

Transmission Development Plan 2024

Consultation Report

July 2024

Contents

1. Introduction	4
1.1. Description of consultation process	4
1.2. Purpose of the Transmission Development Plan.....	4
1.3. Updates to the TDP following consultation	5
2. Consultation Responses	6
2.1. Overall TDP consultation	6
2.2. Key Feedback	6
2.2.1. Grid development and Constraints	6
2.2.2. Project information and publication timeline	8
2.2.3. Co-optimization of electricity and gas networks	9
2.2.4. Renewable hubs.....	9
2.3. Consultation questions.....	10
2.3.1. Question 1	10
2.3.2. Question 2	11
2.3.3. Question 3	12
2.3.4. Question 4	12
2.3.5. Question 5	13
2.3.6. Question 6	14
2.3.7. Question 7	14
2.3.8. Question 8	15
2.3.9. Question 9	18
2.3.10. Question 10.....	18
2.3.11. Question 11	19
Abbreviations	21
Glossary	22

Disclaimer

While all reasonable care has been taken to prepare this document, we can make no guarantee to the quality, accuracy, and completeness of the information herein. We do not accept responsibility for any loss associated with the use of this information. Use of this document and the information it contains is at the user's own risk.

Information in this document does not amount to a recommendation as regards to any possible investment. Before taking a business decision based on the content of this document, we advise that interested parties seek separate and independent opinion in relation to the matters covered by this document.

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

COPYRIGHT © EirGrid

All rights reserved. No part of this work may be modified or reproduced or copied in any form or by means - graphic, electronic, or mechanical, including photocopying, recording, taping or information and retrieval system, or used for any purpose other than its designated purpose, without the written permission of EirGrid

1. Introduction

As the Transmission System Operator (TSO) for Ireland, EirGrid is responsible for the development of the electricity transmission network. We are obliged to develop a safe, secure, reliable, economic, and efficient transmission network to meet all reasonable demands for electricity, in accordance with our license conditions.

We plan the development of the electricity transmission network taking account of the long-term electricity system needs and the relative performance of various development options.

We are required by both statutory¹ and licence² obligations to produce a Transmission Development Plan (TDP). Under licence, we are currently required to produce a TDP at least annually. Statutory Instrument (SI) 227/2022 published in May 2022 requires the TDP be revised at least every two years and as such, EirGrid is awaiting direction from CRU as to when the next iteration of the TDP will be published. Before the TDP can be approved, the Commission for Regulation of Utilities (CRU) is obliged to hold a public consultation on the draft TDP³. Based on the responses to the consultation we update the draft TDP where necessary and submit a consultation report alongside the final TDP for approval to the CRU.

This document is the consultation report on the TDP 2024-2033 (TDP 2024) consultation. It describes the consultation process and provides an overview of the submissions received, our responses to the issues raised, and the changes that we have made to the draft TDP 2024 in response to the feedback received.

1.1. Description of consultation process

The CRU is responsible for holding the public consultation on the draft TDP. The draft TDP 2024 was published for consultation on the CRU website on 25 April 2024 and the consultation closed on 29 May 2024.

A notification of the CRU consultation was sent via email to the stakeholders subscribed to CRU info@cru.ie mailing list.

1.2. Purpose of the Transmission Development Plan

National and European strategic energy policy objectives set the context for investment in the Irish electricity transmission network. This helps ensure security of electricity supply, competitiveness of the national economy, and long-term sustainability of the electricity supply in the country. To achieve these objectives, it is necessary to invest in the development and maintenance of the electricity transmission network.

The primary objective of the TDP is to describe the transmission network reinforcements planned for the next ten years. The TDP explains:

- Our approach to network development.
- The policy and technical drivers for investment.
- The needs of the transmission network.
- The planned network developments with expected project completion dates.

In so doing, the TDP raises awareness of planned network reinforcements. It is important to note that the TDP is neither a strategy-forming nor a policy-forming document.

¹ Statutory Instrument No. 445 of 2000 (Paragraph 8), Statutory Instrument No. 227 of 2022 and EU Directive 2009/72 (Article 22)

² EirGrid Transmission System Operator Licence (Condition 8)

³ European Directive 2009/72 (Article 22)

1.3. Updates to the TDP following consultation

Following the consultation comments, the following changes have been made to the TDP draft document:

- A new section (1.4.8) titled “Interconnection to other Jurisdictions” has been added to the TDP to provide more details on interconnectors, EirGrid’s interconnection activity, and technologies used. EirGrid also uses the opportunity to welcome discussion with project developers regarding interconnection projects and technologies utilized in developing them.
- Regarding planning assumptions, a note on the assumptions including the utilization of demand side units and energy storage systems for congestion management in advance of system expansion has been added to section 1.4.6 on Shaping Our Electricity Future.
- A paragraph has been added to section 1.4.5 on the Climate Action Plan stating how the 80% RES-E 2030 target will be achieved through an ‘all system approach’ basis.
- Subject to comments received, Table 1.1, Tables A-5 - A-8 and tables included in Chapters 5 and 6 after regions’ project description have been updated to resolve data mismatch and errors.
- Some comments received on the TDP draft such as those in relation to co-optimization of the electricity and gas networks, the development of renewable hubs, and proposals for digital enhancement to the Network Delivery Portfolio (NDP) are currently in the process for development and have been alluded to in this consultation report.
- Finally, there are some market and operational comments received but they are out of scope of the TDP and have not been addressed in the consultation report.

