Transmission Development Plan

Consultation Report

July 2023

Contents

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

Abbreviations

ATR	Associated Transmission Reinforcement
CRU	Commission for Regulation of Utilities
DSO	Distribution System Operator
ECD	Estimation Completion Date
ESB	Electricity Supply Board
FAQ	Firm Access Quantity
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
TESNA	Tomorrow's Energy Scenarios System Need Assessment
TSO	Transmission System Operator
TSSPS	Transmission System Security and Planning Standards

Glossary

Associated Transmission Reinforcement (ATR)	ATRs are the transmission reinforcements that must be completed in order for a generator to be allocated Firm Access Quantity (FAQ). ATRs include reinforcements such as circuit and busbar upratings, new stations and new circuits.
Firm Access Quantity (FAQ)	The level of firm financial access available in the transmission network for a generator is that generator's FAQ. Firm financial access means that if the power produced by a generator is constrained down, it is eligible for compensation in the manner set out in the Trading and Settlement code.
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.

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 currently required by both statutory[1] and licence[2] obligations to produce a Transmission Development Plan (TDP). Under licence, we are currently required to produce a TDP at least annually. S.I. 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 TDP[3]. 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 2023-2032 (TDP 2023) 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 will make to the draft TDP 2023 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. For TDP 2023, the draft version was published for consultation on the CRU website on 11 April 2023 and the consultation closed on 23 May 2023.

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 drivers for investment, both policy drivers and technical drivers;
- The needs of the transmission network; and
- 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.

1.3. Updates to the TDP following consultation

As a result of the consultation responses, we have recognised the need to link the candidate solutions from SOEF 2021 to the Capital Projects reported in the TDP. We have added a table to include this information.

[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)

Regarding the Celtic Interconnector, we have included detail to clarify the context of this project and how it is managed by EirGrid and the French electricity operator: Réseau de Transport d'Électricité (RTÉ).

An online map with the projects reported in the TDP will be published to support the publication and response to a common request from the stakeholders.

2. Consultation Responses

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

- Bord Gáis Energy;
- Bord na Móna;
- EDF Renewables;
- Future Energy Ireland;
- Source Galileo;
- 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 are reviewed and considered, and where possible, incorporated into the final TDP 2023-2032. 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 responses 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 2023, are unlikely to be met without a parallel development of the transmission system to accommodate the expected renewable volumes.

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 constraint and curtailment will continue to be a problem for renewable generation.

Comments include:

- One of the respondents has recommended that EirGrid have sufficient resources, in terms of development and operating expenses, necessary for the design and approval of grid reinforcement solutions, and the capital expenditures necessary for the construction of new grids to carry out the multiple lines of work that will be required.
- 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 that can operate with 100% SNSP.
- The TDP should include more projects to address the regional needs identified in TESNA 2019 and more of the solutions identified in the SOEF roadmap.
- Projects need to enter and progress more quickly through the 6-step Framework.

- TDP appears to be taking a reactive rather than proactive approach to planning future network investment, with little evidence of long-term planning in line with future RESS and ORESS auctions. 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. Advance and proactive planning of grid reinforcements is essential to ensure the correct scale, size and location of investments to encourage investment in renewable generation in Ireland and protect consumers in the transition to Net Zero.
- One respondent has suggested that in order for EirGrid to meet 2030 targets, projects in constrained areas should be developed in parallel with their pipeline and into future TDP and SOEF roadmaps rather than waiting for generators to sign connection offers and become 'contracted'.
- The projects for the North-West and Midlands in the draft TDP only appear to provide network capacity for existing generation, with little future proofing of new circuits. Although several SOEF reinforcements were proposed for 2030, including new 220 kV circuits in the northwest, they are not listed in the TDP or the Network Delivery Portfolio (NDP) publication.
- The TDP is proposed to cover the period to 2032, but has no projects scheduled for completion beyond the end of 2029. It was asked if there was a possibility of moving forward new network reinforcement projects for delivery in the 2030 to 2032 period.
- One respondent mentioned that the development and publication of an effective management plan to minimise dispatch down and remove the risk to renewables would be welcomed.
- 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.
- 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.
- More investment in the North-West region, as it is considered to lack infrastructure to accommodate significant wind generation along with low demands, resulting in local constraints. Such investment will also be necessary for potential future offshore wind farms that may appear in OREDP 2.

