■	■		■		Cork/Tipperary	3		TSO	31/07/2022	31/12/2024	01/11/2028
		■				■			Cork	3		DEV	09/09/2022	29/03/2024	28/11/2025
	■							■	Cork	3		TSO	19/01/2022	15/12/2022	10/10/2025
	■	■		■		■			Cork	3		TSO	10/05/2022	24/07/2023	01/12/2025
		■				■			Kerry	3		DEV	31/08/2022	31/05/2023	31/10/2023

12.3 Projects in the South-East, Mid-East and Dublin Planning Area

There are 96 projects in the South-East, Mid-East and Dublin Planning Area. These projects are listed in Table C-4 below.

Table C-4 Planned projects in the South-East, Mid-East and Dublin Planning Area (33 projects)

	CP No.	Project title	Type	km	
1	CP0668	Corduff – Ryebrook 110 kV Line Uprate	Uprate/Modify	14	
2	CP0646	Finglas 110 kV Station Redevelopment	Refurbish/Replace	–	
3	CP0580	Carrickmines 220 kV GIS Development	New build capacity	–	
4	CP0792	Finglas 220 kV Reconfiguration Project	Uprate/Modify	–	
5	CP0585	Laois – Kilkenny (Coolnabacky) 400 kV Station – new station and associated lines and station works	New build capacity	30+ 22[7]	
6	CP0825	Oldstreet – Woodland 400 kV Line Refurbishment	Refurbish/Replace	126	
7	CP0692	Inchicore 220 kV GIS Station Upgrade	Uprate/Modify	–	
8	CP0869	Maynooth – Woodland 220 kV Line Uprate	Uprate/Modify	22	
9	CP0872	West Dublin New 220–220 kV Station (Castlebagot 220 kV Station)	New build connection	–	
10	CP0808	Maynooth 220 kV Station Reconfiguration	Uprate/Modify	–	
11	CP0984	Belcamp – Shellybanks 220 kV New Cable	New build capacity	10	
12	CP0968	Dunstown 400 kV Series Capacitor	New build capacity	–	
13	CP0823	Maynooth – Turlough Hill 220 kV Line Refurbishment	Refurbish/Replace	53	
14	CP0866	Great Island – Kellis 220 kV Line Refurbishment	Refurbish/Replace	70	
15	CP0967	Moneypoint 400 kV Series Capacitor[8]	New build capacity	–	
16	CP0970	Cross-Shannon 400 kV Cable[9]	New build capacity	6	
17	CP0969	Oldstreet-Woodland 400 kV Series Compensation[10]	New build capacity	–	

7 30 km is the length of the proposed new 110 kV circuit between the proposed new Coolnabacky 400/ 110 kV station near Portlaoise and the proposed new 110 kV station at Ballyragget. 22 km is the length of the proposed 110 kV uprate to the existing Ballyragget – Kilkenny line which is currently operated at 38 kV.
8 This project is located in the South-West and Mid-West. It is included here as it is part of the Regional Solution.
9 This project is located in the South-West and Mid-West. It is included here as it is part of the Regional Solution.
10 This project is located in the Border, Midlands and West. It is included here as it is part of the Regional Solution.

Drivers			Needs					Location	Step	ATR	LED	GW3 (CA)	GW6 (PA)	Energisation
Security of supply	RES integration	Market integration	Inter-regional PF	Local constraints	Connection	Inter-connection	Asset condition							
■				■				Dublin, Kildare	6		TSO	29/04/2011	10/05/2013	30/11/2023
■				■			■	Dublin	6		TSO	28/08/2009	24/08/2012	01/12/2023
■				■			■	Dublin	6		TSO	22/03/2012	14/02/2012	01/12/2023
■				■			■	Dublin	6		TSO	22/04/2015	11/03/2018	17/11/2023
■				■				Laois, Kilkenny	6		TSO	16/04/2008	17/06/2016	30/06/2025
■							■	Galway, Tipperary, Offaly, Kildare, Meath	6		TSO	25/03/2013	19/03/2015	29/12/2023
■				■			■	Dublin	6		TSO	21/09/2016	20/03/2019	30/11/2026
■				■			■	Kildare, Dublin	6		TSO	15/08/2019	17/12/2020	30/11/2024
■				■	■			Dublin	6		TSO	07/07/2014	17/05/2017	31/10/2023
■				■			■	Kildare	5		TSO	16/03/2021	29/12/2023	30/11/2027
■				■				Dublin	6		TSO	01/07/2016	15/07/2020	31/07/2024
■	■		■	■				Kildare	5	■	TSO	15/06/2016	13/06/2023	31/12/2025
■							■	Kildare, Wicklow	5		TSO	30/06/2017	29/12/2023	01/11/2026
■							■	Wexford, Carlow	5		TSO	16/11/2022	30/06/2025	30/11/2029
■	■		■	■				Clare	4	■	TSO	31/08/2015	01/12/2023	31/12/2025
■	■		■	■				Clare, Kerry	4	■	TSO	21/09/2016	28/02/2023	30/11/2025
■	■		■	■				Galway	4	■	TSO	15/06/2016	01/12/2023	31/12/2025