2. Consultation Responses

The CRU received eleven submissions in response to the consultation. These were from:

- Bord Gais Energy
- EDF Renewables
- ESB Generation and Trading
- Flex Power Solutions
- FuturEnergy Ireland
- Orsted
- RWE
- Silvermines Hydro
- Southeast Energy Agency
- Western Development Commission and
- Wind Energy Ireland

EirGrid takes a consultative approach to grid development, and we place stakeholders at the heart of all decisions taken in relation to how we develop the grid. We would like to thank all parties for their responses. All responses have been reviewed and considered, and where possible, have been incorporated into the final TDP 2024-2033. In addition, relevant feedback that was not incorporated in the current TDP has been noted and will be considered for future TDPs. In the following sections we summarise and respond to the submissions.

2.1. Overall TDP consultation

All respondents welcomed the opportunity provided by the CRU's consultation process to comment on the plan. EirGrid is pleased that there is support for the consultative approach taken to the development of the TDP and we will continue to work with our stakeholders on the development of the TDP.

As the respondents have included additional comments to the questionnaire, the comments have been separated in the following two sections: 2.2 Key Feedback and 2.3 Consultation questions.

2.2. Key Feedback

2.2.1. Grid development and Constraints

Comments received

Respondents are concerned that the existing grid and the upgrades proposed do not adequately support delivery of the Government's targets for 2030. It has been commented that those targets, outlined in the Climate Action Plan are unlikely to be met without a parallel development of the transmission system to accommodate the expected renewable volumes. Furthermore, absence of projects with energisation dates beyond 2030 was pointed out as concerning.

In addition to network development, respondents have also argued that when coupled with increased electricity demand, the existing transmission and distribution systems were not designed for the increased

levels of power flows that are expected over the next few years, expressing concern that, because of this, level of dispatch down will continue to be a problem for renewable generation.

Comments include:

- Major investment in the grid has been recommended to meet 2030 targets and beyond. It was mentioned that it is critical for EirGrid to reinforce and upgrade the grid infrastructure now, to accommodate the projected increase in future demand and to strive for a zero-carbon system.
- More transparency and detailed explanation linking TESSNA and SOEF to the TDP is required to better understand the planning methodology undertaken in developing the grid.
- TDP appears to be taking a reactive rather than proactive approach to planning future network investment, by focusing on 2030 government targets and with little evidence of long-term planning. This creates the risk that the TSO plan could result in underinvestment in the network, leading to further restrictions or barriers to new and secure connections.
- There is no clear indication in this TDP that longer term (2050) targets are acknowledged in the 10-year planning process.
- The TES sets the underpinning basis of need for future investments, but the TDP does not outline how these scenarios have influenced the emergent outputs.
- An overarching comment is in relation to the dispatch down stated in ECP 2.3 constraints reports. How it affects transmission planning and further improvement in network development should be included in the TDP.
- Address the deteriorating constraints situation in the Midlands, as the situation is expected to worsen in the coming decades. It was mentioned that solutions must come now, as there will be significant renewable energy connections in the region to meet CAP targets.

Our response

The TDP, in section 1.4.2 describes the long-term scenario planning process that starts with Tomorrows Energy Scenarios (TES). TES23 published early in 2024 contains scenarios that align with non-binding government targets for renewable generation and electrification.

EirGrid's role is to develop a secure, reliable, and sustainable electricity transmission system. EirGrid continuously endeavours to ensure increased reduction in carbon emissions and an enhanced security of supply. EirGrid recognises that to meet the 80% RES-E by 2030 target, significant change and investment is needed on the entire power system and is committed to facilitate Ireland meeting the 80% RES-E target as set out in the Climate Action Plan and in full support of Ireland's ambition to develop a zero-carbon system.

EirGrid has developed Shaping Our Electricity Future, all of system plan to deliver the Climate Action Plan targets of 5GW for Offshore, 9GW for onshore wind and 8GW of Solar, which combine to a total of 22GW of grid installed capacity by 2030. These network developments in this plan, in addition to the development of interconnection projects such as Greenlink, Celtic and EWIC, will increase capacity for renewable energy on the electricity grid. EirGrid recognises that this is a challenging area of transmission development. Alongside the Department of the Environment, Climate and Communications (DECC) and working closely with other TSOs, EirGrid is currently developing the Offshore Transmission Strategy, to identify offshore transmission options with high potential for offshore wind development and interconnector development.

Tomorrows Energy Scenarios (TES23) was published earlier this year. TES forecasts how electricity demand and generation might evolve from 2035 to 2050. These findings will guide EirGrid's strategic planning of the electricity system as well as the development of energy policy and market design development which is required to decarbonise the power system. The TDP, in section 1.4.2 describes the long-term scenario planning process that starts with TES. TES23 contains scenarios that align with non-binding government targets for renewable generation and electrification. Following TES, an assessment of the long-term needs

of the transmission system needs beyond 2030, i.e., 2035, 2040, and 2050 will be identified and published in TESSNA. This will be published later in 2024. A strategic whole of system assessment to deliver government decarbonization targets and support net-zero operation is then finally set out as projects and published in a transmission development plan (see Chapters 5 and 6 for the regional overviews of the infrastructure development projects). This transmission development process was used to develop SOEF v1.0 and v1.1 where the long-term needs from the transmission system perspective to achieve the Government's 2030 RES-E targets were identified and reported. In the same vein, TESSNA23 (using TES23 as a basis), will identify the future system needs beyond 2030. A subsequent network vision will be produced leading to the network development projects needed to meet decarbonising targets. These projects will thereafter be presented on a regional basis in the next iteration of the Transmission Development Plan together with the ongoing projects that have been identified and reported previously.