Our response

The transformation of the electricity systems and markets in both jurisdictions of the Island, fall under the five-year strategy that EirGrid and SONI launched at the end of 2019[4].
As indicated in the draft TDP 2023, the TDP contains a list of committed investment as of December 21st, 2022. It is anticipated that additional committed investments will be required in future years to address the reinforcement needs listed below:

- Reinforcements required to support changes in, or connection of new demand and generation;
- Reinforcements related to interconnection;
- Reinforcements to facilitate inter-regional power flows; and
- Reinforcements to address the condition of existing assets.

The candidate reinforcements identified in SOEF 2021 have been studied in more detail as part of the framework for grid development. It is important to note that the candidate solutions in SOEF are identified based on performance tests using a subset of the Transmission System Security and Planning Standards (TSSPS). The subset of the standards focusses on testing the performance of the intact power system and the power system when there is an outage of a single item of transmission equipment, such as a circuit, which is referred to as the single contingency performance test (i.e. N-1). These tests are appropriate as the primary tests of the adequacy of transmission system security at this strategic stage of the analysis. For the candidate solutions identified in the SOEF 2021 that moved to step 2 in the framework for grid development, the full set of TSSPS tests was used to assess the performance of the grid (i.e. N-G-1) resulting in some differences in reinforcements. As the projects have been developed, they

[4] https://www.eirgridgroup.com/about/strategy-2025/

have been subject to extensive stakeholder participation and consultation as part of the process that assesses whether the projects are progressing at the appropriate pace within the framework for grid development.

The final version of TDP 2023 will include a list of projects that emerged from the candidate solutions identified SOEF 2021. New candidate solutions from the updated SOEF v1.1[5] published this summer, are beginning to be evaluated and, as these solutions progress through the framework for grid development, new projects will be reported in the next version of the TDP.

In order to progress projects more quickly within the framework for grid development, EirGrid has being assessing a considerable number of options for meeting the 2030 targets.

First published in September 2022, the Network Delivery Portfolio, NDP, provides a quarterly status update on the three major project milestones of EirGrid Capital Approval, Project Agreement with ESB Networks and Energisation for ca. 350 projects. 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. 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.

EirGrid and ESB Networks have been combining and compressing framework steps for eligible transmission projects, to improve the speed of delivery across the NDP. This involves completing activities in parallel, particularly at the early investment planning stages, reducing the time between steps, with the implementation of joint specialist teams, earlier engagement, and greater joint coordination of outage activities.

The framework for grid development is an end-to-end process for all EirGrid's grid development projects from their conception to the eventual construction and subsequent energisation. The framework builds upon a large number of internal policies, processes, practices and methodologies that are relevant in particular to the process of grid development, including stakeholder engagement.
Due to the extent of the process as well as the number of technical/economical assessments and stakeholder engagement, it may happen that for certain projects longer lead timelines are required to ensure quality delivery. EirGrid is working within a transparent process, planning the project timelines required to address both short-term and long-term development while ensuring security of supply.

Over the past several years, EirGrid has been planning and implementing strategies to prepare the network to meet all reasonable future demand.

In order to have a vision of the future needs of the network, EirGrid has introduced Tomorrow's Energy Scenarios into the grid development process to cater for the increased level of uncertainty over the future usage of the grid and Tomorrow's Energy Scenarios System Needs Assessment to test the performance of the electricity transmission network. Additionally, in response to the first Government's Climate Action Plan published in 2019, EirGrid launched Shaping Our Electricity Future with a core objective of establishing a roadmap for delivering the connection of RES-E target.

It is believed that the scale of the impact of the low carbon transition outlined in Tomorrow's Energy Scenarios and the candidate solutions to cater for the forecasted renewable integration and demand growth into the grid, show proactive approaches led by EirGrid.

Regarding the projects in constrained areas, EirGrid is already following the same path and the constrained projects are being progressed in advance of the connection offer agreements. Most of the constrained projects highlighted in SOEF have already got Capital Approvals or already in the pipeline.

