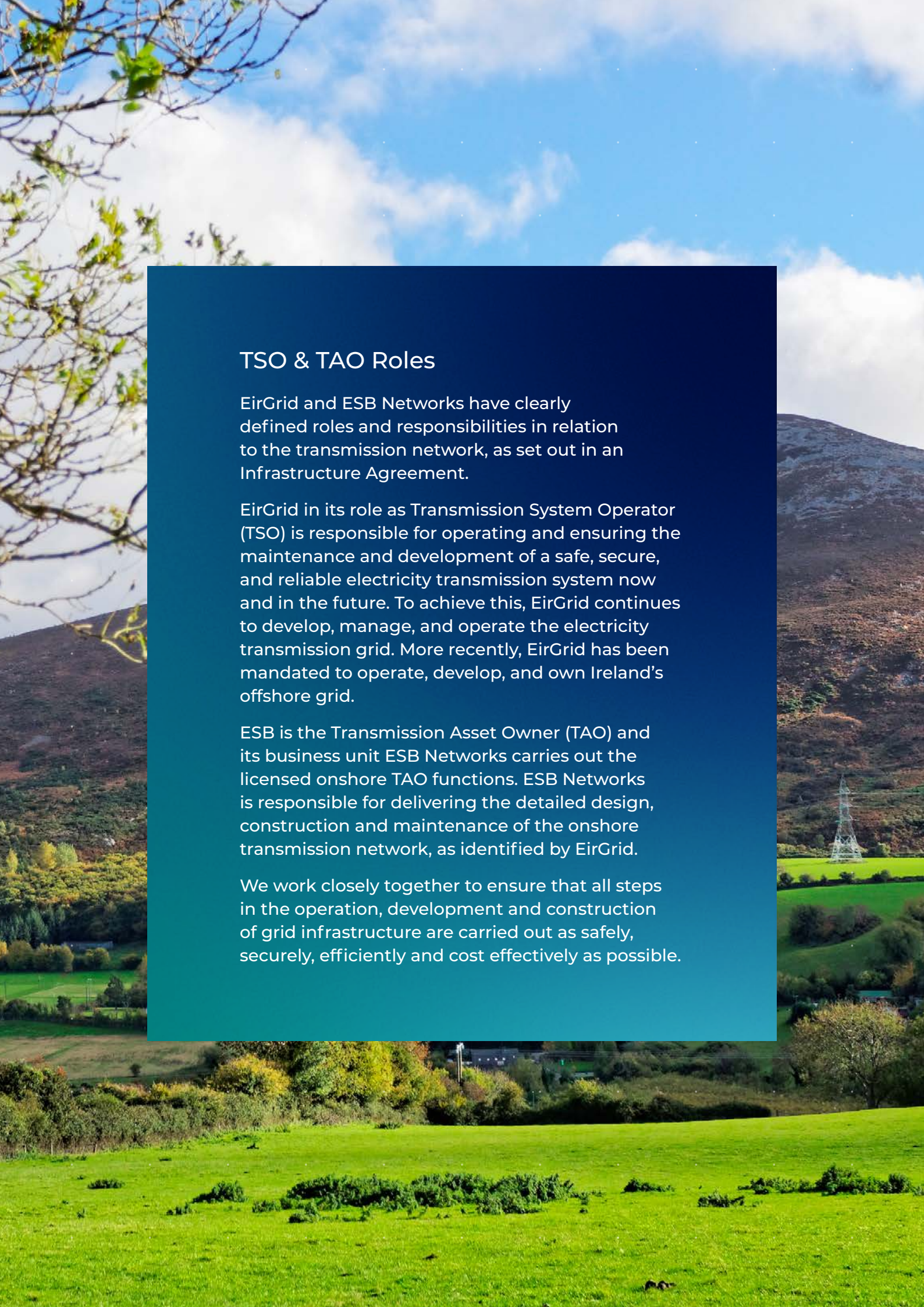
Investment Planning and Delivery Report **2024**

EirGrid

ESB NETWORKS

Contents



TSO & TAO Roles

EirGrid and ESB Networks have clearly defined roles and responsibilities in relation to the transmission network, as set out in an Infrastructure Agreement.

EirGrid in its role as Transmission System Operator (TSO) is responsible for operating and ensuring the maintenance and development of a safe, secure, and reliable electricity transmission system now and in the future. To achieve this, EirGrid continues to develop, manage, and operate the electricity transmission grid. More recently, EirGrid has been mandated to operate, develop, and own Ireland's offshore grid.

ESB is the Transmission Asset Owner (TAO) and its business unit ESB Networks carries out the licensed onshore TAO functions. ESB Networks is responsible for delivering the detailed design, construction and maintenance of the onshore transmission network, as identified by EirGrid.

We work closely together to ensure that all steps in the operation, development and construction of grid infrastructure are carried out as safely, securely, efficiently and cost effectively as possible.

1. Introduction

The Investment Planning and Delivery Report provides stakeholders with an overview of EirGrid and ESB Networks' annual infrastructure development and delivery progress across the portfolio of transmission projects.

EirGrid and ESB Networks share the Commission for Regulation of Utilities' (CRU's) strategic objectives for the PR5 period (2021-2025) and continue to develop our transmission infrastructure plans to deliver on the ambition of:

- Facilitating a secure low carbon future;
- Resolving local security of supply;
- Increasing efficiency and protecting customers.

This Investment Planning and Delivery (IPD) 2024 report will:

- Provide stakeholders with an overview of the unconstrained transmission Network Delivery Portfolio (NDP) as at the end of calendar year 2024, the fourth year of the Price Review Five (PR5) period; and
- Advise stakeholders on how the development and delivery of grid infrastructure is progressing relative to expectations.

The IPD 2024 report includes an overview of the infrastructure development highlights and benefits delivered in 2024 (Section 2), and the progress in each of the six steps relative to previous years and with reference to what was expected to be delivered (Sections 5-10). The report contains information on how we prioritise projects (Section 11), Climate Change Adaptation activities (section 12) and an overview of stakeholder engagement activities (Section 13).

This report forms part of the enhanced PR5 reporting and monitoring requirements outlined in CRU/20/154. We recommend that it is read in conjunction with our Annual Electricity Transmission Performance Report 2024, which contains an overview as to how the transmission system was operated, developed, and maintained in 2024 by EirGrid and ESB Networks. We look forward to engaging with our stakeholders further as we continue to deliver on our ambitious 2030 targets.

1.1 Strategy for Planning and Delivering the Grid

EirGrid Group's Strategy[1] is shaped by climate change and the need for a secure, reliable, and sustainable transition of the electricity sector to low-carbon, renewable energy. The Shaping Our Electricity Future (SOEF)[2] initiative takes a whole of system approach and considers transmission network development, public and stakeholder engagement, evolution of system operations, and appropriately incentivising electricity markets. The updated Shaping Our Electricity Future (SOEF) Version 1.1[3] captures the changes to electricity policy set out in the Government's Climate Action Plan 2024[4]. Building on the progress outlined in Climate Action Plan 2024, the 2025[5] Plan places greater emphasis on delivery and measurable outcomes. Notably, electricity sector emissions fell by 17% in early 2024, with wind energy now supplying nearly 40% of national demand. EirGrid continues to play a central role in enabling this transition through strategic grid development, renewable integration, and support for community microgeneration—contributing directly to Ireland's climate and energy targets.

The updated Shaping Our Electricity Future (SOEF) Version 1.1 also sets out a pathway for an electricity system that can deliver 80% of electricity demand from renewable energy by 2030. This is supported by the Shaping Our Electricity Future Roadmap v1.1 [6], which details the dynamic plan for achieving these goals, reflecting the best available information, including changes in climate and energy policy, and reports on progress against specific actions within the roadmap. Central to EirGrid's strategy for infrastructure delivery is our six-step approach for grid development.

1 https://cms.eirgrid.ie/sites/default/files/publications/EirGrid-Group-Strategy-2025.pdf
2 https://cms.eirgrid.ie/sites/default/files/publications/Shaping_Our_Electricity_Future_Roadmap.pdf
3 https://cms.eirgrid.ie/sites/default/files/publications/Shaping-Our-Electricity-Future-Roadmap_Version-1.1.pdf
4 https://www.gov.ie/en/publication/79659-climate-action-plan-2024/
5 https://www.gov.ie/en/department-of-climate-energy-and-the-environment/publications/climate-action-plan-2025/
6 https://cms.eirgrid.ie/sites/default/files/publications/Shaping-Our-Electricity-Future-Roadmap_Version-1.1_07.23.pdf

This framework sets out how the public and stakeholders can influence the decisions that EirGrid makes on grid development projects. It is an agile and flexible framework which includes transmission infrastructure projects and programmes of different types and scales. Projects enter the framework once they are sufficiently developed whilst also taking account of the applicable project need and the project driver.

The framework provides structured governance points throughout the process, called Gateways. Each Step has an associated Gateway, which functions as a formal governance checkpoint. The Gateways generally occur at the end of a Step and sanction the project moving into the subsequent Step. The exception to this is in Step 5 – where the Gateway occurs prior to entering the statutory planning process, and Step 6 – where the Gateway occurs prior to Project Agreement.

Figure 1: EirGrid Six-Step Framework for Grid Development

The framework is flexible and enables EirGrid and ESB Networks' teams to appropriately combine steps and activities to deliver transmission infrastructure in a timely manner, in accordance with best practice, environmental, social, regulatory, and technical requirements.

It is an agile and flexible framework as required for transmission infrastructure projects and programmes of different types and scales. Projects enter the framework once they are sufficiently developed whilst also taking account of the applicable project need and the project driver. Customer driven projects (e.g. renewable generation projects) enter the framework at Step 3 as they are initially developed via the customer connection agreement process. From an EirGrid perspective, these projects then progress directly from Step 3 to Step 6 as the activities typically carried out in Step 4 and Step 5 are managed directly by the Customer with EirGrid and ESB Networks in a support role only. For certain eligible transmission projects, EirGrid and ESB Networks at times combine and compress the grid development framework steps to enable faster project delivery as discussed in Section 7.1.2.

More information on the activities at each step as well as the progress of projects during 2024 on each of the steps in the Framework for Grid Development is outlined in Section 5 of this report.

80%

of electricity demand from renewable energy by 2030

2. Infrastructure Development & Delivery Highlights 2024

EirGrid manages a complex programme of transmission capital projects at various stages of development.

ESB Networks has the responsibility for efficiently and safely managing the delivery of these projects, including aspects such as procurement and construction. Projects are planned and delivered in line with the needs identified by EirGrid and jointly agreed work programmes. The successful rollout of an upgraded electricity network is a key requirement in achieving the ambitious Climate Action Plan 2024[7] targets and maintaining a safe and secure transmission system.

Summarised below are the Transmission Infrastructure Development and Delivery Highlights 2024.

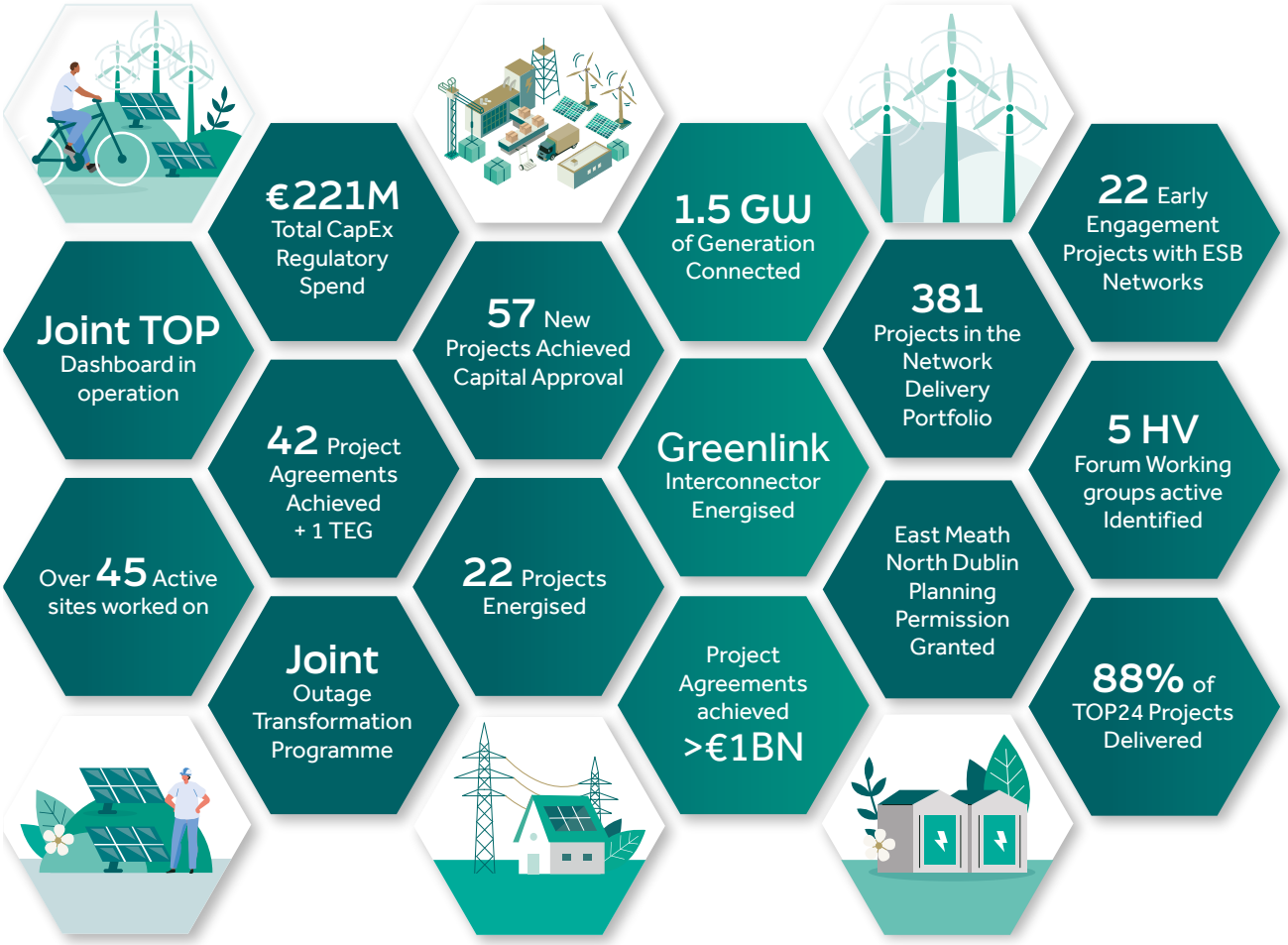


Figure 2: Transmission Development Highlights 2024

7 https://www.gov.ie/en/publication/79659-climate-action-plan-2024/

In 2024, strong progress was made by EirGrid and ESB Networks in terms of project development and delivery across the six steps of the Framework for Grid Development (Figure 2), with 57 projects achieving capital approval and 43 projects achieving project agreement and thus moved into the detailed design and construction stages. Strong levels of capital investment and project delivery were maintained throughout 2024. A total of €221M was invested in the transmission network, supporting continued progress across key infrastructure initiatives. In addition, 22 projects valued at €258M were energised reflecting sustained momentum in project execution and delivery.