With regards to providing speculative dates for projects scheduled for completion beyond 2030, project progress outlined in the TDP is sourced from the Network Delivery Portfolio (NDP). The NDP reports on projects once they have reached a suitable level of maturity. As new investment decisions are made and projects approved these will be added to the relevant NDP and where necessary, these will include dates post 2030. As we approach the PR6 period, EirGrid is reviewing the current structure and format of the NDP and how data is published, and this will be taken into consideration.

Regarding the ECP 2.3 constraint report, it should be noted that the ECP 2.3 constraint forecast estimates network level constraints for ECP 2.3 applicants under different generation scenarios. These estimates are explicitly based on different assumptions as given in the ECP 2.3 constraint forecast reports. The information provided in the reports are not to be considered as a recommendation in respect of investment or development of a project and the applicants in the ECP 2.3 process may/may not proceed with the project which is beyond EirGrid's control.

Additionally, ECP 2.3 constraint forecast report and TDP are mutually exclusive projects with different set of objectives and do not form a recommendation for each other.

2.2.2. Project information and publication timeline

Comments received

The consultation proposed some questions to respondents on the type, amount and nature of the project information provided in the TDP. Across respondents, much was said on the development of an online projects database with more information than what is included in the quarterly NDP. In addition, most respondents support making the TDP a biennial publication if its contents are more focused on network needs, how projects meet the CAP targets, and it is accompanied by an online register with regular updates on projects. They have suggested that the TDP should provide more information on the development of the network and project timelines, in addition to project progression status, more information on project specific decision-making processes and the reasons for changes. Suggestions include:

- While the TDP data freeze date for the current TDP has reduced the gap in information, a regularly updated live register of grid development projects would be more beneficial.
- More information on how projects are progressing through the grid development framework, particularly in early stages. As much detail as possible has been requested on early-stage projects including those to alleviate constraints.
- Information around project delays and removals are not transparent enough to the satisfaction of some respondents.
- Provide clarity on EirGrid's decision making process for grid projects, in terms of what metrics and factors are used. Clarify the prioritisation/re-prioritisation of projects.

- Inclusion of cost benefit analysis for projects that should happen at stage 1 of Grid Development process.
- Publication of the TDP in a two-year cycle is welcome as long as more detailed/frequent project updates are published elsewhere.
- Improved alignment with TYNDP will be necessary if transitioning to a 2-year publication cycle.

Our response

EirGrid’s Annual Innovation Report outlines innovative projects being initiated, in progress and projects completed during the year. This provides insight into the technologies being considered and implemented at this point of time within the company.

While we have no current plans to deliver an online project database, as we approach the PR6 period, EirGrid is in the process of reviewing the way in which NDP data is published and this feedback will be taken into consideration for future developments. EirGrid will continue to work with all our stakeholders to achieve high quality and consistency across major reports and to integrate digital enhancements to the Network Delivery Portfolio (NDP) and the manner in which infrastructure portfolio data is presented externally.

2.2.3. Co-optimization of electricity and gas networks

Comments received

Two of the respondents recommended that the TDP takes co-optimization of the electricity and gas networks (multi-vector energy planning) into consideration as it is being done at the European level. This could help in efficient assessment of network investment needs and a synergistic approach to energy planning.

Our response

The co-optimising of electricity and gas network development will be explored as part of the analysis for a post-2030 net zero network that will follow the TES23 and the associated TES System Needs Assessment.

2.2.4. Renewable hubs

Comments received

Detail on the TSO renewable hubs is required to inform industry assumptions in terms of the locations and the benefits they will provide in mitigating levels of dispatch down identified in the ECP 2.3 constraints analysis. Additionally, renewable hub infrastructure, that are designed to follow demand, in regions like the Southeast and west could help alleviate network constraints.

Our response

As presented in the Transmission Development Plan draft, renewable hubs are being developed by EirGrid. EirGrid and ESB Networks, in their capacity as TSO and DSO respectively, provided the CRU with a joint Position Paper on Generation Connection Policy regarding ‘Renewable Hubs Pilot’ in June 2023. The connection reforms introduced under the Pilot may serve as guidance for development of ECP-3 with possible opportunity for further engagement as the Hubs progress.

Subject to engagement and further detailed technical analysis, these developments and reinforcements will be included as appropriate in future TDPs as they are brought through our six-step grid development process.

2.3. Consultation questions

2.3.1. Question 1

As noted in Section 1.2 of the TDP, there are no available energisation dates for projects beyond 2030. Is this approach sufficient to meet the needs of the electricity grid over the 10-year horizon of the plan i.e. 2024 - 2033? Is there additional information that you would like to see presented?

Comments received

- The TDP in its current form does not provide sufficient information as it appears that EirGrid has a more limited view of what is required in the TDP than the CRU.
- Would like to see clearer information about what transmission infrastructure is required to meet grid needs in the 10-year horizon, even if these potential or necessary projects do not yet have capital approval.
- There are no projects that add grid capacity being completed after 2029, no new circuits after 2028, and there is only one 2030 energisation date listed.
- A number of projects identified in EirGrid's Shaping Our Electricity Future's (SOEF) Roadmap to meet 2030 RES-E requirements are still in Steps 1-3. We can see that even when these are complete that areas such as the Northwest still have very high levels of constraints.
- The TDP is proposed to cover the period to 2033, but has no projects scheduled for completion beyond the end of 2030. A couple of respondents asked if there was a possibility of including speculative energisation dates for projects in early stages in the grid development process.
- It would be good to see additional information on the projects in Steps 1-3 as it is often unclear how they are progressing in these steps. And it is unclear why some grid needs remain unaddressed.
- It would be good to see what the equipment ratings are on new grid infrastructure projects, along with a web link to planning drawings for new/upgraded substation layouts for projects that are in the Step 5 planning permission stage. These could be provided to developers via the EirGrid Extranet site.
- It is extremely concerning that there are no projects planned for beyond 2030 which is 40% of the planning horizon considered.
- It is not sufficient to wait until the TES needs assessment is complete to trigger projects.
- Would be useful to include provision of indicative timelines for onshore projects in stages 2 and 3 and for phase 2 offshore projects post 2030.
- Lack of energisation dates beyond 2030 indicate uncertainty or delays in project execution and raise questions about grid reliability.