[5] https://www.eirgridgroup.com/site-files/library/EirGrid/Shaping-Our-Electricity-Future-Roadmap_Version-1.1_07.23.pdf

The North-West area faces a number of challenges in developing the network. Due to the topology of the network and relatively low levels of network capacity, outage opportunities are limited, and it is often not possible to carry out multiple simultaneous circuit outages for maintenance, expansion, new connections or substation work. A planned outage in this area can have a major impact on the local grid and the wider network, often constraining generation in the area.

In order to enhance the network in this area, the following projects were completed:

- Letterkenny 110 kV Station – Two new couplers and relocation of 110 kV Bay (CP0740)
- Castlebar 110 kV Station – Busbar uprate (CP0771)

In addition, the current TDP has reported the following projects in the area:

- Sligo 110 kV Station – Srananagh 1 & 2 bay uprates (CP1156)
- Binbane – Cathaleen's Fall 110 kV circuit thermal capacity (CP1079)
- Dalton 110 kV Busbar (CP0907)
- Glenree – Moy 110 kV line uprate (CP1155)

As for the Midlands, the following projects were completed:

- Corduff 220 – 110 kV station – Two new DSO Transformers for demand (CP1025)
- 220 kV cable sealing end replacement at three transmission stations (CP1053)
- Thornsberry 110 kV Station – Busbar uprate (CP0724)

In addition, the following transmission projects received capital approval and are reported in the current TDP:

- Derryiron – Thornsberry 110 kV circuit uprate (CP1199)
- Lanesboro – Mullingar 110 kV line LCA (CP1000)
- Lanesboro – Sliabh Bawn thermal uprate (CP1078)
- Cashla – Galway 110 kV Circuit 2 uprating (CP1275)
- Cashla – Galway 110 kV Circuit 3 uprating (CP1276)
- Bellacorrick 110 kV station uprate (CP0837)

The recently published SOEF v1.1 identified candidate reinforcements to address 2030 and 2050 generation and demand growth. These candidate reinforcements will be assessed, and they will be reported in future TDP as they progress through the six-step framework for grid development.

SOEF v1.0 candidate solutions have been evaluated in the six-step framework for grid development. As commented above, the final version of TDP 2023 will include a list of projects that emerged from the candidate solutions identified in SOEF v1.0.

The projects listed in this TDP are projects that have received capital approvals since the last data freeze day, there are no projects scheduled for completion beyond the end of 2029. Future iterations of the TDP will include projects scheduled for completion between 2030 and 2032 and beyond.

EirGrid and SONI are securely operating the All-Island system with world-leading variable renewables penetration, primarily from wind energy. In 2023, the All-Island system can accommodate up to 75% of instantaneous generation from non-synchronous resources (mainly wind and HVDC interconnection). However, while these achievements are leading the way worldwide, to meet ever more ambitious decarbonisation targets in the years ahead, the electricity system will need to accommodate greater amounts of renewable energy. This means that the operational constraints will need to be relaxed to facilitate another step change in accommodation of renewable energy resources.

A management plan to minimise dispatch down and remove the risk to renewables is out of the scope of the TDP but can be found in the Operational Policy Roadmap[6].

[6] https://www.eirgridgroup.com/site-files/library/EirGrid/Operational-Policy-Roadmap-2023-to-2030.pdf

Network reinforcements described in TDPs are vital element to facilitating renewables and reducing constraints.

Dispatch down and constraints are an area of continuing focus for EirGrid and SONI, and dispatch-down is minimised by the control centres while also managing system issues, forced outages, and the many other challenges that occur every day. The issues that can crop up in an operational time frame cannot be reasonably studied by planners, who are designing the network up to 10 years in advance of those new developments becoming operational.

Information on potential future constraints across a range of scenarios for generators that received offers under the Enduring Connection Policy Stage processes (ECP-1 and ECP-2) are available on the EirGrid website[7][8][9]. These reports were created to fulfil the requirement of CRU's ECP-1 decision, CRU/18/058, and ECP-2 decision, CRU/19/143, that system operators carry out system studies to inform generators about possible constraint levels.

The CRU published its PR5 Decision in December 2020. In addition to providing the forecast revenues for EirGrid and ESB Networks for the physical development of the transmission system, the CRU has under its PR5 Regulatory Framework, Incentives and Reporting paper placed a key focus on constraints over the coming years[10].