EirGrid publishes a quarterly report called the Network Delivery Portfolio (NDP)[8] which gives stakeholders and industry a regular status update on the progress of approximately 380 projects through the six-step process towards completion. Further details on the NDP are included in Section 4 of this report.

8 https://www.eirgrid.ie/grid/grid-reports-and-planning/network-delivery-portfolio

2.1 Renewable Connections and Battery Energy Storage

The connection and completion of new renewable generation projects to the transmission network is vital to achieving the 2030 Climate Action Plan targets.

In 2024, we progressed a diverse set of renewable and Battery Energy Storage Systems (BESS) projects through the Six-Step Framework. BESS technologies facilitate renewable energy on the grid by supporting system reserve provision, generation adequacy, and congestion management. The battery technology captures the electrical energy at one time for it to be used at times of higher demand. Notably, significant capacity has been added to the grid this year, with additional capacity planned over the next couple of years (Figure 3).

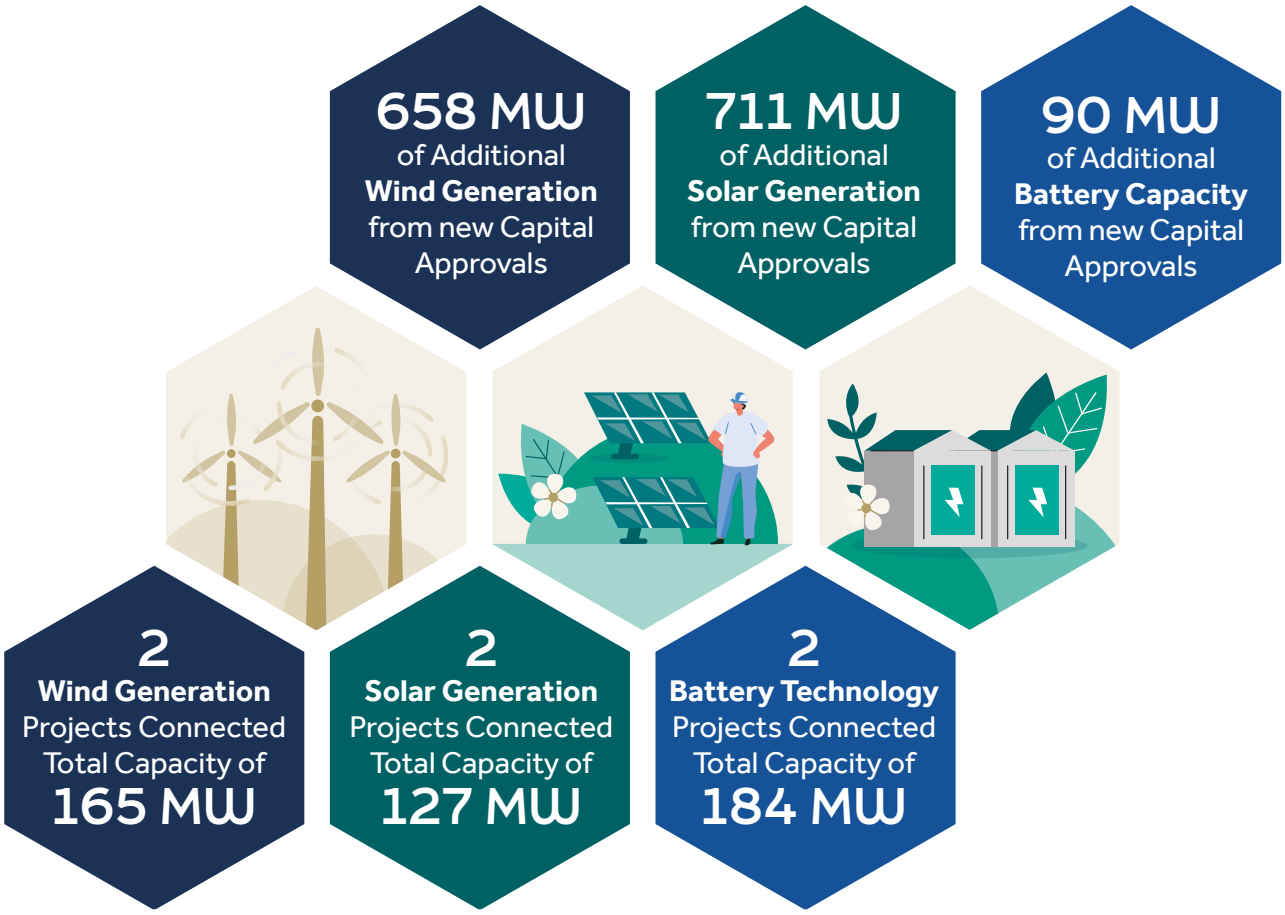


Figure 3: Renewable connections and battery energy storage highlights

Renewable Projects which Achieved Capital Approval

Twelve renewable projects and three Battery Energy Storage System (BESS) projects received Capital Approval and progressed through Step 3. More information on these projects can be found in Section 7. These projects are expected to provide significant benefits to the grid by 2030, including:

- Approx. 658 MW of Wind Generation
- Approx. 711 MW of Solar Generation
- Approx. 90 MW of Battery Energy Storage Systems
- Approx. 349 MW of Generation from T-4 Projects

Renewable Projects which Achieved Project Agreement

In 2024, eleven renewable projects including two combined Solar/BESS projects received Project Agreement moving them to the delivery phase. More information on these projects can be found in Section 10. These projects are expected to provide:

- Approx 50 MW of Wind Generation
- Approx 932 MW of Solar Generation
- Approx 25 MW of Battery Energy Storage Systems

Energised Renewable Projects

The following four projects, two Wind Farm and two Solar Farm projects were completed and connected to the system in 2024, with contracts to deliver over 292 MW of new renewable generation:

- Bogtown 110 kV Station (Moanvane Windfarm) will provide an additional 60 MW of renewable generation, while Stonestown 110 kV Station – Derrinlough Wind Farm will provide an additional 105 MW of renewable generation.
- Rathnaskilloge 110 kV Station (Rathnaskilloge Solar Farm) will provide an additional 95 MW of renewable generation, while Harlockstown Solar (Gallanstown Extension) will provide an additional 32 MW of renewable generation.

During 2024, two new BESS technology projects totalling 184 MW were completed.

- Aghada BESS 02 and will provide 159 MW of additional capacity.
- Kilcumber 110 kV Station (Cloncreen Battery Phase 2) will provide 25 MW of additional capacity.

2.2 Powering Up Dublin Programme

EirGrid launched the "Powering Up Dublin" Programme in May 2022 which involves replacing and upgrading older underground cable infrastructure that is reaching the end of its life and to facilitate future renewable electricity connections, specifically offshore generation. This programme will help ensure the security of supply in the Dublin region and improve the overall resilience of the transmission system.

Since the launch of the Powering Up Dublin Programme, EirGrid has completed the programme masterplan and developed proposals for five major cable circuit replacement and upgrade projects. Following extensive public consultation in 2023, EirGrid confirmed the Best Performing Route Option (BPRO) in January 2024 for three of the key 220 kV cable replacement projects: Carrickmines to Poolbeg, Finglas to North Wall, and North Wall to Poolbeg.

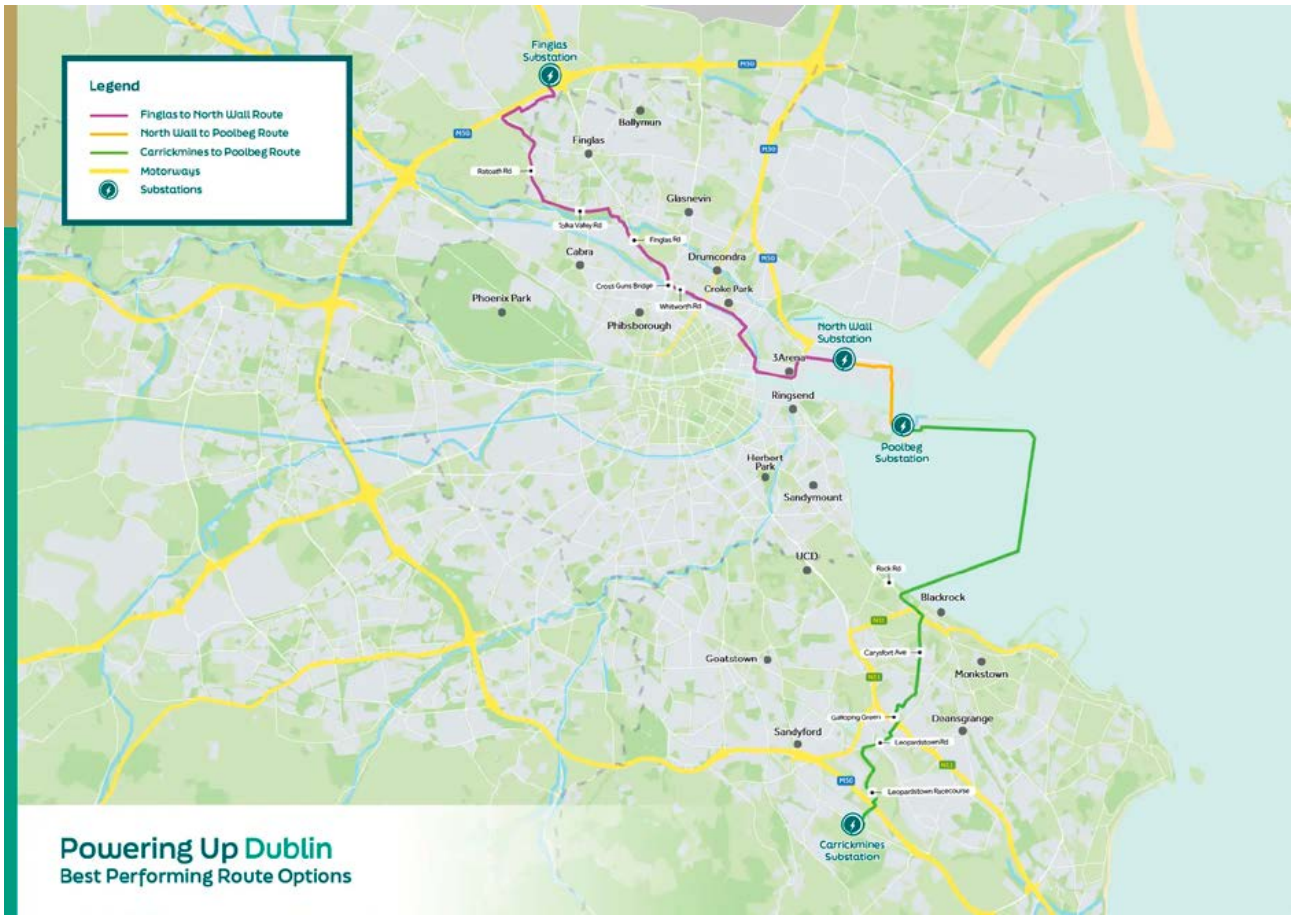


Figure 4: Dublin Programme - Emerging Best Performing Options

During 2024 the Finglas to North Wall circuit was developed to the point where EirGrid entered into a Project Agreement (PA) with ESB Networks who will plan, construct and energise the circuit by 2030. The Carrickmines to Poolbeg and North Wall to Poolbeg routes have sections that cross Dublin Bay and are therefore subject to both marine and onshore consenting processes. The time required to achieve the necessary consenting approvals is much longer than the circuit routes which are entirely onshore.

Identifying the BPRO for the two remaining cables between Inchicore and Poolbeg is well advanced with route selection, cable type and installation technology solution approved in June 2025. On the Poolbeg 220 kV Substation project, planning consent was achieved in November 2023; the project was further developed to the point where it reached Project Agreement (PA) with ESB Networks in December 2024, with initial energisation planned for the end of 2028. Planning consent for the Belcamp 220 kV Substation project was granted in October 2023. The project was further developed throughout 2024, and all elements of the Project Agreement between EirGrid and ESB Networks have been finalised. Initial energisation is planned for December 2028.

The Dublin Central Bulk Supply Point project will deliver a new 220 kV substation that will connect the transmission network to the distribution network in the East Wall area of Dublin City Centre. An EirGrid Capital Approval was achieved September 2024, and it is expected that a planning application will be submitted in 2025.

Two grid reinforcement projects, Fingal - East Meath and Kildare - Dublin, situated in the Greater Dublin Area were also progressed during 2024. They are significant projects that enable the connection of new grid substations and connecting circuits with voltages ranging from 110 kV up to 400 kV. Fingal - East Meath is more advanced and received Capital Approval in December 2024 with Kildare - Dublin expected to reach the same point by August 2025.

When complete, these projects will provide capacity to meet growing demand from residential and commercial property development and the electrification of heat and transport across the greater Dublin area.

More information on the Programme can be found on EirGrid's Website[9].

9 https://www.eirgrid.ie/dublin

2.3 Security of Supply

Security of supply continued to be an important area of focus for EirGrid in 2024 with several workstreams in operation across the company. This includes the development and implementation of operational measures, fast-tracking certain infrastructure delivery and market innovations to advance security of supply solutions.

EirGrid has been tasked by the CRU to deliver on elements of the CRU's Security of Supply Programme of Actions as set out in CRU21115[10]. In addition, the CRU's PR5 Local Security of Supply TSO Incentive, as set out in CRU/20/154[11], obliges EirGrid to develop Local Security of Supply specific plans for the greater Dublin region for the PR5 period.

Further information on the outturn performance for the Local Security of Supply incentive 2024 can be found in the Annual Electricity Performance Report 2024. The CRU published its most recent update on the Electricity Security of Supply Programme of Work in April 2024[12].

2.4 Greenlink Interconnector

In December 2024, Loughtown 220 kV Station was energised connecting the 504 MW Greenlink Interconnector to the electricity grid in Co Wexford. The new interconnector entered commercial operation in January 2025. This is a major strategic project, linking the electricity systems of Ireland and Great Britain via a subsea cable and is the third interconnector completed between Ireland and the UK. This interconnector provides a capacity of 500 MW, increasing the resilience and efficiency of Ireland's transmission grid.

2.5 Demand Connections and Data Centres

During 2024, two projects which facilitate demand connections totalling over 48 MVA were energised and/or completed. These are:

- The West Dublin Project was completed in December 2024 with the final connections made from the Castlebagot 110/220 kV substation to the Kilmahud, Corkagh and Barnakyle 110 kV substations, this increasing their customer connection capacities.
- The Kishoge 110 kV station was energised in December and is a new GIS station looping into the Aungierstown – Castlebagot 110 kV circuit via two underground cable circuits.

10 https://cruie-live-96ca64acab2247eca8a850a7e54b-5b34f62.divio-media.com/documents/CRU21115-Security-of-Electricity-Supply--Programme-of-Actions.pdf
11 https://cruie-live-96ca64acab2247eca8a850a7e54b-5b34f62.divio-media.com/documents/CRU20154-PR5-Regulatory-Framework-Incentives-and-Reporting-1.pdf
12 CRU_Electricity_Security_of_Supply_Programme_of_Work_Update_April_2024_.pdf

2.6 New Technology

2024 saw advancement in EirGrid and ESB Networks' progression of several transmission projects utilising new technologies, with significant progress made in the application and consideration of new non-wire technology solutions.