Our response

At EirGrid, we continuously endeavour to ensure a comprehensive project horizon is available publicly. Project progress outlined in the TDP is sourced from the relevant Network Delivery Portfolio (NDP). The NDP reports on projects once they have achieved an EirGrid Gateway 3 capital approval. This is considered the appropriate point in time to allow various project teams to develop a project scope and therefore the corresponding schedule, as a clear project scope is in place. Projects at an earlier stage of development are referenced in other documentation such as Shaping our Electricity Future (SOEF).

However, as we approach the PR6 period, EirGrid is reviewing the current structure of the NDP and how data is published, and this will be taken into consideration.

2.3.2. Question 2

There is a statutory requirement for the TDP to be consistent with the National Energy and Climate Plan (NECP). Should consideration be given as to ways in which the TDP could better reflect the goals of decarbonised electricity, secure supply, empowered customers, and the broader intentions of the NECP?

Comments received

Respondents have expressed their concern regarding the alignment of TDP 2024 with the Climate Action Plan (CAP) and National Energy and Climate Plan (NECP). These comments are outlined below.

- It is believed that the CAP and NECP targets can only be achieved with the parallel development of the transmission system, to accommodate the large volumes of renewable generation that will be required. EirGrid has been urged to align with CAP and NECP target of 80% RES-E and proactively plan out beyond this plan.
- It has been pointed out that the TDP should detail how each project meets/contributes to the achievement of the CAP and NECP targets.
- Apart from stating the high-level investment drivers (i). Security of Supply (ii). Market Integration (Competitiveness) (iii). Sustainability (iv). Asset Management, the TDP does not provide any information on how project decision making, and projects align with the NECP.
- There is no discussion in the TDP on the trajectories for electricity that are detailed in the updated NECP (published Dec 2023) and how they align (or not) with the projects in the TDP.
- There is no discussion as to whether the projects listed in the TDP are sufficient to allow the CAP 2030 targets to be met, or any explanation as to how they might do so, or in the case they will not be sufficient, what other actions might be required.
- Many of the dimensions detailed in the NECP map to more strategic transmission system development activities. We would therefore welcome any additional information on the alignment between the TDP and NECP or possible a mapping between NECP objectives and TDP projects.
- Ensure the TDP reflects the objectives of the NECP and involves extensive stakeholder consultation. Include a section in the TDP on policy alignment and stakeholder feedback mechanisms and identify the plans/consultations put forth by the regulators to enhance the grid.
- Include specific targets and milestones in the TDP that are consistent with the NECP's objectives.
- Periodically monitor and report on the progress made towards NECP's targets.
- CAP24 has a target to deliver at least three new electricity transmission grid connections or interconnectors, yet this is not captured in annex and no further detail given on how it will be achieved and what the Green House Gases (GHG) abatement potential would be.
- Security of Supply is mentioned throughout the document but there is no clear definition and instead it is used as a needs case for almost all investments.

Our response

EirGrid's plan for meeting CAP targets is contained in Shaping Our Electricity Future. This plan describes the changes required to the network, operations, market, and engagement needed to meet the CAP targets. Thus, enacting all these identified system changes will lead to meeting the targets set out in the Climate Action Plan.

EirGrid recognises that to meet the 80% RES-E by 2030 target, significant change and investment is needed on the entire power system. Key milestones and targets required to deliver on the required electrification and renewable energy targets by 2030 are set out in EirGrid's Shaping our Electricity Future (SOEF). Consequently, all the projects identified and reported in the Transmission Development Plan are all geared towards meeting the 80% RES-E 2030 target.

EirGrid continues to support and collaborate with relevant stakeholders including the Department of the Environment, Climate and Communications (DECC) and the Commission for the Regulation of Utilities (CRU) to set plans in place for the delivery of climate targets as outlined in the Climate Action Plan.

2.3.3. Question 3

Regional network concerns have been highlighted over a number of years, including as part of last year's consultation responses, particularly with regard to the Northwest region. A number of projects have been included in the TDP 2024 - 2033 in that region, in Section 3.5, as candidate solutions progressing through EirGrid's grid development framework. Does the plan adequately address regional network concerns, and the Northwest region in particular?

Comments received

- Would like to see a 'bigger picture' overview of how the projects in progress and the candidate solutions for the northwest (and Donegal in particular) come together to address the issues of lack of transmission infrastructure and capacity in the northwest.
- Would like more explanation as to how the projects in progress and the candidate solutions provide a solution to the long term under investment in the region, and how they will in future, give rise to a significant increase in capacity for renewable generation in the northwest and in particular, Co. Donegal.
- It is not clear whether the combination of all these projects will enable a significant increase in grid capacity for the connection of additional renewable generation. A clear explanation is needed specifically on how the projects in planning will substantially increase grid connection opportunities.
- The TDP should include more projects to address the regional needs.
- A proactive plan to increase the strength of the network in the West and North-West is recommended, as a reactive approach only delays investment and economic development in the area.
- There are also concerns about the lack of transmission capacity in other parts of our region, e.g. north Mayo. The North Connacht 110 kV Project (CP0816, energisation 31/03/2028) is likely to be at capacity once it is energised with few further generation connections beyond those already committed becoming available.
- The Northwest region is an ideal location to demonstrate how the inclusion of electric boilers could deliver on the Governments decarbonisation targets.
- There is no clear timeline in place for the issues identified in the Northwest to be addressed.