This framework includes the introduction of new incentives and reports on the TSO related to 'Renewable Dispatch Down', an Ireland-only incentive on 'Imperfections & Constraints' and a 'Joint TSO/DSO Co-ordination' incentive which includes a focus on Dispatch Down and Curtailment in recognition of the potential greater role for the DSO in managing dispatch down as the power system evolves. The outputs of these incentives alongside other activities will form part of the Annual Performance Report as published by EirGrid.

2.2.2. Project information

Comments received

The consultation proposed a number of questions to respondents on the type, amount and nature of the project information provided in the TDP. Respondents have welcomed efforts to align the publication of draft TDP more closely with the data freeze date. 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:

- The TDP data freeze date and a subsequent gap in information in the TDP publication is an issue which results in information often being out of date and of little benefit. Date for this means SOEF v1.1 will not be fully taken into account in the final TDP. A live register of grid development projects would be more beneficial.
- Ensure that the data freeze date is aligned with the NDP Quarter 4 publication, with early-stage projects reconciled back to their source.
- Combine NDP Guidance and Publication documents, including commentary on quarter-to-quarter changes, risk assessment of impacts to delivery of 2030 targets.
- More information on how projects are progressing through grid development framework, particularly in early stages. As much detail as possible has been requested on early-stage projects including those to alleviate constraints.

[7] https://www.eirgridgroup.com/customer-and-industry/general-customer-information/constraint-reports-solar/index.xml
[8] https://www.eirgridgroup.com/customer-and-industry/general-customer-information/ecp-2.1-constraint-report-1/index.xml
[9] https://www.eirgridgroup.com/customer-and-industry/general-customer-information/ecp-2.2-constraints-repor/index.xml
[10] https://cruie-live-96ca64acab2247eca8a850a7e54b-5b34f62.divio-media.com/documents/CRU20078-PR5-Regulatory-Framework-Incentives-and-Reporting.pdf

- 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 operated by EirGrid and how updated information will be shared with the reasons for change.
- More information on the reasons why projects have not progressed as planned and why there have been changes in the timelines.
- Inclusion of cost benefit analysis that should happen at stage 1 of Grid Development process.
- More detailed information on project timelines and spending, such as information of percentage of development and cost of projects as a metric for tracking progress. It would also be useful for the NDP and TDP to indicate which projects require planning permission and which do not.
- Include a ***construction commencement dates*** (or status to projects) for projects within direct control of TSO and DSO only.
- Establish a '***priority projects'*** list for 2030 in TDP to identify the ability of each project to facilitate the transition of the power sector to meet both its carbon ceilings while not increasing the risk to security of supply.
- Add a new section **to *report by topic***. I.e., Addressing most impacting constraints, projects related to accommodating a particular technology (synch-comps, battery storage units that primarily accommodate offshore renewables)
- Transparency around risk to projects and mitigation plans around this would be welcomed. As the generator bears the risk of delays to transmission infrastructure, it is believed that this information regarding the risks should be made available.
- Room for further clarity within the TDP, clearly showcasing and separating out capacity building projects and outlining the needs cases which underpins the TDP.
- Inclusion of forward-looking view on grid development plans for the next 10 years (and a higher-level view for the next 10 years after that i.e., out to 2042) such as the inclusion of Projects in Early Stages in the TDP and developing major infrastructure projects (such as offshore to onshore grid connections interface).
- There is no clear indication in this TDP that longer term (2050) targets being acknowledged in the 10-year planning process. The important of taking this into account has been mentioned, as the lifetime of the assets in development is likely to be beyond 2060.

Our response

EirGrid welcomes the comments from stakeholders regarding the level of detail that is reported on its transmission projects in the TDP. This feedback is very helpful to illustrate the reasons why specific data is published and to outline the large amount of data which is published in various TSO reports on the progress of the portfolio of projects in the Network Delivery Portfolio (NDP). Please refer to NDP information provided in Section 2.2.1.

There is a comprehensive reporting framework in place for PR5 which is set out in the PR5 Reporting and Incentives decision[11] as part of CRU/20/154. This includes the requirement to publish a quarterly portfolio update for stakeholders (the NDP), to develop two annual publications; the Joint Annual Performance Report and the Investment Planning and Delivery Report and to carry out the works outlined in a number of incentive multi-year plans. These reports include both summary and detailed information relating to the performance of the NDP and the PR5 Network Capex allowance. EirGrid also publishes updates on its website for specific large-scale projects and programmes including links to supporting information.