The introduction of new technology into the electricity grid, such as Dynamic Line Rating (DLR), Power Flow Controllers (PFC), Static Synchronous Compensator (STATCOM), and Distributed Temperature Sensing (DTS) are providing significant benefits for the electricity grid in Ireland and contribute to a more resilient and sustainable energy future. They will enhance the efficiency, reliability, and stability of the power system. These technologies allow for better utilisation of existing infrastructure, facilitate the integration of more renewable energy sources, and ensure a more stable supply of power even under high demand.

EirGrid has made significant progress in the application and consideration of non-wire solutions in recent years. EirGrid's network analysis performed as part of the Shaping Our Electricity Future (SOEF) Roadmap v1.0 [13] and v1.1, published in November 2021 and July 2023 respectively, identified a total of 21 candidate reinforcements, which involve non-wire solutions and technologies. These non-wire technologies are:

- Dynamic line rating; and
- Power flow controllers.

Dynamic line rating

The installation of Dynamic Line Rating (DLR) allows existing lines to operate at a higher load rating based on ambient conditions and can eliminate the need for the line to be uprated whilst also facilitating a new connection. Non-wire solutions continued to be considered for all investment planning decisions made in 2024.

Dynamic line rating was identified as an option in 14 candidate reinforcements in SOEF Version 1.0 (5 candidate reinforcements) and SOEF Version 1.1 (9 candidate reinforcements). The candidates from SOEF Version 1.0 have been progressed since their identification, with the final DLR candidate reinforcement identified in SOEF v1.0 achieving Gateway (GW3) approval in 2024.

The DLR candidate reinforcements identified in SOEF v1.1 were assessed and progressed in 2024. Out of these 9 candidate reinforcements, 5 projects are being assessed and 4 projects achieved Gateway 3 approval in 2024:

- Louth – Meath Hill 110 kV circuit and Meath Hill 110 kV Busbar DLR
- Lidrum - Louth 110 kV Circuit and Lisdrum 110 kV Busbar DLR
- Ratrussan – Shankill 110 kV circuit DLR
- Drumline Ennis 110 kV circuit and Drumline 110 kV Busbar DLR

13 https://cms.eirgrid.ie/sites/default/files/publications/Shaping_Our_Electricity_Future_Roadmap.pdf

Non-wire solutions were considered for all investment planning decisions made in 2024, therefore, in addition to projects identified in SOEF v1.0 and v1.1, application of DLR was identified as a potential solution for other projects. In total, eight DLR projects received Capital Approval (CA) and two Dynamic Line Rating (DLR) projects reached the Project Agreement (PA) stage in 2024.

Power Flow Controllers (PFC)

PFCs are devices which when installed on a transmission circuit allow control over how power is directed along that circuit and neighbouring circuits. PFCs have been identified as an option in 7 candidate reinforcements across SOEF. The use of PFCs will be evaluated as part of the options evaluation, with selection and approval of the best performing option at Gateway 3. The needs associated with the PFC candidate reinforcements in SOEF will continue to be assessed and progressed in the coming years, particularly as more information is gathered on the power flow controller trial project: Binbane Power Flow Control Scheme which achieved GW5 approval in 2023.

Static Synchronous Compensator (STATCOM)

In early 2024, Thurles 110 kV station in Co Tipperary was energised using STATCOM technology. A STATCOM is a device that stabilises voltage in power grids. STATCOMs help to enhance grid stability and maintain voltage levels, improving the overall reliability and efficiency of the grid. They are especially useful when power demand is high or new power sources are being connected to the grid.

Distributed Temperature Sensing (DTS)

Distributed Temperature Sensing (DTS) uses fibre optic sensor cables embedded in the power cable, typically over lengths of several kilometres, that function as linear temperature sensors. The result is a continuous temperature profile along the entire length of the sensor cable. The technology was first deployed in 2023. The operational DTS data for the Kilpaddoge – Knockanure 2 220 kV cable was utilised by the TSO during 2024. All 3 phases of both Kilpaddoge – Moneypoint 1 & 2 cables as well as the spare phase associated with Kilpaddoge – Moneypoint 1 & 2 cables are connected to DTS for Temperature Monitoring. At the end of 2024, a DTS system was installed and commissioned in Belcamp Station and is monitoring the Belcamp – Finglas 220kV cable.

Further detail on the Joint TSO/TAO Incentive performance for 2024 is included in the Annual Performance Report 2024.

3. Capital Expenditure

Every five years the CRU determines the revenue price control for the TSO (EirGrid) and the TAO (ESB Networks). The CRU sets a revenue envelope to cover the development of the national transmission grid.

This is referred to as network capex, under which EirGrid and ESB Networks carry out their capital works programme over a five-year period. This envelope can be adjusted, if necessary, during the five years to allow for changing needs. The costs associated with development of the national transmission grid are recovered over a 50-year period consistent with the expected network asset life.

The total TSO and TAO network capex allowance for the PR5 period was determined by CRU in the PR5 Final Determination, CRU/20/152, as €1,048M (2019 Prices), of which €210M was allocated to 2024. Further information on the PR5 final determination can be found in the determination paper on CRU's website[14].

The PR5 programme evolved in 2024 as projects were completed, progressed, added, rescheduled, or removed. The total network capex regulatory spend for 2024 was €221M.

The 2024 outturn exceeds the PR5 determination allowance of €210 million* by 5% but also represents a slight decrease of €14 million when compared to 2023.

Table 1: Actual Total Regulatory Spend PR5 2024 vs PR5 Allowance for 2024
(*Note: expressed in nominal 2024 money)

	PR5 TSO & TAO Network Capex Determination Allowance 2024	PR5 Programme 2024 TSO & TAO Outturn	Variance PR5 Outturn 2024 vs PR5 Allowance
Total network CapEx regulatory spend	€210m*	€221m*	+€11m* (+5%)

14 https://cruie-live-96ca64acab2247eca8a850a7e54b-5b34f62.divio-media.com/documents/CRU20152-TSO-and-TAO-Transmission-Revenue-2021-20252.pdf

The Network Capex spend profile is heavily influenced by spending on major projects (such as East Meath – North Dublin, North Connacht, North South Interconnector, major stations, and cable projects). The graph below shows the Network Capex spending trend over the last 5 years from 2020 to 2024.

It is anticipated that the Network Capex delivery on major projects, and therefore the spending trend, will increase again for 2025. This aligns with EirGrid's Q4-24 Network Delivery Portfolio forecast for the remaining year of PR5 as published in January 2025[15].

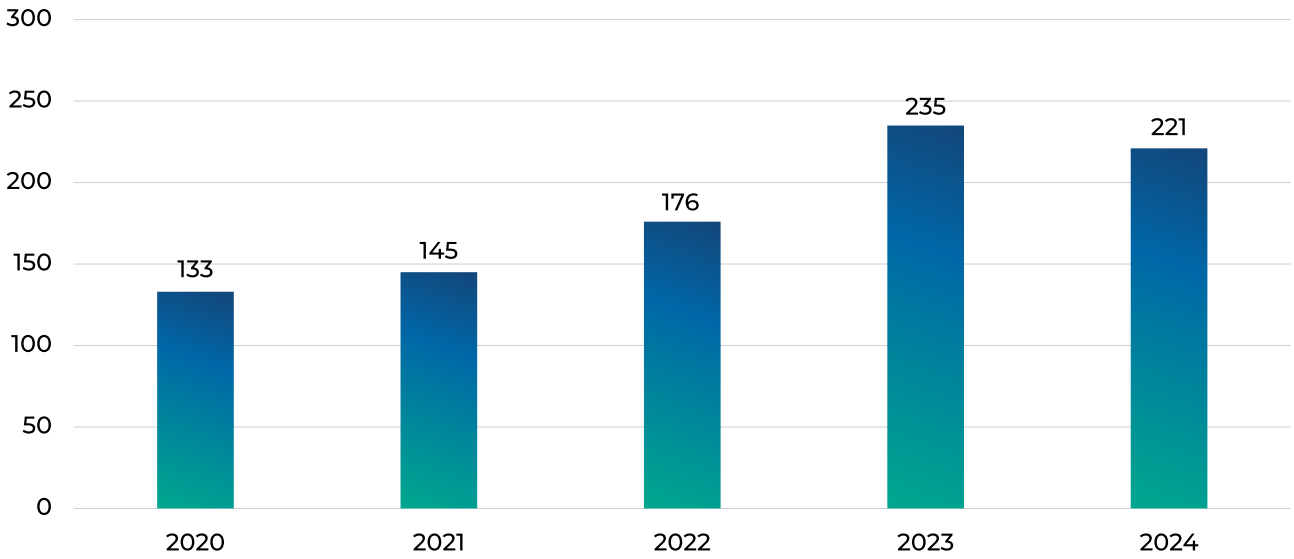


Figure 6: TSO/TAO total network Capex regulatory spend by year (€M)

15 Network-Delivery-Portfolio-Publication-Q4-2024.pdf

4. Network Delivery Portfolio

EirGrid publishes a quarterly Network Delivery Portfolio (NDP) update for stakeholders and industry to meet CRU reporting requirements, as set out in CRU/20/154. The NDP contains an up-to-date programmatic view of the ongoing and pipeline transmission capital projects which span the period 2024-2030, covering the PR5 and PR6 periods.

The quarterly NDP publication is a dynamic and agile unconstrained[16] programme which contains the projects from the PR5 submission, newly added pipeline projects and additional requirements identified by the analysis carried out as part of the Shaping Our Electricity Future studies. The NDP provides a quarterly status update on the three major project milestones of EirGrid Capital Approval, Project Agreement (PA) with ESB Networks and Energisation for circa 380 projects.

The objective of the NDP is to deliver on the EirGrid Group Strategy[17] to transform the power system by 2030, in accordance with the Climate Action Plan 2024[18]. EirGrid does this by providing a clear and transparent programme over multiple years which maximises the amount of project related work that can take place to reinforce the system, connect customers and ensure the required level of maintenance of the transmission system while ensuring a safe and secure system. The Q4-24 NDP project milestone data provides the status updates that form the basis for EirGrid's Transmission Development Plan 2024 and the information contained within this report.

16 Project dates and timelines provided in the NDP are based on an unconstrained scenario and are, therefore, indicative in nature and subject to change for a variety of reasons.
17 https://cms.eirgrid.ie/sites/default/files/publications/EirGrid-Group-Strategy-2025.pdf
18 https://www.gov.ie/en/publication/79659-climate-action-plan-2024/

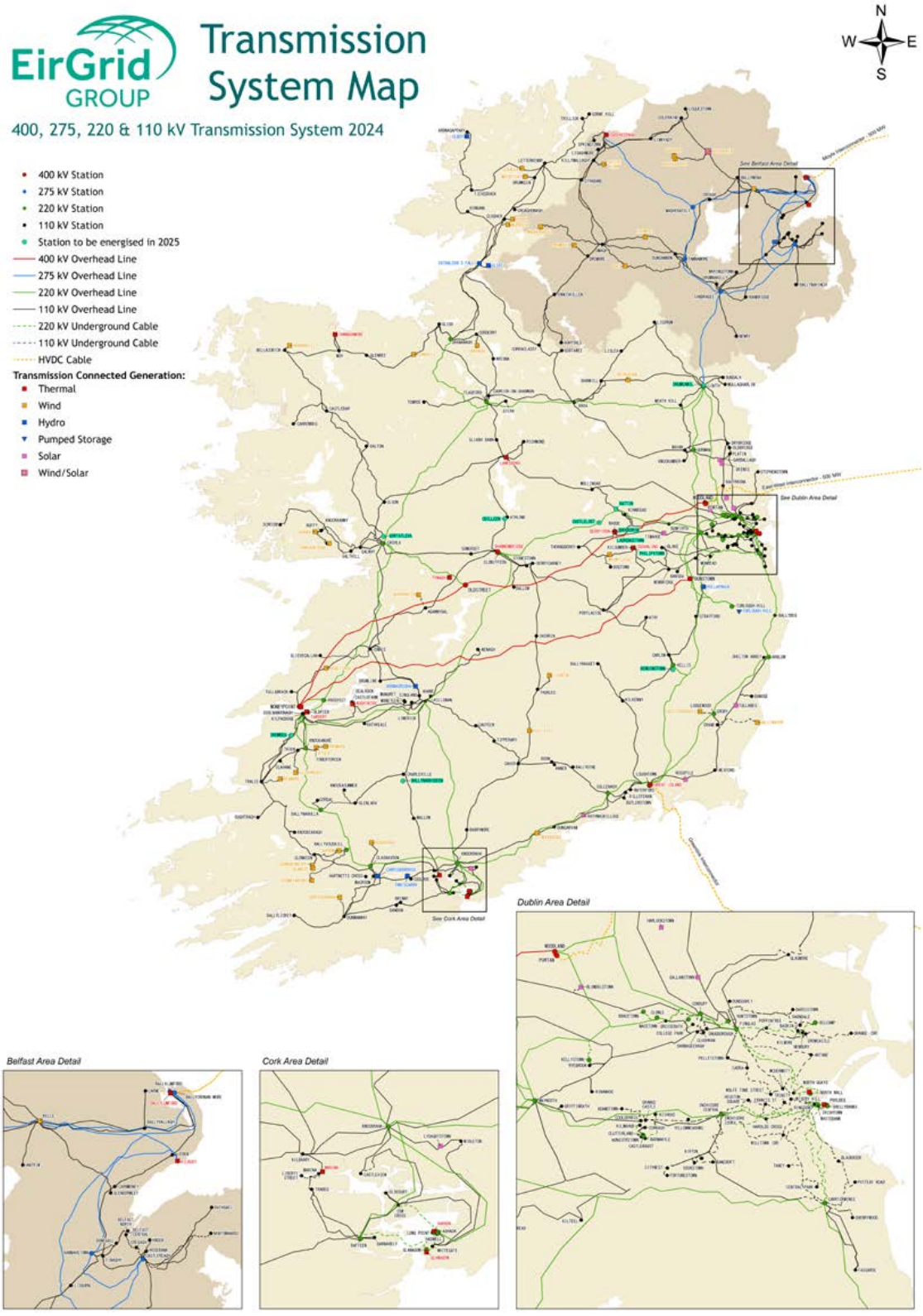


Figure 7: All Ireland Transmission System Map 2024[19]

19 EirGrid-Transmission-System-Map-February-2025.pdf

4.1 Network Delivery Portfolio Trends in 2024

The fourth year of PR5 saw significant progress made by EirGrid and ESB Networks in terms of Transmission Outage Programme (TOP) delivery and improvements in the planning and consenting process.

These metrics are indicators of the volume of projects progressing through the Six-Step Process towards energisation and completion over the remainder of PR5, ultimately contributing towards the delivery of security of supply, 2030 climate change decarbonisation and customer connection targets.

Capital Approvals

Fifty-seven projects achieved Capital Approval in 2024. These include 29 customer connections, 20 system reinforcements, 7 asset refurbishments and 1 diversion project. This volume of newly approved projects marks another year of strong performance and highlights the PR5 step change in the quantity of projects progressing through the Investment Planning process. Further details on the benefits associated with these projects is outlined in Section 7 of this report.