Our response

With respect to the North-West region, the ongoing projects being progressed including the candidate reinforcements identified in SOEF v1.0 and v1.1 are needed to achieve the 2030 RES-E target. Committed projects and those in the early stages of development have been identified in Sections 5.2 and 6.2 respectively of the Transmission Development Draft. For other regions of Ireland, other sections of chapters 5 and 6 cover the committed and early-stage development projects being progressed.

Further needs, post 2030, will be identified as part of TES SNA that will be published later in the year. Additional notes on TES, TESSNA, and SOEF and how system needs are met have been included in above comments.

2.3.4. Question 4

Section 3 of the TDP outlines the projects that have either been delayed or put on hold since the last iteration of the plan. In response to the consultation on TDP 2023 - 2032, some respondents were content with the information provided regarding changes in status to projects, while some respondents were less satisfied with the level of transparency. Has the clarity around delays and removal of projects been adequately addressed in the 2024 - 2033 TDP?

Comments received

- The explanation for project removal and projects ‘on hold’ are sufficient.
- Where changes are made on larger scale projects, with the decision made by EirGrid, more information would be required.
- The transparency has been slightly improved in this iteration but there is still a considerable lack of transparency in the TDP.
- These comments are also relevant to the NDP which is simply for providing Infrastructure Agreement milestones from GW3 onwards but does not provide detail on the drivers, scope or minimum high-level requirements or benefits or drivers of newly added projects.
- Having a live project database that is updated frequently would be particularly useful.
- This iteration of the TDP has more clarity surrounding this but there is still room for improvement.
- Improve alignment with TYNDP and NDP plan cycles. Or provide clarity on non-alignment.
- There is a lack of precise criteria for project removal, which leaves room for future uncertainty and disagreements.
- Include an explanation of the factors considered to arrive at such decisions, thereby retaining stakeholders' confidence in the TDP's integrity.
- One respondent does not agree that the information is transparent enough to enable effective assessment of the underlying issues or future network impacts of projects moving from “Active” to “On Hold” or “Removed”.

Our response

EirGrid welcomes the comments received from stakeholders on the increased transparency in relation to how project removals and those placed on hold are handled. In relation to the live project database, details surrounding this has been presented in section 2.2.2.

2.3.5. Question 5

What is your view on potentially changing the publication of the TDP to every two years (which would mean the next plan would be the TDP 2026 - 2035)? What changes would you like to see in this new plan?

Comments received

Majority of the respondents agreed to biennial publication of the TDP with a few caveats.

- We have no issue with the publication of the TDP every two years as long as EirGrid provides more detailed project updates elsewhere.
- This should include more information on planning requirements, proposed equipment and circuit ratings and improved explanations for any delays. Ideally this information would be available in a live database, so the latest information is easily accessible.
- If online database is kept up to date, then a two-year cycle would likely be acceptable. It is recommended that projects be removed or changed on a quarterly basis.
- One respondent agrees that changing the publication of the TDP to every two years would be appropriate in lining up with European two-year cycle for the TYNDP process, but only if the TDP meets legislative and NECP requirements which it currently does not.
- As things stand, with the NDP providing limited information on projects on a quarterly basis and the TDP itself being light on detail on the drivers and benefits of specific projects, a change to bi-annual cannot be supported. If there is a move to a biannual plan the parameters would have to be appropriately adjusted to proactively take account of expected policy direction, and other supporting documents/live registers would have to be made available to industry to ensure that there is not an increasing vacuum of information between TDP publications.

Our response

We welcome that the majority of respondents have no objection to moving to publication of the TDP to every two years, to align with European and legislative requirements.

In relation to the live project database, details surrounding this has been presented in section 2.2.2.

2.3.6. Question 6

Under S.I. 227/2022, it is stated that the TSO shall take account of “...the use of demand response, storage or other alternatives to system expansion...” when developing the ten-year development plan. Has the plan sufficiently addressed the use of demand response, storage, or other alternatives to system expansion?

Comments received

- There is very little reference to the role of demand response or storage and how they might impact on the need for further grid development.
- It is unclear how EirGrid have made use of demand response, storage, or other alternatives to system expansion in how they plan the grid.
- The developer-led storage projects listed appear to be short duration batteries which are unlikely to be able to help with managing grid congestion or offset the need for other grid infrastructure capacity projects.
- We would like to see the system planned with these including LDES with durations up to multi day.
- Demand response has not been adequately addressed in the ten-year plan.
- Being a small island with limited opportunity for pumped hydro, Ireland is pioneering the integration of variable renewable electricity.
- The scheduling dispatch system currently prevents dispatchable consumption and delivery of useful services from the heat sector to better integrate variable renewable power.
- The TDP does not appear to consider demand response or storage as alternatives to system expansion. Or if it does it is not mentioned within the methodology.