	CP No.	Project title	Type	km	
18	CP1020	Blundelstown 110 kV Station (South Meath Solar Farm)	New build connection	–	
19	CP1022	Maynooth – Turlough Hill PLC Replacement	Refurbish/Replace	53	
20	CP1041	Timahoe North Solar Farm	New build connection	–	
21	CP1052	Knocknamona Wind Farm	New build connection	–	
22	CP1055	Harristown Solar Farm	New build connection	–	
23	CP0799	Louth 220 kV Station Refurbishment	Uprate/Modify	–	
24	CP1029	Capital Project 1029	New build connection	–	
25	CP0693	Baroda 110 kV Station – 2 x 110 kV transformer bays DSO	Uprate/Modify	–	
26	CP1068	Tullabeg Solar 110 kV Station	New build connection	–	
27	CP1064	Finglas Pantograph Replacement Project	Refurbish/Replace	–	
28	CP1090	Rathmullan 110 kV Station	New build connection	–	
29	CP1088	Greenlink Interconnector	New build connection	–	
30	CP1117	Irishtown FlexGen – BESS	New build connection	–	
31	CP1115	Drybridge and Connected Stations 110 kV Protection Upgrade	Refurbish/Replace	–	
32	CP1108	Dunstown Station 400 – 220 kV Protection Upgrade	Refurbish/Replace	–	
33	CP1105	Poolbeg BESS	New build connection	–	
34	CP1110	Woodland Station 400 – 220 kV Protection Upgrade	Uprate/Modify	–	
35	CP1103	Corduff FlexGen	New build connection	–	
36	CP1113	Corduff 220 kV Station Deep Works	New build capacity	–	
37	CP0749	Oriel Offshore Windfarm	New build connection	–	
38	CP1092	New 400 kV Strategic Spare Transformer	New build capacity	–	
39	CP1102	Grangecastle South	New build connection	–	
40	CP1109	Gorman and Connected Stations 220 – 110 kV Protection Upgrade	Refurbish/Replace	–	
41	CP1114	Platin and Connected Stations 220 – 110 kV Protection Upgrade	Refurbish/Replace	–	
42	CP1136	Deenes 110 kV Station – Gaskinstown Solar Farm	New build connection	–	
43	CP1137	Carlow, Kellis 110 kV Protection Upgrade	Refurbish/Replace	–	
44	CP1140	Athy, Carlow and Connected Stations 110 kV Protection Upgrade	Refurbish/Replace	–	

Drivers			Needs					Location	Step	ATR	LED	GW3 (CA)	GW6 (PA)	Energisation
Security of supply	RES integration	Market integration	Inter-regional PF	Local constraints	Connection	Inter-connection	Asset condition							
	■				■			Meath	6		DEV	26/01/2018	11/09/2020	04/05/2023
■							■	Kildare, Wicklow	6		TSO	22/06/2018	06/12/2019	29/12/2023
	■				■			Kildare	3		DEV	06/11/2018	21/10/2021	24/04/2024
	■				■			Waterford	3		DEV	22/10/2018	17/12/2020	18/12/2023
	■				■			Meath	6		DEV	20/12/2018	19/11/2020	01/12/2025
■				■			■	Louth	6		TSO	25/09/2013	12/03/2020	28/02/2029
■					■			Kildare	6		DEV	15/05/2019	31/10/2019	27/01/2023
■					■			Kildare	4		DSO	14/06/2019	10/01/2020	30/03/2025
	■				■			Wexford	6		DEV	05/09/2019	01/04/2021	23/10/2023
■							■	Dublin	6		TSO	20/12/2019	12/11/2020	02/02/2024
■					■			Meath	6		DEV	27/11/2020	18/06/2021	02/07/2023
■	■	■	■		■	■		Wexford	6		DEV	20/02/2020	22/06/2022	09/04/2024
■					■			Dublin	6		DEV	25/06/2020	22/04/2022	31/08/2023
■							■	Louth	6		TSO	13/05/2020	16/04/2021	30/11/2023
■							■	Kildare	6		TSO	18/05/2020	19/03/2021	30/11/2023
■	■				■			Dublin	3		DEV	16/04/2020	22/04/2022	29/06/2023
■							■	Meath	6		TSO	18/05/2020	19/03/2021	30/11/2023
■					■			Dublin	3		DEV	02/04/2020	26/07/2022	31/10/2023
■				■	■			Dublin	6		TSO	17/08/2020	02/06/2021	30/04/2024
	■				■			Louth	4		DEV	27/03/2020	31/12/2024	30/06/2027
■			■	■	■			Kildare	6		TSO	29/01/2020	15/12/2022	27/06/2025
■					■			Dublin	3		DEV	13/05/2020	08/10/2021	24/02/2023
■							■	Meath	6		TSO	13/05/2020	25/06/2021	30/11/2023
■							■	Meath	6		TSO	13/05/2020	18/08/2021	30/11/2023
■					■			Meath	4		DEV	19/11/2020	14/12/2022	07/05/2024
■							■	Carlow	6		TSO	01/10/2020	01/09/2021	30/11/2023
■							■	Carlow	6		TSO	01/10/2020	16/07/2021	30/11/2023