EirGrid develops, engages and consults on all of our projects in accordance with our Framework for Grid Development, the six-step process, which is a rigorous approach to the planning, design, consenting, construction and energisation for each project, all underpinned by substantive public and stakeholder engagement.

The grid projects are designed to solve the need identified through application of TSSPS. Regarding the decision-making process, the needs identified in the TES System Needs Assessment and candidate solutions

[11] https://cruie-live-96ca64acab2247eca8a850a7e54b-5b34f62.divio-media.com/documents/CRU20154-PR5-Regulatory-Framework-Incentives-and-Reporting-1.pdf

reported in SOEF must be examined in more detail through the EirGrid's Framework for Grid Development as described in Appendix B of the TDP, Eirgrid uses SOEF and TES, extent of overload and frequency, to prioritize the projects. Apart from these other factors, including technical and economic aspects are also considered. More information of the EirGrid's processes to develop the grid can be found on our website[12]. There is also a guideline regarding the allocation of prioritization for the outages[13].

EirGrid believes that this level of detail, across a portfolio of ca. 350 projects, and a number of communications channels, represents the most efficient and appropriate method for providing project and progress updates. The TSO continually seeks to improve the quality and accuracy of the infrastructure delivery information that it provides to stakeholders. EirGrid advises that there are no plans within PR5 period to provide real-time project or outage information to stakeholders, however these large-scale system projects may be considered for PR6. In the interim, we will continue to improve upon the quantum of information and presentation of the quarterly NDP publication.

2.2.3. Climate Action Plan 2023

Comments received

Respondents have expressed their concern regarding the alignment of TDP 2023 with the Climate Action Plan 2023 (CAP 2023).

Comments include:

- It is believed that the CAP 2023 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 23 target of 80% RES-E and proactively plan out beyond this plan.
- It is believed that the capabilities to address and deliver the CAP 23 targets outlined by the Government are not properly provided for, as several projects outlined in the draft document were initiated back in 2012 and are still not completed.

Our response

The Climate Action Plan sets the targets to be achieved by EirGrid. Among the most important measures in the CAP 2023 is to increase the proportion of renewable electricity to up to 80% by 2030 and a target of 9 GW from onshore wind, 8 GW from solar, and at least 5 GW of offshore wind energy plus 2 GW for green hydrogen production.

SOEF v1.1 builds on the original roadmap, SOEF v1.0, and outlines a pathway towards meeting enhanced 2030 government electricity ambitions in Ireland and Northern Ireland. It aims to do this in a manner which balances technical considerations, cost implications, environmental impacts, social acceptance, and deliverability. It also provides a foundation to support the broader transition to net zero by 2050. Once the candidate solutions proposed in SOEF v1.1 are assessed and progressed through the framework for grid development, they will be reported in the TDP.

EirGrid is developing the grid to be able to take on more electricity from renewable sources, to deliver a cleaner energy future. In 2022, eight new renewable energy projects were successfully connected to the national grid, increasing the renewable generated power available to 600 MW. These connections are part of getting us to our 2030 climate targets of up to 80% of electricity coming from renewable sources. So far this year, renewable energy sources, wind, solar and hydro, generated approximately 41.9%, 43.5%, 39.7%, 38.2%, 23% and 25% of grid electricity in the months of January, February, March, April, May and June respectively.

[12] https://www.eirgridgroup.com/__uuid/7d658280-91a2-4dbb-b438-ef005a857761/EirGrid-Have-Your-Say_May-2017.pdf

[13] https://www.eirgridgroup.com/site-files/library/EirGrid/EirGrid-Outage-Prioritisation-Guidance-Document-Final.pdf#:~:text=This%20guidance%20document%20sets%20out%20the%20general%20basis,would%20be%20expected%20with%20any%20complex%20infrastructure%20programme.

Continued secure operation of the power system is critical. We are currently operating the power system with System Non-Synchronous Penetration levels up to 75% and trialling Rate of Change of Frequency (RoCoF) up to 1.0 Hz/s. Satisfactory completion of this RoCoF trial will form the basis of further changes to our operational practices to achieve our 2030 targets.