Our response

The use of demand response and storage (including long duration energy storage) is an integral part of the transmission planning framework. From SOEF v1.1 Roadmap, planning assumptions include the continuous operation of Pumped Hydro Energy Storage (PHES) in Ireland, and that there will be growth in Demand Side Units (DSU) and Battery Energy Storage capacities (BES). BES technologies are required in 2030 and beyond for reserve provision, capacity adequacy, and to assist with congestion management. It is assumed that the energy-to-power ratio of the battery fleet will increase over the period to 2030 with mostly reserve-only batteries expected before 2025 followed by longer duration batteries capable of providing capacity, flexibility, and reserve. Finally, in response to support for industrial scale electricity battery storage in Ireland, the final roadmap includes 1.4 GW of battery storage.

2.3.7. Question 7

Should the approach of taking account of outage constraints be implemented into the next iteration of the TDP? If so, do you have any suggestions in relation to its implementation?

Comments received

- It would be good to see multiyear outage plans incorporated into the TDP. It is often unclear if outage planning is factored into outage dates. Could be listed along with their duration, any mutually exclusive outages they are linked to, and the projects they are linked to.

- It would be good if any risks to the projects progressing due to outage are flagged.
- As the NDP is updated quarterly, there is significant merit in ensuring the most up to date data takes account of outage constraints.
- It is essential that any planning that EirGrid is doing includes for constraints such as outages.
- Use of scenarios to present the delivery risk to network infrastructure is not an accurate depiction of the situation if it is based on unconstrained reporting.
- The TDP and SOEF must move away from an unconstrained model and incorporate outages and other risks.
- Whilst incorporating outages into the TDP is a priority, there must also be a transparent and fair method for prioritising outages.
- The outage transformation programme is an initiative that is welcomed by one of the respondents. It was also noted that it may be too soon to consider it for TDP 2025 as the engagement with industry only commenced in April 2024.
- Outage constraints will have to be included in the next TDP in order for it to provide meaningful and realistic outputs.

Our response

Multi-year outage planning is a significantly complex process due to the large volume of projects competing for outage spaces. The Joint Outage Transformation Programme aspires to provide additional outage availability and increase the utilisation of outages taken on the system. EirGrid is of the same view as Industry in that consideration of Outage constraints for TDP 2025 is too soon.

TSO is preparing the joint transmission Capex investment plan for 2026 to 2030 with TAO which will be subject to final determination by the CRU in advance of the PR6 period which commences Jan 1st, 2026. The investment plan is complex and multifactorial and takes account of accelerated delivery through improvements made in Joint Outage Transformation programme and items such as early collaboration and offline build. The constraints imposed by outages will be a feature of this plan.

2.3.8. Question 8

Are there any other aspects of EirGrid’s TDP 2023 - 2032 Consultation Report that have not been implemented to your satisfaction in the 2024 - 2033 TDP?

Comments received

- The treatment of interconnection in the TDP 2024 - 2033 TDP is not sufficiently detailed to inform investor confidence in innovation spaces such as non-standard interconnection, multi-purpose interconnection, and interconnection with generation assets outside of Ireland’s territorial waters.
- With an offshore transmission strategy imminent, it is essential that the TDP more robustly supports the current and future direction of travel for interconnection in international agreements, in EU market design, in Irish and UK policy.
- The use of multi-purpose interconnection (MPIs) and non-standard interconnection (NSIs) could reduce consumer costs by £3-6 billion and reduce the number of onshore “landing points” by up to 50%. In the UK, the Government, Ofgem (UK energy regulator) and National Grid ESO are working to develop this.
- MPI’s have been legislated and included in the 2023 Energy Bill, delivering a clear definition, and enabling it as a licensable activity, which provides certainty to investors and developers to enable them to make decisions regarding the development of such projects in the future.
- The Southeast, Mideast and Dublin remains to be treated with the same level of urgency/importance as the rest of the country.
- An online map/interactive has yet to be published on the EirGrid website.

Our response

Regarding interconnection to other jurisdictions, an extra section (1.4.8) has been added to the TDP post-consultation draft. The content of the section is reproduced here for convenience.

The island of Ireland is currently connected to the Great Britain (GB) electricity transmission system by 2 interconnectors. One of these connects to Northern Ireland and one to Ireland. The Moyle Interconnector comprises a 500MW HVDC cable connecting convertor stations in Islandmagee, County Antrim and Auchencrosh in Ayrshire, Scotland. The East West Interconnector (EWIC) comprises a 500MW HVDC cable connecting convertor stations at Portan in Ireland and Shotton in North Wales.

Two further interconnectors are being constructed.

- During 2024, the Greenlink interconnector should begin operation. This HVDC interconnector will provide 500MW of capacity between Great Island substation and National Grid's Pembroke substation in South Wales. Details of this project are provided in section 5.4 of this report.
- In 2027, the Celtic interconnector should begin operation. This HVDC interconnector will provide 700MW of capacity between Knockraha substation and RTE's La Martyre substation in Brittany, France. The Celtic Interconnector will provide the first direct connection between the SEM and Continental Europe. Further details of this project are provided in section 5.3 of this report.

Two other interconnector projects are planned and included in the TYNDP produced by ENTSO-E.

- MaresConnect would comprise a 750MW HVDC interconnector between the transmission system in the Greater Dublin area and the GB transmission system in Denbighshire, North Wales. MaresConnect is targeted for operation by 2029 and was included in the 2022 list of TYNDP projects. It is also included in the draft list of projects for the TYNDP 2024.
- LirIC would comprise a 700MW HVDC interconnector between the 275kV transmission system in Northern Ireland and the 400kV transmission system in Scotland. LirIC is targeted operation by 2030 and was included in the 2022 list of TYNDP projects. It is also included in the draft list of projects for the TYNDP 2024.

Neither the MaresConnect or LirIC projects have agreed connections to the transmission networks in Ireland and Northern Ireland respectively.