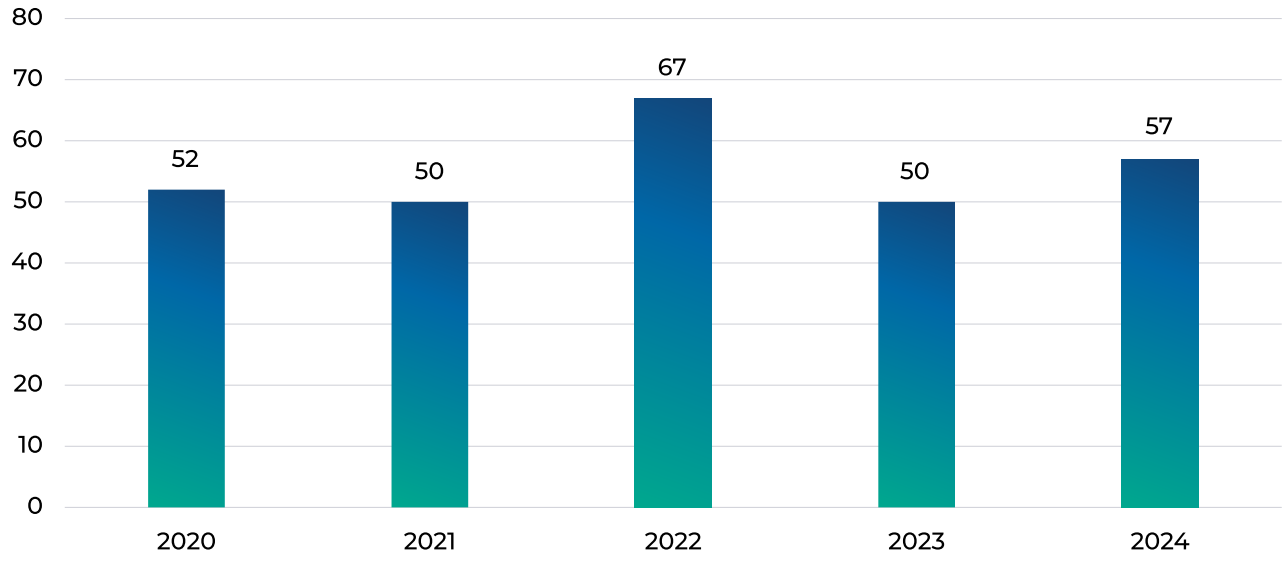


Figure 8: Number of new capital approvals – 5 year period

Project Agreements

Forty-three Project Agreements (PA) were concluded between EirGrid and ESB Networks in 2024. These include 24 customer connection projects, 11 system reinforcement projects, 6 asset refurbishment projects and 2 diversion projects.

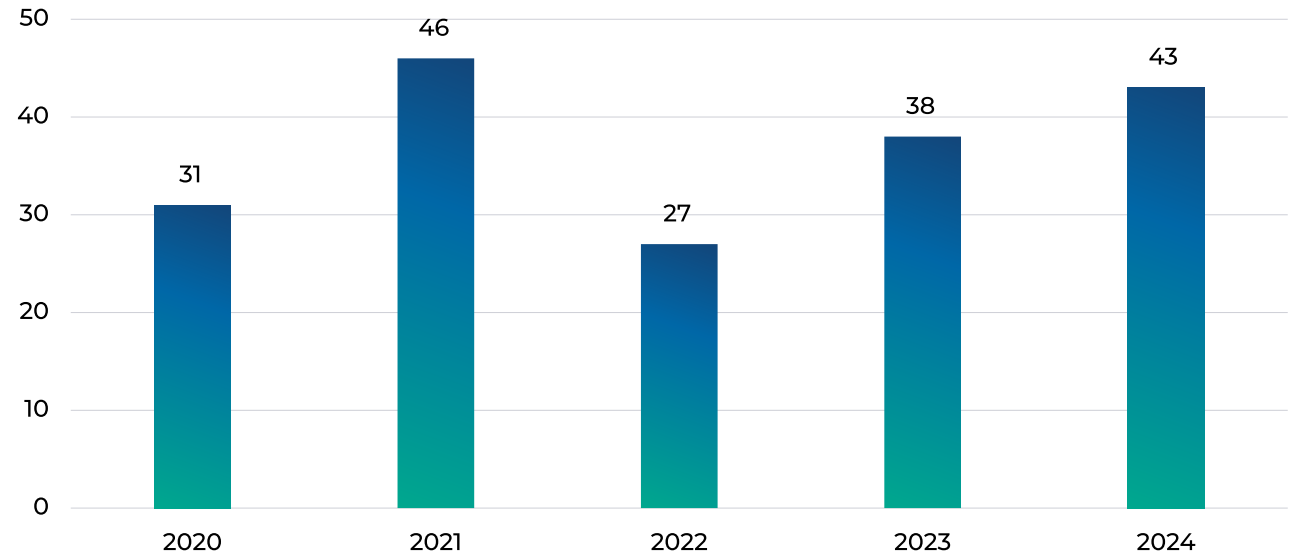


Figure 9: Number of new project agreements signed – 5 year period

Energisations and Completions

Twenty-two projects were energised and/or completed in 2024 including 5 Temporary Emergency Generation (TEG) projects.

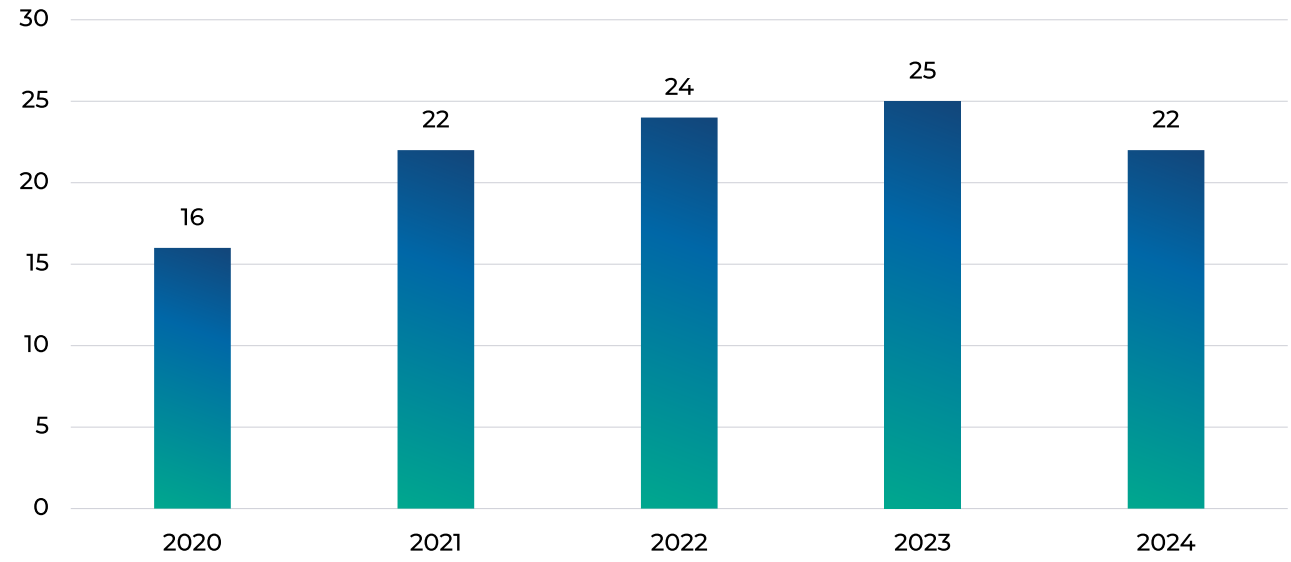


Figure 10: Number of project energised/completed – 5 year period

4.2 Project Delivery Dependencies & Challenges

EirGrid and ESB Networks work collaboratively to overcome project development and delivery challenges and manage project and programme risks. We will ensure that early-stage engagement continues to be a tool to anticipate and mitigate delivery challenges. End to end project management is a particular focus and it is critical to continue engagement at each stage of a project to optimise outcomes. Where there are changes to project energisation dates, these are communicated in quarterly and annual publications on EirGrid's website.

There are a number of risk factors that impact on the ability to deliver investment at this scale. These generally fall into one of the following seven categories; the consenting process and legal matters, technical complexity, resourcing and global supply chain constraints, public and stakeholder challenges, land accessibility and affordability, as well as issues arising on third-party customer projects and outage risks.

5. The Six-Step Grid Development Process: Step 1

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

In Step 1, EirGrid confirms the need for a project by considering potential changes in the demand for electricity. These changes are influenced by factors such as how and where electricity is and will be generated, and changes in electricity use.

EirGrid does this by identifying:

- Future system needs which are brought about by changes to demand, generation and storage, interconnection, and asset condition.
- System reinforcement needs - application of technical planning standards.
- Asset management and maintenance needs - condition assessments and maintenance policies.

In 2019, EirGrid published Tomorrow's Energy Scenarios (TES) 2019 System Needs Assessment (SNA)[20]. The purpose of the SNA is to highlight the long-term needs of the grid in Ireland out to 2040.

The SNA report was the output of a process that started with the publication of, and consultation on, TES in 2019 In 2023, EirGrid published an updated Tomorrow's Energy Scenarios (TES) report[21], extending the planning horizon to 2050 and introducing four new scenarios to reflect evolving energy trends and policy ambitions. We must adhere to technical standards when planning the network. These technical standards are detailed in EirGrid's Transmission System Security and Planning Standards (TSSPS)[22] as approved by the CRU. If it is established that the current grid cannot meet expected future needs under the TSSPS, the grid will need further investment.

In 2021, we published Shaping Our Electricity Future (SOEF) Roadmap[23]. SOEF sets out our planned approach – our roadmap in market operations, network development, and system operations - to achieve our renewable ambition. The ambition, at the time of publication in 2021, was to have at least 70% of our electricity coming from renewable sources by 2030. SOEF Version 1.1 Roadmap[24] reflects the Government's updated Climate Action Plan 2030 targets (80% of electricity coming from renewable sources by 2030), as published in July 2023.

20 https://cms.eirgrid.ie/sites/default/files/publications/EirGrid-TES-2019-System-Needs-Assessment-Report_Final.pdf
21 The updated 2023 version of TES can be found at https://www.eirgrid.ie/industry/tomorrows-energy-scenarios-tes#tes-2023
22 https://cms.eirgrid.ie/sites/default/files/publications/EirGrid-Transmission-System-Security-and-Planning-Standards-TSSPS-Final-May-2016-APPROVED.pdf
23 https://cms.eirgrid.ie/sites/default/files/publications/Shaping_Our_Electricity_Future_Roadmap.pdf
24 https://cms.eirgrid.ie/sites/default/files/publications/Shaping-Our-Electricity-Future-Roadmap_Version-1.1_07.23.pdf

The projects highlighted in SOEF and TES are in addition to projects that are already being undertaken by EirGrid. Most importantly, each individual project will follow the Six-Step Framework, ensuring the necessary assessments take place, relevant planning regulations are met, and appropriate engagement takes place prior to moving forward. These projects will be incorporated into the NDP as and when they achieve an EirGrid Capital Approval.

When we have identified and confirmed a system need, a formal process of project development is initiated. At this point, the only decision that has been made is to confirm that there is a need for a grid development project and the details of the solution have not yet been considered.

Key to this process is considering a range of possible ways that energy usage may change in the future. We call this scenario planning. We test whether the grid of today can support a range of possible future energy scenarios or if the grid needs further investment.

5.1.1 What happened in Step 1 during 2024?

Network needs are identified through several different processes, including TES, SOEF, and the connection offer process. In 2024, various needs located across the network were analysed, in line with the Six-Step Framework for developing the grid. This allowed EirGrid to better understand and define the network needs before preparing a list of solution options during Step 2. Following completion of Step 1, the needs progress to Step 2, where options to meet those network needs will be analysed.

The projects newly approved in 2024 are located right across the transmission network, with a focus on facilitating the connection of RES across Ireland, contributing towards the 2030 climate goals. In addition to this, several projects progressed which will increase the capacity and resilience of the existing network to meet domestic, commercial, and other demand needs.

In 2024 we set a target of six Gateway 1 approvals for the year and six were achieved:

- Clogher Drumkeen 110 kV Circuit Thermal Capacity, Northwest region: Confirmation of need to increase the thermal capacity of two 110 kV circuits which will support the integration of renewable energy sources and improve the security of supply in the region.

- Platin 110 kV Station Refurbishment, East region: Confirmation of need to refurbish one 110 kV Station which is crucial for enhancing its reliability and capacity, ensuring a stable power supply, and accommodating future demand growth in the area.
- Letterkenny Golagh Tee 110 kV Thermal Capacity Needs, Northwest region: Confirmation of need to increase the thermal capacity of the circuit, which is vital for integrating more renewable generation and maintaining a stable power supply in the region.
- Gorman – Maynooth 220 kV Circuit Capacity Needs and Castlelost - Maynooth 220 kV Circuit Capacity Needs, Greater Dublin region: Confirmation of need to increase the capacity of two 220 kV circuits which will support the integration of renewable energy and manage growing power demands in the area.
- Cashla-Somerset-Shannonbridge, Midlands region: Confirmation of need to refurbish One 110 kV line which is essential for improving its reliability and capacity, supporting the integration of renewable generation, and ensuring a stable power supply in the region.

Please note that to accelerate delivery, Step 1 activities are often combined with those in Steps 2 and 3, particularly where the project driver and technology solution are already well understood. This integrated approach, as outlined in Section 7.1.2, enables more agile and efficient project progression through the framework.

Table 2: Step 1 Project Progress

Milestone	Target	Delivered
Total GW1 Approvals	6	6

5.1.2 Step 1 Challenges and Opportunities

Confirming the need for a grid development project in Step 1 presents significant challenges, particularly given the unprecedented scale and pace of the energy transition. EirGrid must assess future electricity needs in a rapidly evolving environment shaped by shifting demand, emerging technologies, and ambitious climate targets. This work is further complicated by external dependencies across the electricity ecosystem, including the timely delivery of renewable generation, system services, interconnection, and enabling infrastructure. Broader challenges such as planning and regulatory timelines, supply chain constraints, and the need for public support also influence the ability to accurately forecast and plan for future system needs.

To address these challenges, EirGrid applies a robust scenario planning approach that considers a wide range of possible futures. This is supported by close collaboration with government, regulators, industry stakeholders, and the public to ensure alignment on national energy goals. EirGrid also integrates technical assessments, asset condition reviews, and planning standards to ensure that identified needs are evidence-based and future-proofed. By engaging early and transparently, and by advocating for enabling policy and investment, EirGrid helps ensure that Step 1 decisions are grounded, credible, deliverable and capable of supporting Ireland's long-term energy ambitions.

6. The Six-Step Grid Development Process: Step 2

What technologies can meet these needs?

Step 2 involves the creation of a shortlist of options which meet the future needs as confirmed in Step 1. As part of this process, EirGrid seeks feedback from our stakeholders on the list of potential solutions.

In Step 2, we want to understand which options for our stakeholder's think are suitable and which are not. We will study stakeholders' feedback and produce a shortlist of options to consider in more detail in Step 3 of the Six-Step Framework.

When compiling the shortlist of options to consider in more detail, we try to balance stakeholder preferences with technical, cost, and environmental suitability. This means we may include options that meet EirGrid's Transmission System Security and Planning Standards (TSSPS) and have a strong public preference but are technically less suitable than alternatives. We will consider the issue of overall suitability in more detail when progressing to Step 3. If a major new line or linear development is shortlisted, an underground cable option will also be considered. Technologies that are available now can be considered as potential solution options straight away. New technologies that are ready for trial use may also be considered depending on their level of maturity.