	CP No.	Project title	Type	km	
45	CP1141	Kellis Station 220 & 110 kV Protection Upgrade	Refurbish/Replace	–	
46	CP1154	Belcamp Land Acquisition	Other	–	
47	CP1159	Cullenagh and Connected Stations Protection Upgrade	Refurbish/Replace	–	
48	CP1145	Rathnaskilloge Solar Farm	New build connection	–	
49	CP1162	Irishtown, Shellybanks and connected Stations 220 kV Protection Upgrade	Refurbish/Replace	–	
50	CP1173	Glencloosagh Phase 1 – Rotating Stabiliser	Uprate/Modify	–	
51	CP1190	Poolbeg 220 kV Station	New build connection	–	
52	CP1175	Kishoge 110 kV Station	New build connection	–	
53	CP1188	Kilcarbery	New build connection	–	
54	CP1201	Bogtown 110 kV Station	New build connection	–	
55	CP1163	Butlerstown, Killoteran and Waterford 110 kV Protection Upgrade	Refurbish/Replace	–	
56	CP1194	Woodland 400 kV Station Redevelopment	Uprate/Modify	–	
57	CP1122	Physical Security of Transmission Stations – Dublin Region	Other	–	
58	CP0966	Kildare Meath Grid Upgrade	New build capacity	50	
59	CP1146	Carrickmines – Poolbeg 220 kV Cable Replacement	Refurbish/Replace	20	
60	CP1157	Inchicore – Poolbeg #1 220 kV Cable Replacement	Refurbish/Replace	18	
61	CP1150	Inchicore – Poolbeg #2 220 kV Cable Replacement	Refurbish/Replace	16	
62	CP1045	Finglas Land Acquisition	Other	–	
63	CP1213	Belcamp 220 kV Busbar Extension	Uprate/Modify	–	
64	CP1172	Crane – Wexford 110 kV Circuit Thermal Capacity	Uprate/Modify	22.8	
65	CP1166	Gorman – Platin 110 kV line uprate	Uprate/Modify	19.4	
66	CP1167	Drybridge – Oldbridge – Platin 110 kV Line Uprate	Uprate/Modify	5.3	
67	CP1181	Corduff Platin 110 kV Line Conflict	Other	–	
68	CP1144	Kinnegad 110 kV station, Derryiron 110 kV Bay Conductor Uprate	Uprate/Modify	–	
69	CP1216	Poolbeg – North Wall 220 kV Cable Replacement	Refurbish/Replace	4.6	
70	CP1183	Mooretown 220 kV Station	New build connection	–	