Offshore Renewable Energy Development in Ireland

Ireland has ambitious goals to install offshore renewable energy including offshore windfarms (OWF). As well as a target to install 5GW of offshore generation capacity by 2030 through the Phase 1 and Phase 2 work described in Section 1.4.7, longer term non-binding goals include the connection of 20GW of generation by 2040 and 37GW by 2050.

To facilitate the large-scale development of offshore generation, additional offshore transmission capacity will be required to enable the connection of OWF to the existing onshore transmission system in Ireland and to other locations where the renewable energy may be used. If offshore generation is developed at the levels being targeted, it is likely that offshore renewable energy output (alongside onshore renewable energy), will exceed current and forecast energy requirements on the island of Ireland. New interconnection capacity, in addition to the projects that are under construction are likely to be required to enable the export of electricity to other jurisdictions.

The objectives for further interconnection and the export of renewable energy to other jurisdictions are explicitly supported by Government via the 2023 National Interconnector Policy Statement and are referenced in other policy documents such as the Offshore Future Framework.

By their nature, interconnection projects are technically complex, can have major social and environmental impacts, and will involve multiple stakeholders. Typically, interconnector projects take 15 years or more from initial inception to commercial operation. Early assessment and identification of

interconnection projects will be required to secure resource and to ensure projects can be provided in time to match wider offshore generation objectives.

Hybrid & Point to Point Interconnectors

The existing interconnectors between Ireland and the UK, and the interconnectors that are under construction to GB and France are direct “point-to-point” HVDC connections. These connect onshore convertor stations in Ireland and Northern Ireland to convertor substations in Great Britain and France via subsea HVDC cables.

Increasingly, hybrid (or multipurpose) interconnector projects are also being considered. Such projects can combine offshore generation connection and interconnection through the provision of transmission substations located on offshore platforms. Where offshore generation resources are being developed, hybrid interconnectors have the potential to provide significant advantages when compared to point-to-point interconnector projects. Firstly, they can reduce the number of cable landings to shore as OWF can be connected directly to offshore transmission substations. Secondly, hybrid interconnector projects provide connection capacity for generation as well as transfer capacity between electricity transmissions. These factors can reduce the environmental impact of electricity transmission and ensure that the transmission infrastructure is more efficiently utilised.

In its 2023 Policy Statement on Interconnection, the Irish government explicitly included objectives in relation to hybrid interconnection. Further, the Irish government has entered into bilateral and multilateral agreements with the UK, France, and Belgium to explore further interconnection.

Given their potential advantages, hybrid interconnector projects should be considered alongside point-to-point interconnectors. Most European TSOs in jurisdictions where large-scale offshore wind resources are being developed are now assessing hybrid transmission infrastructure.

EirGrid’s Interconnection Activity

EirGrid recognise that further electricity interconnection (including hybrid interconnectors) is likely to be needed given Ireland’s ambition to develop largescale offshore wind beyond 2030. As Transmission System Operator in Ireland, EirGrid already has an obligation “ to explore and develop opportunities for interconnection of its system with other systems”. In addition, as the entity responsible for developing offshore transmission infrastructure for Ireland, EirGrid is considering opportunities to develop offshore infrastructure including interconnection capacity in an efficient and timely way.

In line with these obligations and guided by the July 2023 National Policy Statement on Electricity Interconnection, EirGrid is already exploring opportunities for further interconnection with neighbouring TSOs. Additionally, within the Ostend TSO’s group formed after the Ostend Agreement of April 2024, EirGrid is working with other North Seas TSOs to develop and assess hybrid interconnector opportunities and the policy that will enable their operation. All this development should fit within the plan-led approach to offshore development in Ireland.

EirGrid recognise that other parties will have ideas to develop further interconnection projects. We welcome the discussion of potential projects with other TSOs and with project developers where these projects fit within the developing policy for Ireland. Given their potential advantages we would also welcome opportunities to discuss hybrid interconnection.

With respect to an online interactive map, this has been published and made available on the EirGrid website starting from the previous TDP. The interactive map for the projects contained in the current TDP is included in the following [link](#)⁴.

⁴ <https://eirgrid-ie.maps.arcgis.com/apps/webappviewer/index.html?id=809889bb04744a3f89fd63499d35d6c1>

2.3.9. Question 9

The CRU would be interested in the following information from stakeholders - who uses this document, how do you use the document and what do you use it for?

Comments received

- We use the TDP to monitor developments currently in progress.
- We also use it to gain insight into planned solutions to infrastructure deficits in our region, and to understand how transmission grid planning is responding to policy set by government such as the CAP.
- We would like the TDP to give us a better understanding of decision-making regarding transmission infrastructure in our region which has had long standing infrastructure deficits, and which does not currently have sufficient capacity for the connection of additional generation.
- As renewable energy developers we use it to check for what grid needs are being addressed, to monitor grid infrastructure delivery including delays, and to see what point the projects are in in the development and delivery cycles.
- Limited information given on these and more information on project delays and removals would be helpful.
- NDP is kept more up to date but still with limited information and some projects in the earlier steps don't have energisation dates against them.
- This document is used to help inform the near to long term project pipeline onshore and offshore and to assess the relationship between Irish headline renewable targets and deliverability.
- Used to educate newly elected local officials on grid transmission needs.
- Used to monitor renewable energy self-sufficiency in the Southeast region.
- Used to get updates on EirGrid's grid infrastructure projects in terms of when they will be delivered, what stage of the development they are in the delivery cycle.
- It can also provide some useful context of the need for a given project.
- NDP is updated more frequently and so has superseded the TDP. Although it lacks details.
- Used to assess capacity for potential future projects.