We place new technologies into three broad categories:

1. New Technology at Research and Development Stage
2. New Technology Ready for Trial Use
3. Technology Available Now

6.1.1 What happened in Step 2 during 2024?

In 2024, one project successfully progressed through Step 2. This project was one of three projects which targeted Step 2 completion in 2024. The remaining two projects required additional technology assessments within Step 2 to ensure a more comprehensive solution for the geographical areas under consideration and to integrate stakeholder feedback. These projects will proceed through GW2 once the most effective option has been identified.

The 2024 target of three projects concluding Step 2 reflects a strategic approach to identifying appropriate technical solutions for emerging transmission needs. In many cases, the technology is already well-defined through standardised processes or known reinforcement requirements. As a result, certain projects do not require a standalone technology identification phase. Although one project progressed through Step 2 on a standalone single step basis, twenty-two projects completed Step 2 in combination with other steps in 2024. This flexible and integrated approach is covered in more detail in Section 7.1.2.

Table 3: Step 2 Project Progress

Milestone	Target	Delivered
Total GW2 Approvals	3	1

6.1.2 Step 2 Challenges and Opportunities

In Step 2, EirGrid develops a shortlist of potential solutions to meet the confirmed system needs. This stage presents several challenges, including balancing diverse stakeholder views with technical, environmental, and cost considerations. The inclusion of emerging technologies adds further complexity, as their readiness and long-term viability must be carefully assessed. Additionally, public expectations for undergrounding infrastructure and minimising local impacts can sometimes conflict with the most technically efficient and/or cost-effective options.

To address these challenges, EirGrid engages widely with stakeholders to gather meaningful feedback and ensure transparency in how decisions are made. A structured evaluation process is used to weigh each option against planning standards, environmental impact, cost, and public preference. Where appropriate, innovative technologies are included for further consideration, provided they meet minimum maturity thresholds. This balanced approach ensures that the shortlist reflects both stakeholder input and the practical realities of delivering a secure, sustainable electricity system.

7. The Six-Step Grid Development Process: Step 3

What’s the best option and what area may be affected?

As part of EirGrid's Six-Step Framework for project development and delivery, needs are assessed in Step 1, solution options progressed in Step 2, and a best performing option is identified in Step 3. Step 3 also identifies the study area where this option could be placed. At the end of Step 3, projects progress through Gateway 3. Gateway 3 is crucial in EirGrid's Six-Step Framework as we confirm the investment decision for the project and the project progresses from a pipeline project to a Stage 1 ongoing project.

Within Step 3, EirGrid is tasked with confirming that the project need still remains, the complexity of the project, and the area where the project can be built. Typically, this step is used to identify potential issues that may restrict options within the study area for the project. Stakeholders' views are sought on a specific technology option and on the study area where the project is planned for. This consultation helps us to understand what is important to stakeholders and to learn more about the local area.

When making our decision a multi-criteria decision-making process is employed, where we will populate the five main criteria and sub-criteria for each option. Our experts will then evaluate the options and develop justification for the best performing solution option. A decision is then based on a detailed analysis of stakeholder feedback and on economic, technical, social, and environmental criteria.

7.1.1 Step 3 performance against plan

In 2024, EirGrid worked towards a target of fifty Capital Approvals in Step 3. This target was achieved and surpassed with fifty-seven Capital Approvals advanced in 2024. These fifty-seven new projects, with a significant forecast total capital cost of €1bn were added to the PR5 programme and represent further major investment in the development of the transmission system.

The projects newly approved in 2024 are located across the transmission network in the South, North-West, West, Midlands, and North-East Regions. These projects will help to maintain and enhance the security of supply and facilitate the integration of renewable energy onto the transmission system. The projects that achieved Capital Approval in 2024 comprise:

- 29 customer connections,
- 7 asset refurbishments,
- 20 system reinforcements, and
- 1 diversion of an existing circuit.

These projects are expected to deliver diverse and wide-reaching benefits including:

- Approx. 1.37 GW of Renewable Generation
- Approx. 90 MW of Battery Energy Storage Systems
- Approx. 299 MW of Generation from T-4 Projects

Table 4: Step 3 Project Progress

Milestone	Target	Delivered
Total Capital Approvals	50[25]	57

Three major investment decisions were achieved in 2024 including:

- CP1196 Arklow Ballybeg Carrickmines 110 kV Capacity Needs
- CP1214 Fingal to East Meath Grid Reinforcement Project
- CP1273 Dublin Central Bulk Supply Point

€1b forecast total capital cost for fifty-seven new projects

25 The targets outlined reflect EirGrid's agreed business targets for the 2024 calendar year and are not derived from the PR5 submission to the CRU in 2019.

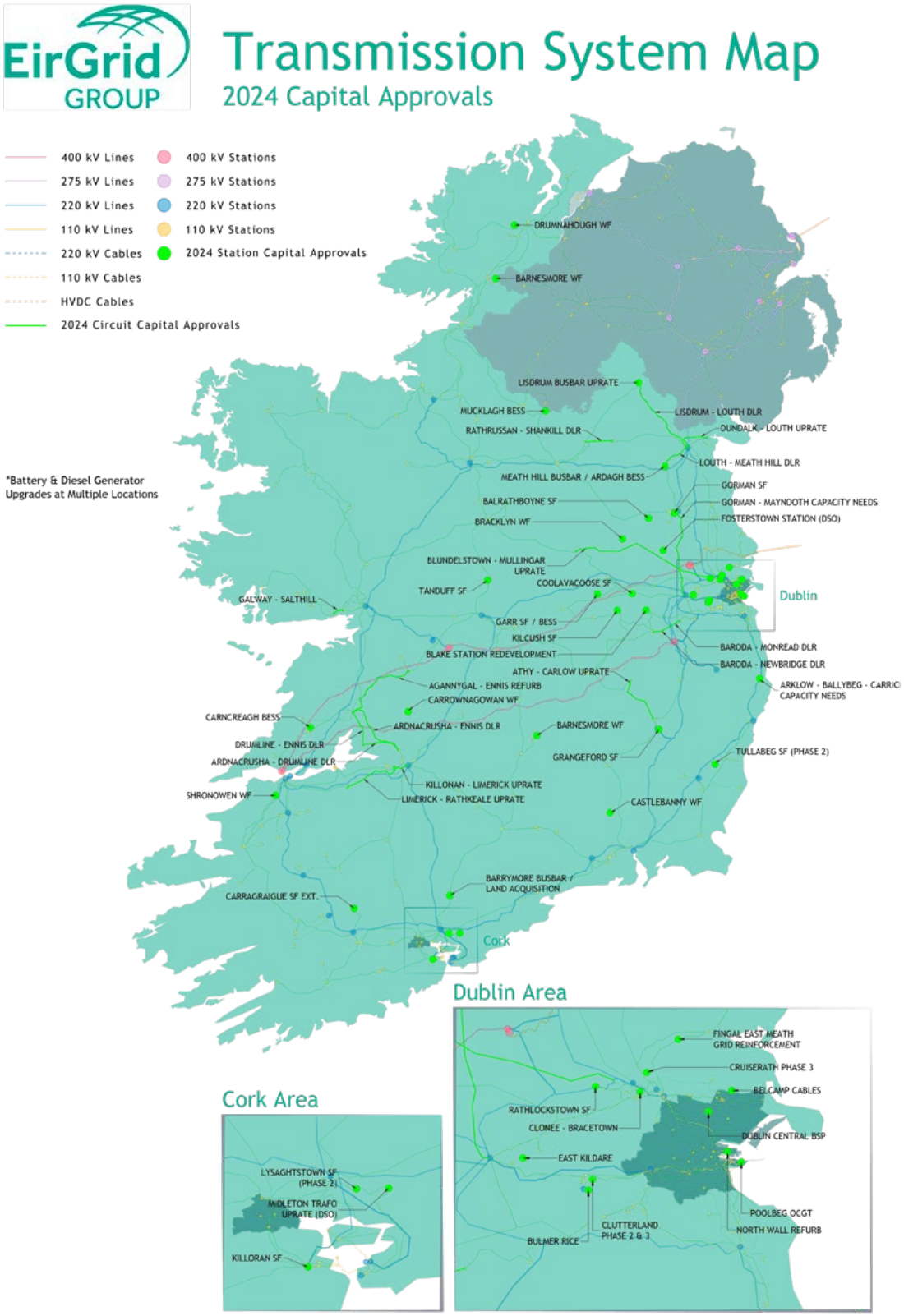


Figure 11: 2024 Capital Approvals (CA's)

The connection and completion of new renewable generation projects to the transmission network is vital to achieving the 2030 Climate Action Plan targets. Conversely, there has been continued growth of large energy users, known as Demand Connections, in Ireland over recent years. These demand connections include Information, Communications and Technology (ICT) industries and high-tech manufacturing companies, and data centres. In recent years, new policies have been developed to manage the orderly connection and management of demand connections to and on the transmission system.

To meet the demands of bringing new connections onto the grid such as Demand or Renewable Customers, Steps 1, 2, and 3 are managed under the Customer Connections process[26]. This process identifies the optimum connection method between the Customer and the transmission network. When the connection agreement is executed, a capital approval is progressed through Step 3 Governance and an EirGrid Project Manager manages the project through to its delivery in close collaboration with the customer.

7.1.2 Accelerating Delivery in Steps 1, 2, & 3

EirGrid and ESB Networks combine and compress the grid development framework steps for suitable transmission projects to facilitate accelerated project delivery across the Network Delivery Portfolio. This involves completing activities in parallel, particularly at the early investment planning stages, reducing the time between steps, engaging earlier with ESB Networks on scoping, the implementation of joint specialist teams and greater joint planning and coordination of outage activities.

This agility and flexibility, mainly for smaller projects where the technology, option and/or route is clear, allows us to progress projects to completion in a timely manner to meet challenging targets. This approach addresses network needs efficiently by paralleling activities, early engagement with TAO, and coordinated planning.

26 Becoming a Customer | Industry | EirGrid https://www.eirgrid.ie/industry/becoming-customer

The diagram below illustrates the number of projects that achieved Gateway 1, Gateway 2, and /or Gateway 3 in 2024 which is 64. Combined Gateway approvals are indicated in the overlapping areas of the Venn diagram.

In 2024:

- One project achieved a combined Gateway 1 & 2
- Six projects achieved a combined Gateway 2 & 3
- Sixteen projects achieved a combined Gateway 1, 2, & 3

An example of a project where Steps 1 – 3 were combined is the North Wall Station Refurbishment which will provide a life extension to aging assets in North Wall 220 kV substation. The existing station, which is a highly critical asset and a vital node in the transmission network also provides power supply within Dublin. When completed this project will contribute to security of supply in Dublin by extending the life of the station and reducing the risk of asset failure.

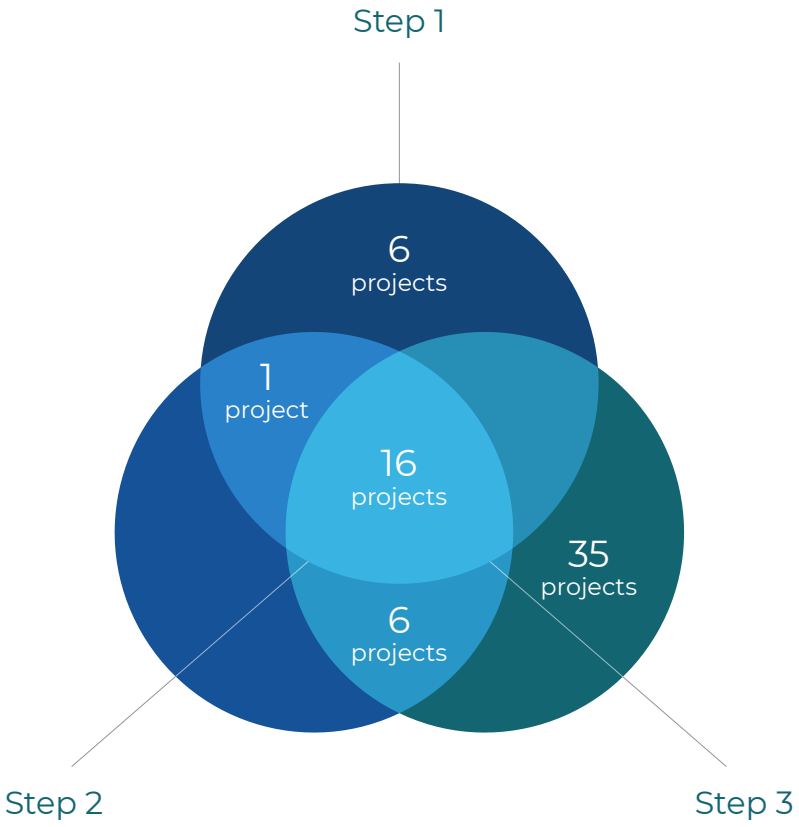


Figure 12: Projects with combined steps in 2024

7.1.3 Progression of 2023's Capital Approval Projects

In 2023, EirGrid approved fifty new projects in Step 3 with a total capital cost of €508M. By the end of 2024, 36% of the projects achieving capital approval in 2023 had progressed into Step 6 (detailed design/construction/energisation), representing good progression of projects in the transmission capital programme.

Projects in Steps 4/5 are in the consenting and scoping stage and will be progressed to Step 6 in due course. Projects classified as 'on hold' are not currently being progressed.

By the end of 2024, the status of all projects which achieved Capital Approval in 2023 was as follows:

- Projects Completed - 4
- Projects that Achieved Project Agreement - 14
- Projects Progressing Towards Project Agreement – 31
- Projects On Hold – 1

The summary of 2024 investment decision performance shows that TAO/TSO exceeded the established targets for this period, reflecting a strong commitment and high performance. Through diligent planning, effective collaboration, and proactive risk management, this area surpassed expectations, reinforcing a culture of continuous improvement to facilitate the delivery of ambitious portfolio targets over the coming decade.

7.1.4 Step 3 Challenges and Opportunities

Step 3 is a pivotal stage in project development, where EirGrid identifies the best performing solution and confirms the area in which it could be built. This step presents several challenges, including the need to validate that the original system need still exists, while also navigating the complexity of selecting a preferred option within a specific geographic area. Public consultation becomes more focused at this stage, often raising concerns about local impacts, land use, and technology choices. Balancing these views with technical, environmental, and economic considerations can be particularly challenging, especially for large or complex infrastructure projects.

To manage these challenges, EirGrid applies a structured multi-criteria decision-making process that evaluates each option against a range of technical, social, environmental, and economic factors. Stakeholder feedback is carefully analysed and integrated into the decision-making process to ensure local knowledge and concerns are reflected. This approach helps build trust and transparency while ensuring that the selected option is robust, future-proof, and aligned with national energy goals.

36%

of projects approved in 2023 progressed from Step 3 and into Step 6 in 2024

8. The Six-Step Grid Development Process: Step 4

Where exactly should we build?

Following consultation and engagement in Steps 1, 2, and 3, EirGrid has made some key decisions and knows which technology is best for use on a project and roughly where the project will be built. We continue to examine and consider both an overhead line option and an underground cable option if a new circuit is needed.