Drivers			Needs					Location	Step	ATR	LED	GW3 (CA)	GW6 (PA)	Energisation
Security of supply	RES integration	Market integration	Inter-regional PF	Local constraints	Connection	Inter-connection	Asset condition							
■							■	Carlow	6		TSO	01/10/2020	01/09/2021	30/11/2024
■								Dublin	4		TSO	19/11/2020	29/09/2023	
■							■	Waterford	6		TSO	04/12/2020	04/11/2021	30/11/2025
■				■			■	Waterford	3		DEV	07/01/2021	28/11/2022	29/09/2023
						■		Dublin	6		TAO	04/02/2021	04/11/2021	30/11/2026
								Kerry	3		TAO	06/05/2021	31/10/2023	30/07/2025
				■				Dublin	3		TSO	16/12/2021	27/09/2024	20/07/2027
				■				Dublin	6		DEV	09/08/2021	08/05/2023	26/06/2024
				■				Dublin	6		DEV	08/07/2021	15/02/2023	01/10/2024
■				■			■	Offaly	3		DEV	07/10/2021	10/11/2022	11/10/2023
						■		Waterford	6		TSO	04/02/2021	04/11/2021	30/11/2024
								Meath	3		TSO	21/03/2022	04/12/2023	30/11/2028
								Dublin	5		TSO	01/09/2020	29/12/2023	30/12/2025
■	■		■				■	Meath, Kildare, Dublin	4		TSO	24/03/2021	26/04/2024	24/09/2028
						■		Dublin	3		TSO	16/12/2021	18/12/2025	20/06/2029
						■		Dublin	3		TSO	20/12/2021	18/12/2025	31/12/2029
						■		Dublin	3		TSO	16/12/2021	18/12/2025	28/09/2029
								Finglas	3		TSO	30/06/2021		
				■				Belcamp	3		TSO	15/12/2021	07/12/2023	17/09/2027
■		■	■				■	Wexford	5		TSO	17/06/2021	30/09/2023	30/11/2025
		■	■					Rathmullan, Donore Road Drogheda	5		TSO	18/03/2021	30/09/2023	29/11/2024
				■				Louth	5		TSO	18/03/2021	30/09/2023	29/11/2024
								Dublin, Meath	6		TSO	30/08/2021	06/05/2022	30/06/2023
								Meath	6		TSO	22/01/2021	04/11/2021	29/11/2025
						■		Dublin	3		TSO	31/05/2022	19/09/2024	01/12/2028
				■				Dublin	3		DEV	06/04/2022	28/04/2023	01/12/2025

	CP No.	Project title	Type	km	
71	CP1235	Louth – Woodland 220 kV Uprate	Uprate/Modify	61.2	
72	CP1256	Greener Ideas Profile Park	New build connection	–	
73	CP1248	Harlockstown Solar (Gallanstown Ext)	New build connection	–	
74	CP1249	Porterstown Battery Phase2	New build connection	–	
75	CP1021	East Meath – North Dublin Reinforcement	New build capacity	45	
76	CP1230	Darndale Phase 2 – 3 110 kV customer Connections in Darndale 110 kV Station	New build connection	–	
77	CP1100	Finglas – North Wall Cable Replacement	Refurbish/Replace	11.9	
78	CP1265	Corkagh 110 kV Station Phase 2	New build connection	–	
79	CP1243	Blundelstown 110 kV Station – 2 New DSO Transformer Bays	New build connection	–	
80	CP1001	Corduff – Finglas 1 & 2 220 kV Line Refurbishment	Refurbish/Replace	3.7	
81	CP1225	Finglas Corduff 220 kV Protection Upgrade	Refurbish/Replace	–	
82	CP1244	North Arklow Solar Plus Storage	New build connection	–	
83	CP1200	Carrickmines Area 220 kV Cable Ducting	New build capacity	2.5	
84	CP1241	Belcamp BSP Transfer	Other	–	
85	CP1260	Tracystown Solar	New build connection	–	
86	CP1261	Grahormick Solar	New build connection	–	
87	CP1267	Arklow 220 kV – DSO Ballymanus Wind Farm	New build connection	–	
88	CP1268	Dunfirth 110 kV – DSO Dysart PV	New build connection	–	
89	CP1269	Lodgewood 220 kV – DSO The Dell SF	New build connection	–	
90	CP1197	Dunstown Asset Replacements	Refurbish/Replace	–	
91	CP1242	Great Island 220–110 kV Transformer Upgrades	Uprate/Modify	–	
92	CP1277	Customer 110 kV Line Diversion	Uprate/Modify	10	
93	CP1394	Codling Wind Park	New build connection	–	
94	CP1396	Arklow Bank Wind Park	New build connection	–	
95	CP1397	North Irish Sea Array	New build connection	–	
96	CP1398	Dublin Array	New build connection	–	