2.3.10. Question 10

Do you have any other suggestions to improve the TDP?

Comments received

- It seems that the TDP is currently more of a progress report than a development plan.
- Given the time taken for projects to go from stage 1 to stage 6, the ten-year horizon is limiting if it only reports on projects in these stages.
- The TDP suggests (Fig 1) that the TDP flows from the Generation Capacity Statement (GCS) and the TYTFS, but it is not made clear except at a high, very general level, how this operates in practice or how the findings of the TYTFS feed into the decisions about the projects selected and listed in the TDP. It would be helpful if it was clearer at a project or group of related projects basis.
- More detailed information should be provided on project timelines and project spend, for example percentage of project devex and capex spend as a metric to track project progress.
- More detailed information on project prioritisation would allow for better tracking of project progress. We recommend that more information is provided on project progress against the framework steps i.e. if a project hasn't progressed as anticipated then the reasons why should be outlined in more detail to help developers manage the associated risk of grid delays.

- A significant improvement would be if projects listed in the TDP included the minimum expectation to be considered successful, this could include the rating to be achieved, timeline & cost, the expected CO2 reduction/constraints improvement due to the reinforcement.
- We would also like to see EirGrid consider future proofing of new circuits so that maximum use of new circuit route corridors is made and so that new circuits can be voltage uprated with minimal effort or impact to the environment and local communities if required. For example, new 110kV cables could be constructed to a 220kV standard and operated at 110kV without major changes to their construction footprint.
- Flexible consumers are not informed enough as to when the grid wants them to switch on. Dispatch instructions should be delivered for flexible consumption.
- Eirgrid should work with SEAI to identify and map the potential flexible consumers who can switch from fossil fuels to renewable electricity as part of a hybrid delivery of heat towards our 2030 targets. - Integration of renewable energy.
- The Heat Sector investing in hybrid delivery of heat can assist the electricity sector in making best use of our renewable generation assets which have already been funded by the Irish public. Reduce import of fossil fuels by using 'would be wasted' renewable electricity in the industrial heat sector and district heating sector.
- As mentioned, a workbook accompanying a shorter main report would be welcomed (see [Scotland Transmission Owner Reinforcement Instruction](#) and [NGESO Transmission Works Report](#)).
- Include minimum capacity line uprates, as seen in Scottish Power Transmission Owner Reinforcement Instruction (TORI).
- It would be useful if spare transmission bays could be identified within the document or space within substations to add bays.
- A significant ongoing issue with future planning for developers is understanding if there is space to add an additional HV bay or understanding if there are spare bays in transmission substations. To the extent that it is possible, the TDP should identify these bay opportunities and where the TSO/DSO intend to upgrade existing substations.
- The TDP process should also accommodate consultation on more innovative solutions to the difficult area of building new transmission circuits. E.g. transmission cable/ducting alongside new rail lines earmarked for electrification, transmission cable/ducting alongside or under existing overhead lines, Offshore system reinforcements.

Our response

Regarding more details on project timelines, project progress outlined in the TDP is sourced from the relevant Network Delivery Portfolio (NDP). There are currently no plans in place to modify the format in which NDP is published at present. However, as we prepare for the PR6 process, EirGrid is currently carrying out a thorough review of the structure of the NDP and this will be taken into consideration.

2.3.11. Question 11

Additional notes.

The majority of the comments added under this consultation question have been captured in the key feedback section or under one of the other questions above. Some additional comments received are presented below.

Comments received

- Request a “Priority Projects” list for 2030 to give stakeholders confidence that the grid requirements are being delivered in a timely manner with clarity on the projects that are helping to deliver on the requirements outlined in the CAP.

- As much detail as possible should be provided on the early-stage projects, including those projects to alleviate constraints including the outputs of the Cost Benefit Analysis (CBA). This will identify the optimum project/action needed to address the constraint and the benefits each will provide to the consumer.
- Engaging local authorities and elected officials is crucial to advance projects through planning.
- Highlight substantial pipeline projects that require new transmission infrastructure.
- Emphasize need to rapidly advance 2023-2040 system modelling and planning.

Our response

Projects are included in the NDP once they have passed the EirGrid capital approval stage as experience has shown, that prior to this point in time, it is usually premature to publish specific milestone information for which the project detail is not sufficiently advanced or is not yet available. Transmission projects are prioritised, progressed and reported in the NDP to meet relevant targets. The priority projects and work programmes that the TSO and TAO are implementing annually to deliver upon the 2030 targets are included in the NDP.

Abbreviations

CRU	Commission for Regulation of Utilities
DSO	Distribution System Operator
ECD	Estimation Completion Date
ESB	Electricity Supply Board
NDP	Network Delivery Portfolio
OSS	Operating Security Standards
RES	Renewable Energy Sources
RIDP	Renewable Integration Development Project
SOEF	Shaping Our Electricity Future
TDP	Transmission Development Plan
TES	Tomorrow's Energy Scenarios
TESSNA	Tomorrow's Energy Scenarios System Need Assessment
TSO	Transmission System Operator
TSSPS	Transmission System Security and Planning Standards

Glossary

Network Delivery Portfolio (NDP)

The NDP publication provides a quarterly status update on three key milestones, EirGrid Capital Approval, Project Agreement with ESB and a forecast energisation date. Dates shown in the NDP are based on an unconstrained scenario and are, therefore, indicative, and subject to change due to operational requirements and emergent equipment conditions. Associated Transmission Reinforcement (ATR) system reinforcement updates are contained in EirGrid's NDP. If necessary, Generator customers will continue to receive direct ATR related communications from their System Operator.

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.