In Step 4, we assess where exactly the most appropriate place to build the project is going to be. This could be either a circuit or station, or both. Some projects will not go through Step 4, primarily uprates or similar works where the pre-existing circuit and/or station is already built and therefore the location of the proposed project is already determined.

This step builds on the best performing technology solution and study area identified in Step 3, with detailed environmental and social analysis that explores feasible and best performing local siting and routing options for that technology solution.

The decision-making processes at this Step are informed by local, social, and environmental "on-the-ground" information; combined with the higher-level datasets used in Step 3. This approach enables us to map out potential sites for stations or circuit route corridors, ensuring alignment with the the best-performing technology solution identified for the area under study.

We continue to actively seek input from our stakeholders, adapting our engagement strategy to the size of the project. This adaption is evident in various formats, from public forums to interactive web platforms equipped with response forms. EirGrid is committed to fostering open dialogue, promoting these consultations via our website and through media channels, both local and national, tailored to the project's scope.

8.1.1 Step 4 Performance against Plan

In 2024, EirGrid targeted three projects to progress through Step 4. One project achieved GW4 approval, the Arklow-Ballybeg-Carrickmines 110 kV Capacity Needs project.

The two other projects, the Inchicore–Poolbeg #1 cable replacement and the Inchicore–Poolbeg #2 Cable replacement, encountered significant issues due to the complexity of their scope and are forecast to complete Step 4 in 2025. These complex projects both relate to aged Self-Contained Fluid Filled (SCFF) cable circuit within the Dublin area. Key constraints were identified which included existing infrastructure, gas, water, electricity, other services, road network, public transport including rail, bus, LUAS, Dart, rivers, canals and potential land use constraints.

Additional time was required to complete Step 4 activities for these projects meaning that these milestones were not achieved as planned in 2024. The replacement works are intricate, overlaid with complex outage constraints. The project proposals are to replace the cables with modern cables on predominantly new routes offline to work towards achieving 2030 targets. These projects form part of EirGrid's Cable Maintenance Policy to replace all Fluid Filled cables on the network.

The target of three projects concluding Step 4 in 2024 reflects the specific purpose of this step in identifying the most suitable location for new infrastructure. This step is applied in the case of greenfield projects and smaller or uprate projects may not explicitly require GW4 approval, as their location is already established. As a result, only one project progressed through Step 4 independent of other steps in the framework. However, it should be noted that 3 projects completed Step 4 in combination with Step 5. This flexible approach, outlined in Section 7.1.2, supports timely delivery while ensuring robust environmental, social, and technical assessments where required.

Table 5: Step 4 Project Progress

Milestone	Target	Delivered
Total GW4 Approvals	3	1

8.1.2 What happened in Step 4 in 2024?

The Arklow-Ballybeg-Carrickmines 110 kV Capacity Needs is a major project that will help alleviate thermal capacity issues in the entire South East of the country. A reinforcement in this region will play an important role in meeting the Government's renewable electricity target for 2030.

This project has now identified the Best Performing Option (BPO) for the new Ballybeg substation location, associated cable route alignment and overhead line solution. The BPO location is immediately adjacent to the existing substation, which avoids the requirement to cross over adjacent railway and motorway infrastructure. A planning lodgement is planned in 2025.

8.1.3 Step 4 Challenges and Opportunities

In Step 4, EirGrid focuses on identifying the location and route for the project infrastructure, such as station sites or circuit routes. This stage often presents significant challenges, particularly in densely populated or environmentally sensitive areas. Projects which cover diverse areas such as marine environments and urban settings have highlighted the complexity of routing infrastructure through such diverse environments, where technical feasibility, land availability, and community impact must all be carefully balanced. Delays can also arise from the need for detailed environmental assessments and the integration of expert knowledge into the planning process.

To overcome these challenges, EirGrid conducts in-depth local studies and environmental analyses to identify feasible and responsible siting and routing options. Engagement strategies and opportunities are tailored to each project's scale, using a mix of public forums, digital platforms, and targeted outreach to gather meaningful input. This inclusive and data-driven approach ensures that decisions are informed by both technical evidence and community perspectives, helping to deliver solutions that are practical, sustainable, and publicly supported.

9. The Six-Step Grid Development Process: Step 5

The planning process

The objective of Step 5 is to achieve the necessary statutory consent for a project; if no statutory consent is required, the decision underpinning this is documented appropriately. This includes the preparation of plans and particulars in respect of the project proposal that will be used in the statutory consents process (or in obtaining a confirmation or Declaration of Exempted Development where no statutory consent is required).

For projects requiring planning permission, EirGrid will lodge a planning application with the appropriate planning authority, either An Coimisiún Pleanála or the local planning authority. In certain cases, a project may receive an internal confirmation or a Declaration of Exempted Development (Section 5 Declaration) from the planning authority, negating the need for statutory consent. This also requires the preparation of plans and particulars for such projects.

Upon reaching Step 5 and the requirement for planning permission arises, EirGrid is legally obliged to publish the proposed project details through public notices in newspapers. These announcements provide guidance on how the public can present their submissions to the relevant planning authority. Additionally, we maintain and update this information on the EirGrid website[27].

The conclusion of this Step involves the receipt of a planning decision from the relevant authority or a confirmation or declaration of exempted development. When the planning application process ends, the planning authority will do one of the following:

- Grant permission, or
- Grant permission on the basis that EirGrid makes some changes to its application, or
- Refuse permission.

27 https://www.eirgrid.ie/

9.1.1 Step 5 Performance against Plan

In 2024, EirGrid targeted seven projects to progress through Step 5, of which five were achieved, as outlined below.

Two projects encountered issues and were not successful in the achievement of Step 5 during 2024. The Cushaling-Portlaoise 110 kV line refurbishment experienced complications related to gaining landowner consent for the planning application whilst the Arklow 220 kV Station Redevelopment project was impacted by land acquisition delays.

The target of seven projects reflects an assessment of specific project needs and the nature of Step 5, which involves securing statutory consent or confirming that such consent is not required. Depending on the scope and location of a project, planning applications may be required to be submitted to a number of different planning authorities for a single project. Some projects, such as certain uprates or works on existing infrastructure, may not explicitly pass through this step, if they do not require statutory consent or a declaration of exempted development.

Table 6: Step 5 Project Progress

Milestone	Target	Delivered
Total GW5 Approvals	7	5

9.1.2 What happened in Step 5 during 2024?

In 2024, 14 planning applications were lodged, with 5 final planning permissions granted and 44 Exempted Development declarations[28].

Most notably, a planning application was submitted to An Coimisiún Pleanála for the East Meath North Dublin project in March 2024, with responses to observations submitted in July 2024. Successful planning was received for this project in February 2025 by An Coimisiún Pleanála. This project will help transfer electricity from the East of Co. Meath to the North Dublin region which will accommodate the new demand planned for the East coast. The expected benefits of the projects that achieved planning consent in 2024 are outlined in the following sections.

East Meath North Dublin

This project will help transfer electricity to the eastern part of the country and distribute it within the network in East Meath and North Dublin, which is essential for supporting the integration of renewable energy and meeting growing demand. The project is essential to enable further development of renewable energy generation in line with Government policy to reach 2030 horizon objectives. This upgrade will strengthen the electricity grid in the east of Meath and the north of Dublin to improve the transfer of power across the existing transmission network.

28 Exempted developments are determined through assessment rather than targeted delivery.

Coolnabacky Portlaoise 110 kV Line Uprate

This project will help increase the capacity of the 110 kV line between Coolnabacky and Portlaoise, which is essential for supporting the integration of renewable energy and improving the security of supply in the region.

Athlone - Lanesboro 110 kV Circuit 1

This project will enhance the capacity of the 110 kV circuit between Athlone and Lanesboro, facilitating the transfer of electricity and supporting the integration of renewable energy sources in the area.

Barrymore Cahir Knockraha 110 kV Line Uprate

This project will increase the capacity of the 110 kV line between Barrymore, Cahir, and Knockraha, which is crucial for enabling further development of renewable energy generation and ensuring a stable power supply.

Great Island Kellis 220 kV Line Uprate

This project will increase the capacity of the 220 kV line between Great Island and Kellis, which is vital for facilitating the integration of renewable energy and improving the security of supply in the region.

9.1.3 Step 5 Challenges and Opportunities

Step 5 focuses on securing statutory consent for a project, a process that can be complex and time sensitive. Projects often face delays due to challenges such as land acquisition, securing landowner consent, and preparing comprehensive planning applications. These issues can impact project timelines, particularly when navigating legal and procedural requirements or responding to requests for further information from planning authorities. Public objections, appeals, and potential legal proceedings can also introduce uncertainty and extend the duration of the planning process.

To mitigate these challenges, EirGrid engages early with landowners and appoints experienced planning consultants to guide the preparation and submission of applications. Detailed plans and particulars are developed in line with statutory requirements, and public notices are issued to ensure transparency and encourage informed participation. By maintaining open communication with stakeholders and planning authorities, and by proactively managing risks related to land and consent, EirGrid works to streamline the planning process and keep projects on track.

10. The Six-Step Grid Development Process: Step 6

Construction, energisation and benefit sharing

In Step 6, EirGrid and ESB Networks agree a construction programme. ESB Networks has responsibility for efficiently and safely managing the delivery of these projects, including aspects such as procurement and construction. Projects are jointly monitored and refined as the project progresses. During Step 6, a project is under construction and depending on scope and complexity this can take approximately 1 to 5 years.

Outages are a crucial component to the delivery and energisation of projects in Step 6. Outages are required to complete system reinforcement, refurbishment, and customer connection projects. These outages are planned, prioritised, and delivered through the Transmission Outage Programme (TOP) on an annual basis. Transmission outages are a valuable and scarce resource therefore outage planning is a core activity for EirGrid, in collaboration with ESB Networks. This is discussed in more detail in Section 11.

10.1.1 Step 6 Performance against Plan

The first priority of Step 6 is for EirGrid and ESB Networks to sign a Project Agreement (PA). For 2024, EirGrid targeted forty Project Agreements with forty-three achieved[29], exceeding the 2024 target. This target of forty Project Agreements is informed by a constrained assessment of our portfolio.

Table 7: Step 6 - Project Agreement (PA) Progress

Milestone	Target	Delivered
Gateway 6 Approvals	40[30]	43

29 This includes one Temporary Emergency Generation Project.
30 The targets outlined reflect EirGrid's agreed business targets for the 2024 calendar year and are not derived from the PR5 submission to the CRU in 2019.

10.1.2 What happened in Step 6 in 2024?

In 2024, forty-three Project Agreements (PA) were concluded between EirGrid and ESB Networks. These represent a total forecast capex project cost of €1bn to be achieved between 2024 and 2031. The projects reaching PA include twenty-four customer connection projects, eleven system reinforcement projects, six asset refurbishment projects and two diversion projects.

The sections below include a summary of 2024's progress regarding Project Agreements (PA) signed by EirGrid and ESB Networks, projects that achieved energisation and an update on the progression of major projects in Step 6. Further updates on other major projects are available on EirGrid's website[31].

10.1.3 Energisation Performance against Plan

For 2024, the TSO and TAO targeted 29 Energisations and achieved 22. Project energisations (EIs) remain a challenge due to system and resource constraints. To improve this, the TSO and TAO are advancing a joint outage transformation programme to address the underlying issues and improve the delivery performance in this area.

Table 8: Energisation Progress

Milestone	Target	Delivered
Energisations	29[32]	22

The Transmission Outage Programme (TOP) is published in February each year. In 2024, 87.9%of the TOP was delivered representing a strong outturn performance for the calendar year. This includes an ex-post-delivery percentage which accounts for third party delays and includes additional works included over and above the baseline TOP24 programme. 73% of the baseline TOP24 programme was delivered in 2024.

Table 9: Step 6 - TOP24 Outturn Summary

Category	Weeks	%
TOP24 Baseline	810	
TOP24 Completed	591	73%
Total Adjustments		14.9%
TOP24 Final Outturn Performance		**87.9%**

31 https://www.eirgrid.ie/community/projects-in-your-area

32 The target outlined reflects EirGrid's agreed business target for the 2024 calendar year as detailed in the 2024 System Operator Grid Development Report and is not derived from the PR5 submission to the CRU in 2019.

A summary of the TOP performance for 2021 – 2024 can be found in Figure 13 below, showing the Ex-Post Adjustment by year as well as the 80% CRU Incentive Target for strong outage performance.

TOP24 was issued in Q3 2023, six months earlier than in previous years, providing the TAO with more time and certainty for project scheduling and the mobilisation of resources for TOP24 delivery. Issuing a transmission outage programme earlier in the annual process presents advantages to TAO but obvious challenges in operating outage change management procedures for both TAO and TSO over a longer pre-season period, sometimes requiring the need to incorporate unavoidable changes to the plan in updated iterations. The TAO and TSO continue to monitor the impacts associated with issuing a transmission programme in Q3 of the prior year. A decision was taken during 2024 to continue the approach adopted in 2023 and to issue the TOP25 transmission outage programme in Q3 2024.

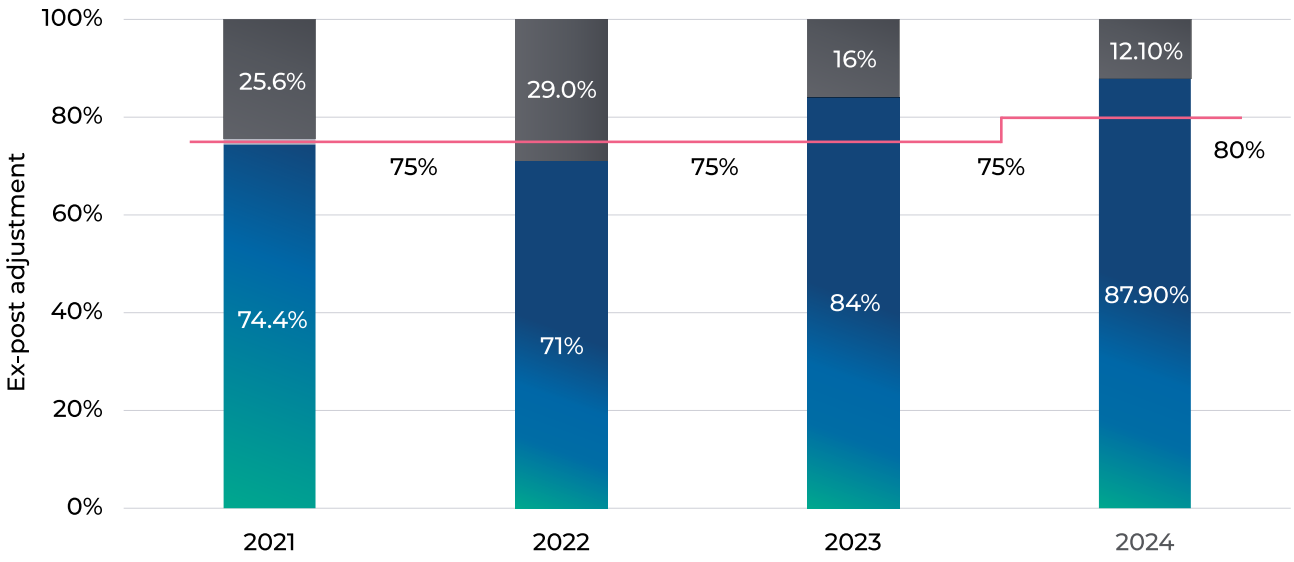


Figure 13: 2021-2024 Ex-post Adjustment of Outage Performance

10.1.4 Projects Energised and/or completed in 2024

In 2024, twenty-nine projects were targeted to be energised. By the end of 2024 twenty-two projects were energised representing €258m total capital spend over the lifecycle of the projects. These projects range from Grid Reinforcement Projects required on the transmission system to the connection of renewable and thermal generation along with battery storage and additional demand load as mentioned in the System Operator Grid Development Report[33] shared with CRU in April 2024.