Drivers			Needs					Location	Step	ATR	LED	GW3 (CA)	GW6 (PA)	Energisation
Security of supply	RES integration	Market integration	Inter-regional PF	Local constraints	Connection	Inter-connection	Asset condition							
■		■			■		■	Louth, Meath	3		TSO	28/04/2022	02/06/2025	01/12/2029
				■				Dublin	3		DEV	05/05/2022	03/10/2023	01/07/2024
■				■			■	Meath	3		DEV	01/06/2022	24/02/2023	28/07/2023
■	■			■			■	Kildare	3		DEV	01/06/2022	03/07/2023	24/03/2025
	■	■						Meath, Dublin	3		TSO	07/06/2022	30/06/2025	31/12/2029
				■				Dublin	6		TSO	17/06/2022	19/12/2022	22/12/2023
			■			■		Dublin	3		TSO	28/06/2022	19/12/2024	30/06/2029
				■				Dublin	3		TSO	26/07/2022	31/10/2023	04/06/2024
				■				Meath	3		DSO	14/09/2022	03/07/2023	30/09/2025
			■					Dublin	3		TSO	10/11/2022	28/06/2024	01/12/2027
						■		Dublin	3		TSO	03/02/2022	13/12/2022	30/11/2026
■	■			■			■	Wicklow	3		DEV	06/10/2022	11/09/2023	30/09/2024
■		■		■			■	Dublin	6		TSO	30/09/2021	20/12/2022	31/03/2025
				■				Dublin	3		DSO	01/09/2022	20/03/2023	01/04/2025
■				■			■	Wexford	3		DEV	30/05/2022	28/02/2024	30/06/2025
■				■			■	Wexford	3		DEV	30/05/2022	01/02/2024	30/07/2025
■				■			■	Wicklow	3		DSO	30/09/2022	30/10/2023	01/04/2025
■				■			■	Kildare	3		DEV	30/09/2022	30/10/2023	01/07/2024
■				■			■	Wexford	3		DEV	01/09/2022	30/10/2023	31/10/2024
■							■	Meath, Kildare	3		TSO	31/12/2021	31/10/2023	01/12/2028
■	■						■	Wexford	3		TSO	07/12/2022	31/03/2024	01/11/2028
		■			■			Kildare	3		TAO	30/11/2022	29/03/2024	28/11/2025
	■				■			Wicklow	3		TSO	15/12/2022	31/12/2024	30/06/2027
	■				■			Wicklow	3		TSO	15/12/2022	31/12/2024	30/06/2027
	■				■			Dublin	3		TSO	15/12/2022	31/12/2024	30/06/2027
	■				■			Wicklow, Dublin	3		TSO	15/12/2022	31/12/2024	30/06/2027

12.4 National programmes

There are nine national programmes each with elements at various locations around the country. These are listed in Table C-5 below.

Table C-5 Planned national projects at various locations (9 projects)

	CP No.	Project title	Type	km	
1	CP0857	Paint Towers Nationwide	Refurbish/Replace	–	
2	CP1096	Transformer Protection Upgrade, 6 Stations	Refurbish/Replace	–	
3	CP1186	Agannygal, Ennis and connected stations 110 kV Protection Upgrade	Refurbish/Replace		
4	CP1227	Cashla and connected stations 220 kV & 110 kV Protection Upgrade	Refurbish/Replace		
5	CP1228	Shannonbridge and connected stations 220 kV & 110 kV Protection Upgrade	Refurbish/Replace		
6	CP1149	Newbridge – Cushaling 110 kV Line, Stations Bay Conductors and Lead-in Conductor Uprate	Uprate/Modify		
7	CP1123	Physical Security of Transmission Stations – South Region	Other		
8	CP1124	Physical Security of Transmission Stations – North Region	Other		
9	CP1125	Physical Security of Transmission Stations – Central Region	Other		

	Drivers			Needs					Location	Step	ATR	LED	GW3 (CA)	GW6 (PA)	Energisation
	Security of supply	RES integration	Market integration	Inter-regional PF	Local constraints	Connection	Inter-connection	Asset condition							
	■							■	Dublin, Wicklow, Louth, Cork, Kildare, Meath, Kilkenny, Offaly, Carlow	6			17/02/2014	24/11/2014	31/10/2026
	■							■	Sligo, Mayo, Leitrim, Tipperary, Galway	6			10/02/2020	02/10/2020	30/11/2023
	■							■	Offaly. Galway. Clare	5			05/08/2021	08/09/2022	31/12/2025
	■							■	Galway, Clare	3			02/02/2022	21/09/2022	30/11/2026
	■							■	Offaly, Roscommon, Tipperary	3			03/02/2022	26/09/2022	30/11/2026
	■	■			■	■			Kildare, Offaly	6			22/01/2021	04/11/2021	30/11/2023
	■								Wicklow, Wexford, Cork, Tipperary, Waterford	5			07/05/2021	29/12/2023	30/12/2025
	■								Louth, Meath, Cavan, Roscommon, Monaghan	5			03/02/2022	29/12/2023	30/12/2025
	■								Kildare, Carlow, Cork, Kilkenny, Limerick, Wicklow	5		TSO	14/07/2021	29/12/2023	30/12/2025

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