The completion and connection of renewable generation projects is vital to achieving the 2030 climate action plan targets. There was a strong performance in 2024 in the delivery of these projects, including the energisation of the following renewable generation projects:

- Two Wind Farms providing over 161 MWs of renewable generation,
- Two Solar Farms providing 127 additional MWs of renewable generation.

During 2024, two new Battery Energy Storage System (BESS) technology projects totalling 184 MW were completed. BESS technologies facilitate renewable energy on the grid as it supports system reserve provision, capacity adequacy and congestion management. The battery technology captures the electrical energy at one time for it to be used at a later time.

The following BESS connections were energised in 2024:

- Aghada BESS 02 (ESB G&T) – February 2024.
- Kilcumber 110 kV Station (Cloncreen Battery Phase 2) – July 2024.

In addition to the renewable generation and BESS projects, the following projects were also energised in 2024:

- Greenlink Interconnector, providing capacity of 504 MW between Ireland and UK. See section 2.4 for further details.
- Four system reinforcement projects, including a 220 kV line uprate, a 110 kV station reconfiguration and busbar uprate, 110 kV line uprate, and the installation of one new ±100 Mvar STATCOM,
- Two asset refurbishments, including one circuit breaker replacement and one circuit alteration,
- One diversion project,
- Two demand customer connections totalling over 48 MVA MIC.
- 5 TEG projects were completed in 2024.

€258m

total capital spend over the lifecycle of these projects

33 System-Operator-Grid-Development-Report-per-CAP-24-EL-24-05-April-TSO.pdf

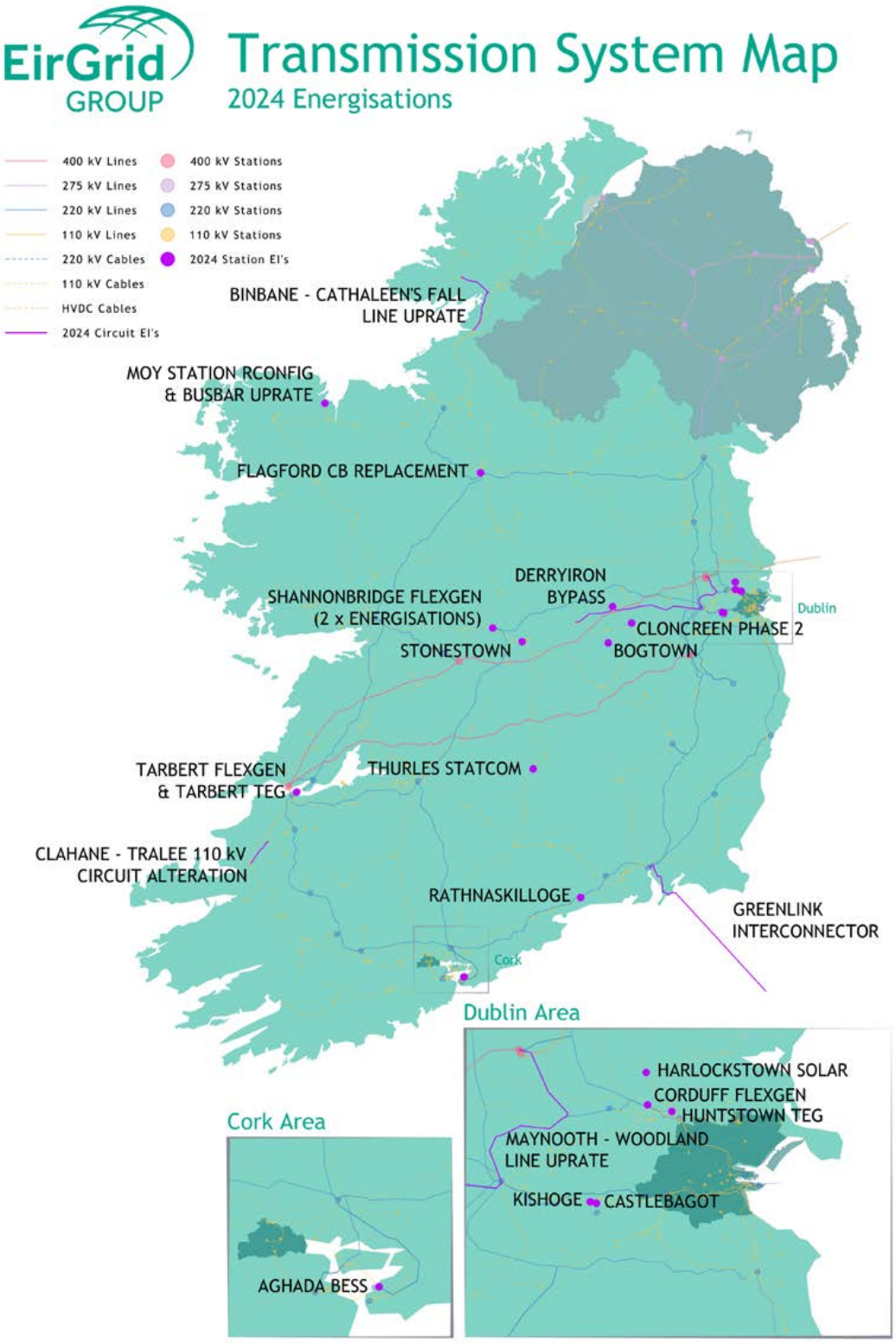


Figure 14: All Ireland Transmission System Map – 2024 Energisations

10.1.5 Step 6 Challenges and Opportunities

Step 6 marks the transition from planning to construction, where EirGrid and ESB Networks work together to deliver the project on the ground. This phase can face significant challenges, including the coordination of complex construction schedules, the availability of skilled resources, and the need to secure and manage critical outages on the transmission system. Delays in procurement, unforeseen site conditions, changes to customer programmes and the long lead times for specialised materials and equipment can also impact delivery timelines. Additionally, the scale and duration of construction activities can present logistical and community engagement challenges.

There was a shortfall of 7 project final energisations planned for 2024. The reasons are complex and multifaceted. Much of the work will have progressed or been completed in 2024 but the final outage or energisation remains outstanding. For example, the Timahoe 110 kV Station was successfully connected in 2024 and is capable of exporting 70 MW of renewable generation, however, a final project energisation outage is still required to complete the remainder of the project scope as there is an interdependency with another project and is deferred to 2025. The final energisation of other projects could not take place for various reasons including; planning and procurement conditions, outage constraints, customer driven delays, and brown field site complexities.

To mitigate risks and avoid unnecessary delays to project energisations, EirGrid and ESB Networks agree a detailed construction programme and enter into a formal Project Agreement. Projects are closely monitored and refined throughout delivery, with a strong focus on collaboration and proactive issue resolution.

Outage planning is carefully coordinated through the Transmission Outage Programme to ensure efficient use of limited system outage windows. This structured and collaborative approach helps ensure that projects are delivered safely, efficiently, and in line with national energy infrastructure needs.

In 2024, the Joint Outage Transformation Programme (JOTP) facilitated early engagement between TAO and TSO on 20 projects to optimise outage availability and utilisation. This process, which has transitioned some new processes into business as usual, allows for comprehensive information exchange and early consideration of outage implications. As a result, projects move more quickly through development, reducing delivery timescales and contributing to climate change targets. The JOTP is also developing processes to engage with customers to develop and verify detailed project plans to facilitate entry into the annual TOP in a timely manner.

11. Prioritisation and Delivery

A major part of the delivery and completion of each project involves the transmission network outages required to complete the construction within substations or on linked circuits. Outages required for maintenance work must also be included.

There are a number of steps in the annual outage planning process, including:

- Identification of outage requirements, including the sequence of work, expected timing, duration and the plant required for these outages,
- Assessment of readiness for outages in a given year; and the sequences of work, expected timing, duration and plant required for these outages,
- Consultation with impacted stakeholders and the Distribution System Operator (DSO), where appropriate, and,
- Prioritisation of works to maximise the delivery of projects within the annual outage programme.

11.1 Programme Prioritisation Approach

The sequencing and delivery of electricity transmission infrastructure is very complex as it involves incorporating multiple interacting outages, and where it is not possible to accommodate all proposed infrastructure works in the period requested, prioritisation decisions may be required. EirGrid's Outage Prioritisation Guidance Document is published on our website[34].

The objective of the transmission outage planning process is to maximise the amount of outage related work that can take place to reinforce the system, connect customers and ensure the required level of maintenance of the transmission system while ensuring a safe and secure system. This process must be completed in accordance with the Operating Security Standards (OSS). All outages are scheduled on the basis that the OSS are not breached for any outage or combination of outages.

34 https://cms.eirgrid.ie/sites/default/files/publications/EirGrid-Outage-Prioritisation-Guidance-Document-Final.pdf

Where the need to prioritise work does arise, the following guide is used by EirGrid in determining which works should be prioritised. EirGrid has formed this guide by objectively assessing the prioritisation of outages in a proportionate and reasonable manner and, importantly, in a manner that protects the security of the system.

When deciding on outage prioritisation, EirGrid will consider and seek to balance its licence and statutory obligations with customers' requirements, cognisant of security of supply issues, the need to transform the power system, our Climate Action Plan targets, and other relevant factors. Priority is given to works that align with delivering on EirGrid's Group Strategy to transform the power system by 2030 per the Table 10 below[35].

Table 10: Outage priority

	Project/Project activity categories
1	Works to ensure safety of People, Plant, Equipment & Operating Security Standards (OSS), including Priority Maintenance
2	Works to connect new useable generation greater than 50 MW, which do not fall within the category above
3	New generation, refurbishments, or general backbone transmission reinforcements of existing assets, not associated with the categories above
4	Works to connect new demand
5	Other (diversions, etc.)

35 Table as per EirGrid-Outage-Prioritisation-Guidance-Document-Final.pdf – ATR projects are no longer a specific category of project considered in the prioritisation hierarchy. This follows the conclusion of the Firm Access methodology as requested by the SEM committee and CRU in the SEM Committee Decision Paper SEM-23-004.

11.2 Transmission Outage Transformation Programme

In 2024, the TSO and TAO made significant progress in outage management to support Ireland's 2030 goals. A key initial milestone was the early issuance of the TOP24 transmission outage programme in Q3 2023, six months ahead of previous cycles, enabling improved project scheduling and resource mobilization. This approach was successfully repeated for TOP25, issued on 21 September 2024, and is expected to continue for TOP26.

Early transmission outage programme issuance enhances planning certainty but requires more robust change management over an extended pre-season. TSO and TAO continue to refine this process, balancing flexibility with system security and delivery efficiency. These efforts are part of a broader Joint Outage Transformation Programme, which includes multiple coordinated initiatives such as enhanced system studies, dynamic re-forecasting, and outage bundling. Collectively, these are delivering year-on-year improvements in outage performance and delivery outcomes.

A notable innovation under trial is the Winter Outage Plan, which extends the traditional 40-week outage season by an additional 10 weeks. This pilot has already contributed to increased work completion in the TOP24 cycle and will be formally evaluated in the 2025 Joint TAO/TSO Incentive Performance Report.

Further information on the progress of individual interventions in the Joint Outage Transformation Programme during 2024 can be found in the 2024 Transmission Annual Performance Report.

11.3 Early Engagement with ESB Networks, Industry, & Stakeholders

In 2024, EirGrid and ESB Networks deepened collaboration through the JOTP, introducing early-stage engagement across the project lifecycle. This proactive approach enabled more informed planning, optimised resource allocation, and improved outage integration.

Early engagement was applied to 20 projects: 11 completed, 7 ongoing, and 2 in initiation. A new standard process was also adopted for pipeline and customer-led projects, involving TAO teams ahead of the traditional Committed Project Parameters (CPP) phase. This shift provided earlier insights into construction feasibility, outage planning, procurement, and site investigations.

Key project outcomes include:

- **North Connacht 110kV:** Reduced number of joint bays and length of proposed in-road trenching, streamlining construction.
- **Kildare–Meath:** Early ground investigations saved ~9 months and minimised environmental impact.
- **East Meath/North Dublin:** Early technology discussions led to cost and time savings.
- **Woodland 400kV Substation:** Consolidated five projects into one, accelerating delivery.
- **Belcamp 220kV:** Developed a future-ready high-voltage cable corridor.

These results demonstrate how early engagement is driving measurable improvements in delivery timelines, cost efficiency, and environmental performance. EirGrid will continue to scale this approach to enhance infrastructure planning and execution.

11.4 Planning and Environmental Compliance

As outlined in Step 5, Section 9 of this report, EirGrid consults all stakeholders and relevant agencies in the planning application process. On successful grant of planning, ESB Networks teams undertake strict measures via project management procedures to comply with and discharge all planning and environmental conditions associated with the network development in a timely and effective manner during the project's pre-construction and construction phases. Construction access is managed in consultation with all relevant authorities and landowners in compliance with the agreed access arrangements. Disruption during the construction phases is kept to an minimum and full reinstatement is arranged in compliance with the access agreements and fair compensation is negotiated when necessary.

For customer related projects, effective three-way communication is maintained between EirGrid, the customer and ESB Networks to ensure that the project timelines and detailed programmes are aligned to ensure optimal delivery dates and to ensure availability and utilisation of outage dates in the annual TOP.

12. Climate Change Adaptation

During 2024, EirGrid continued to build on its commitments to delivering the actions outlined in the Climate Change Adaptation Plan (CCAP) which include awareness and consideration in planning and design, identification of risks and areas vulnerable to impacts of climate change, and identification of Adaptation measures.

EirGrid, through a multi-faceted approach including climate resilience studies, grid infrastructure assessments, technology upgrades and stakeholder collaboration, has identified the assets most vulnerable to climate change and developed targeted plans to enhance resilience and mitigate potential climate change issues. The subsequent identified projects to enhance climate resilience are now underway with implementation expected by the end of 2028 (subject to planning approval).

Climate adaptation works in the following substations are currently progressing under the umbrella project CP1300:

- Dungarvan 110 kV Substation
- Flagford 220 kV Substation
- Marina 110 kV Substation
- Shannonbridge 220 kV Substation
- Tarbert 220 kV Substation
- Dunstown-Moneypoint 400 kV line

Further assessments were carried out across these six identified sites, which led to a refined focus on four priority locations. Marina 110 kV Substation and the Dunstown–Moneypoint 400 kV line were evaluated in more detail, with additional monitoring solutions recommended for the 400 kV overhead line. As a result, the scope of the project will now concentrate solely on substation works going forward. EirGrid is in the process of finalising the best performing option (BPO) for all these sites. Additionally, a tender process was initiated during 2024 to appoint a lead consultant responsible for developing the engineering designs required to obtain planning consents for the proposed adaptation measures.

In 2023, EirGrid embarked on a series of citizen roadshows. These roadshows are a shared event between EirGrid, ESB Networks and SEAI. These free events continued during 2024, and their aim was to provide information as to how EirGrid plans to future-proof the electricity grid, how ESB Networks supports microgeneration, mini-generation schemes and initiatives, and how SEAI administers retrofitting grants and supports both sustainable energy communities and businesses. The events included a range of local exhibitors to answer queries, including local contractors, local community supports and energy advice. To date 23 roadshows have been held across the country and we will continue to engage with the public into the future.

Engaging with DCEE, industry working groups and actively participating in the development of the Electricity and Gas Sectoral Adaptation Plan ensures that EirGrid aligns our adaptation measures with national objectives for climate change. Engagement in this manner facilitates the exchange of best practices, technical expertise and emerging research which enables informed decision-making and sector wide alignment on adaptation strategies.EirGrid is seeking to carry out further research on the transmission system as part of the submission to CRU for Price Review 6. This research will look at the impacts of higher temperatures caused by climate change on the transmission system.

The identification of climate change adaptation measures supports facilitating a secure low carbon future by ensuring that the infrastructure needed to provide this will contribute to a reduced risk of damage. EirGrid will continue to carry out such assessments to progressively identify and implement safeguards to the network and transmission system.

13. Stakeholder Engagement and Community Benefit

EirGrid and ESB Networks are committed to stakeholder and public engagement. Through working together with stakeholders, customers, industry, the public and local communities, we make better decisions.

We are now in the fifth year of EirGrid's 2020–25 corporate strategy that was launched in September 2019. Stakeholder engagement is a foundational element to this strategy and every year we continue to emphasise its importance through our expanded interactions with a diverse group of stakeholders. Our commitment is not only to maintain engagement but to continuously seek out and adopt innovative methods that enhance these interactions. Our aim is to achieve world class standards and to deliver better outcomes. To realise the ambitious changes outlined in our strategy, we recognise the need to significantly broaden and intensify our stakeholder engagement efforts.

Throughout 2024, EirGrid commenced public engagement on a number of critical infrastructure projects, including our first public consultation on the Powering Up Offshore - South Coast project and the Fingal to East Meath Grid Reinforcement Project. We also continued to progress engagement on a number of ongoing projects, such as Powering Up Dublin, where we launched an extensive information campaign to share details about the three Best Performing Options (BPOs) for critical cable routes in Dublin and our plans for new Transmission substations in the central Dublin area. These campaigns marked significant milestones in progressing our programme of infrastructure projects, ensuring transparency and meaningful engagement with local communities and stakeholders.

Further details regarding EirGrid and ESB's Stakeholder Engagement activities are included in the Annual Performance Report 2024.

Engagement Approach

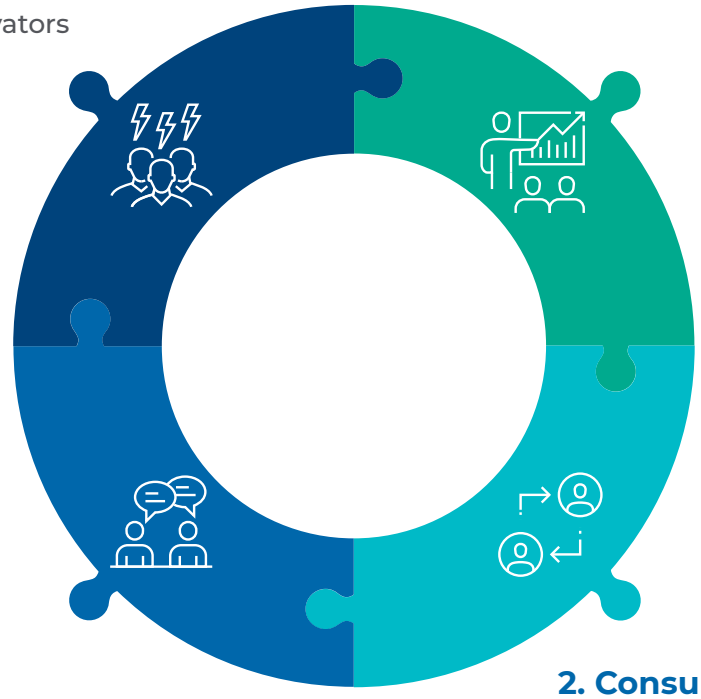
EirGrid uses a consistent, six-step public engagement process to explore options and make decisions. The level of stakeholder engagement is dependent on the type of project. Large infrastructure projects such as the Dublin Programme, North Connacht, and the Interconnector projects involve a much wider range of stakeholders with larger numbers of landowners and communities affected by the proposed development. Supporting this approach is our Public Engagement Strategy[36]. Although decision-making may be influenced by regulatory and various external factors, we remain committed to fostering an environment of collaboration. We actively seek and support joint efforts with our stakeholders to innovate and devise solutions collectively.

4. Collaborate

- Partnering with community organisations and local authorities
- Community benefit funds
- Energy citizen roadshows
- Young social innovators

1. Inform

- Accessible information
- Public awareness campaigns
- Media campaigns



3. Engage

- Industry workshops
- Public workshops
- Community forums
- Business forums
- Infrastructure forums
- Open days

2. Consult

- Formal consultation
- Surveys
- Focus groups
- Events

Figure 15: Stakeholder Engagement Approach

36 https://cms.eirgrid.ie/sites/default/files/publications/EirGrid-Public-Engagement-Strategy.pdf

Throughout 2024, EirGrid did the following:

- Proactively engaged with prospective customers exploring transmission system connections, offering tailored guidance on system capabilities, connection options, policy frameworks, and the end-to-end connection process to support well-informed decision-making.
- Delivered clear and accessible information through a range of channels, including published materials, customer clinics, and dedicated one-to-one engagements, ensuring transparency and ease of understanding.
- Assigned dedicated points of contact for each customer throughout the connection journey, ensuring timely communication, consistent updates, and prompt resolution of issues.
- Processed connection applications in line with regulatory requirements and applicable policies, maintaining a high standard of service and accountability.
- Maintained regular engagement with key industry bodies, sharing updates, gathering insights, and collaboratively identifying and addressing sector-wide challenges.
- Collaborated closely with ESB Networks to ensure the efficient and timely delivery of customer grid connections, aligning efforts to meet shared objectives.

Stakeholder, public and landowner engagement is a particularly significant element of delivering the Celtic Interconnector project. The Celtic Interconnector Community Benefit Fund was established to recognise the importance of local communities who facilitate the development of the electricity grid and will benefit groups and projects in the East Cork area. In line with our Community Benefit Policy[37] the first phase of the Celtic Interconnector Community Benefit Fund was issued in 2024, with €838,987 invested in communities hosting this critical infrastructure in East Cork, and a further €1,561,013, which will be made available throughout the project life cycle.

In response to the increased need for infrastructure development off the Irish coast, EirGrid employed its first Fisheries Liaison Officer in 2024. This has allowed for increased engagement with fishers, mariners and industry representatives, alongside continued engagement with these bodies through the Seafood/Offshore Renewable Energy (ORE) working group. This has facilitated continued communication and trust between the fishing industry and EirGrid, as we develop infrastructure off the south coast.

37 cms.eirgrid.ie/sites/default/files/publications/EirGrid-Community-Benefit-Policy-Brochure June 2023.pdf

We have continued the rollout of our Energy Citizens Roadshow series, in partnership with ESB Networks and the SEAI, hosting five of these events across the country throughout the year. To continue our engagement with industry players, we hosted regular meetings of the SOEF Advisory Council and as well as frequent industry forums on the roadmap. We also reached a key partnership agreement with the Irish Farmers Association (IFA) and ESB Networks and signed a Memorandum of Understanding (MOU) for our collaboration.

We continue to engage with large energy users. EirGrid acknowledges that this is an important sector for the Irish economy and is committed to working with developers and CRU to help deliver the "Government Statement on the Role of Data Centres in Ireland's Enterprise Strategy". Published in July 2022[38], the policy seeks to enable the "twin transitions" of digitalisation and decarbonisation of our economy and society. EirGrid's approach to engagement is tailored to the project or initiative. A bespoke engagement plan is used for each key project or initiative, identifying the channels we will use to provide information to the stakeholders. This can include emails to customers and stakeholders, project brochures and updates, targeted social media content, advertising in local and national press, letters to landowners and statutory bodies, providing spokespeople for discussions on public radio, providing phonelines, and conducting webinars. For grid development projects, it also includes promotion in public locations and open days in the local area where members of the public can meet the experts and have their queries addressed.

Consultation tools and approaches are constantly evolving as are stakeholders' expectations. Our stakeholder engagement is geared towards understanding and responding to learnings and concerns, highlighting impacts and opportunities we were not previously aware of, and ensuring we deliver the best possible service with the least disruption.

38 https://enterprise.gov.ie/en/publications/publication-files/government-statement-on-the-role-of-data-centres-in-irelands-enterprise-strategy.pdf

13.1 Landowner Engagement

Throughout 2024, our landowner team actively engaged with landowners across a wide range of transmission infrastructure projects ranging from works on existing lines to proposals for new circuits. Approximately 2,200 landowners were engaged with by our team throughout 2024. For those landowners who host existing overhead lines which have been identified for refurbishment and/or uprating, we explain the works required, anticipated timeframes and seek access to carry out survey works on the lands to help inform the extent of works required.

For new build projects, we engage with potential landowners at the earliest stage possible. For example, on new circuits, where we have a number of potential options proposed, early landowner engagement and feedback forms an important part of the overall consideration in the evaluation of options. This approach ensures that the specific local knowledge of the land and any associated constraints can be understood ahead of any further decision making. The landowner team are also involved in discussing proposals with landowners in relation to requirements for the development of new substations or the enhancement of existing stations.

13.2 Dublin Infrastructure Forum

The Dublin Infrastructure Forum was established by EirGrid, with an independent Chair, to enable effective collaboration with ESB Networks as DSO, other state-owned utilities, transport providers and local authorities. The objective of the Forum is to coordinate the planning, development, implementation, and monitoring of relevant projects across the programme of works being carried out to strengthen key electricity infrastructure in Dublin and the surrounding areas. It is made up of the following members: Dublin Airport Authority, Dublin City Council, Dublin Port Company, Dún Laoghaire-Rathdown County Council, EirGrid, ESB Networks, Fingal County Council, Gas Networks Ireland, Irish Rail, Irish Water, National Transport Authority, Transport Infrastructure Ireland and Waterways Ireland.

Throughout 2024, EirGrid, as part of the Dublin Infrastructure Forum continued to look for opportunities for collaboration across other infrastructure developers which will aid ESB Networks in the later stages of the Powering Up Dublin Programme as they will undertake the associated construction work. Our participation in the Dublin Infrastructure Forum and associated technical working groups has been beneficial in terms of collaboration with other utility operators, such as gas and water, and other State bodies, such as TII and relevant local authorities. Towards the end of the year, we commenced an intensive period of engagement with community groups, schools, and individuals within the Powering Up Dublin engagement zones, to gather local insights to shape the best performing route options selection in the next financial year.

13.3 Benefits Sharing

As EirGrid undertakes the development and expansion of the transmission grid, we acknowledge the potential impacts on nearby communities. These effects may range from visual changes to the environment to temporary disruptions during construction, as well as the necessity for land access to facilitate project delivery. Despite these challenges, the enduring advantages of a reliable, safe, and eco-friendly energy supply are significant. Our commitment is to work in harmony with communities and stakeholders to reduce inconvenience and enhance benefits. In 2024, EirGrid invested €992,437 in community groups and voluntary organisations in Laois, Kilkenny and East Cork, in line with projects advancing in these areas.

EirGrid's Community Benefit Policy[39] is designed to leave a lasting, positive impact on communities that support grid infrastructure projects, fostering enduring partnerships. This policy comes into effect once a project receives planning approval, establishing a scheme that reflects the project's magnitude. In collaboration with the Community Forum, we ensure that the scheme is crafted with local insight, by the community, for the community. The strategy is built upon three foundational pillars: biodiversity, community, and sustainability, and is implemented in three phases: at the start of construction, during cabling or stringing, and upon project completion. The scheme offers grants to local groups, aiming to complement other funding sources and promote cooperative efforts.

Throughout 2024, the Community Benefit Strategy for the North Connacht project was developed by the Independent Fund Administrator, in close collaboration with the Community Forum, ensuring that the principles surrounding the allocation of this funding have the communities hosting this infrastructure at its centre. More information about EirGrid's Community Benefit policy and fund is available on our website.

At the core of EirGrid's ethos is our dedication to community-centric engagement. We strive to minimise disruptions and maximise benefits for those affected by our projects. The Community Benefit Fund scheme is a testament to this, empowering Community Forums to direct funds towards local improvement and wellness projects. This initiative not only supports the physical and mental well-being of residents but also allows us to contribute positively to the communities that accommodate our operations.

39 https://cms.eirgrid.ie/sites/default/files/publications/EirGrid-Community-Benefit-Policy-Brochure%20June%202023.pdf

14. Acronyms

ALOs	Agricultural Liaison Officers
ATR	Associated Transmission Reinforcement
BESS	Battery Energy Storage System
BPO	Best Performing Option
BPRO	Best Performing Route Option
BSP	Bulk Supply Point
CA	EirGrid Capital Approval
CAPEX	Capital Expenditure
CCAP	Climate Change Adaption Plan
CLOs	Community Liaison Officers
CMMS	Computerized Maintenance Management System
CRU	Commission for Regulation of Utilities
DCEE	Department of Climate, Energy and the Environment
DLR	Dynamic Line Rating
DSO	Distribution System Operator
DTS	Distributed Temperature Sensing
FAQ	Firm Access Quantity
GW	TSO Six-Step Framework Gateways
GW	Gigawatt
HV	High Voltage
ICT	Information, Communications and Technology
IFA	Irish Farmers Association
IPD	Investment Planning and Delivery
JOTP	Joint Outage Transformation Programme
KM	Kilometre
kV	Kilovolt
MEC	Maximum Export Capacity
MIC	Maximum Import Capacity
MOU	Memorandum of Understanding
MVA	Megavolt Amperes
Mvar	Megavolt Amperes Reactive
MW	Megawatt
MYDP	Multi-Year Delivery Programme
NDP	Network Delivery Portfolio
OCLM	Online Condition Monitoring
OSS	Operating Security Standards
PA	Project Agreement
PFC	Power Flow Controller
PR4	Price Review 4 (2016 – 2020)
PR5	Price Review 5 (2021 – 2025)
PR6	Price Review 6 (2026 – 2030)
RE	Renewable Energy
RES	Renewable Energy Supply
SCFF	Self-Contained Fluid Filled
SEAI	Sustainable Energy Authority of Ireland
SME	Subject matter expert
SNA	System Needs Assessment
SOEF	Shaping Our Electricity Future
STATCOM	Static Synchronous Compensator
TAO	Transmission Asset Owner
TEG	Temporary Emergency Generation
TES	Tomorrow's Energy Scenarios
TII	Transport Infrastructure Ireland
TOP	Transmission Outage Programme
TSO	Transmission System Operator
TSSPS	Transmission System Security and Planning Standards
TSO	Transmission System Operator
TSSPS	Transmission System Security and Planning Standards

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