2.2.4. Interconnection

Comments received

The draft TDP document mentions a project related to the Celtic interconnector, which refers to works to be carried out at Knockraha station to prepare for the interconnector. The respondents have asked why a more detailed description of the Celtic interconnector, similar to the one made for the Greenlink interconnector, has not been included.

Our response

While there is a Capital Project for the Greenlink Interconnector connection there is no capital project number associated with the Interconnector itself. This is because the project is being delivered by CIDAC which is a joint venture between EirGrid and RTÉ.

The project is jointly funded by both TSOs through cost sharing agreements with the supporting national regulatory authorities with additional EU grant funding.

2.2.5. Offshore

Comments received

One of the respondents has commented that there is a lack of consideration for the offshore potential in the West areas of the country and planning of transmission network for hydrogen production, specifically:

- Little reference to the long-term potential for offshore generation and the need to begin planning for a network with the capacity to facilitate such development. Some offshore wind projects were expected to be in place off the west coast by the end of the TDP in 2032, which is not acknowledged in the plan. Neither is the Agenda for Government 2050 target of 30 GW of offshore generation by 2050. If planning to achieve these targets has begun, the TDP does not indicate it or provide anything more than a cursory mention that it will be needed.
- It was mentioned that the excellent wind resources in the Northwest and Western regions have been left behind in terms of network developments.
- Lack of information on the planning of the transmission network to produce 2 GW of hydrogen.

Our response

The purpose of the TDP is to outline projects under development and with capital approval. SOEF shows the roadmap of power system changes, including network development to meet 2030 targets. Tomorrow Energy Scenarios (TES) will look further out towards 2050 to understand the likely future sources of renewable energy and the uses of that energy. TES will form the basis for identifying any future grid development needed to support the transition to net zero by 2050.

The government is also developing its Offshore Renewable Energy Development Plan (OREDP II) which will indicate what areas of the sea are suitable for development.

It is the Departments expectation that the 2GW of offshore wind planned for hydrogen production listed in CAP23 is not to have any effect on the grid, i.e. not grid connected. This is shown in SOEF v1.1 published in July 2023.

2.2.6. Future proofing and use of new technology

Comments received

Respondents believe that to build and prepare a network capable of meeting the target for 2030, EirGrid should consider examining new technologies to maximise the use of the assets.

Comments and suggestions include:

- Consider future-proofing new circuits so that maximum use is made of new circuit route corridors and that, if necessary, the voltage of new circuits can be increased with minimal effort or impact to the environment and local communities. New 110 kV cables could be built to a 220 kV standard and operated at 110 kV without major changes to their construction footprint.
- GIS stations are not easily expandable. Respondents would be interested in receiving more information on how to overcome challenges such as future expansion of additional bays and additional voltage levels at GIS stations.
- Solutions such as dynamic line ratings and power flow control should be used more widely and on a fast track to provide capacity while upgrading lines and delivering new circuits. These solutions are expected to be more widely used in the next SOEF roadmap update.

Our response

EirGrid and SONI have a proven track record in the delivery of transformational innovation in support of the energy transition and are currently delivering a portfolio of innovative programmes to achieve the 2030 targets. The net zero carbon ambition now necessitates enhancing and accelerating our approach to overcome the natural limitations of many established technological, operational and market practices, delivering ever-greater innovation capability and solutions to address whole system challenges.

As the Transmission System Operator, EirGrid is committed to developing innovative ways to operate and plan the network. Innovation and research are key enablers to deliver our Strategy 2020-2025. More information can be found in EirGrid's website[14].

Our Annual Innovation Report[15] documents progress on innovative programmes throughout 2022, as well as EirGrid's ambition for future developments of programmes and new initiative to incentivise build-out of system support technologies.

As TSO, EirGrid does not recommend designs of new 110 kV to be constructed to 220 kV standards by default, as a 220 kV cable cannot be accommodated in some of the remote parts of the network due to electromagnetic transient issues. New technologies and innovations are constantly evaluated and considered in the network development where appropriate, to ensure security of supply.

EirGrid is responsible for providing a consistent approach to the design and operation of transmission substations in Ireland, while ensuring a safe, secure, reliable, economic, efficient and co-ordinated electricity transmission system. This is achieved by ensuring an appropriate level of transmission substation reliability, and by extension consistent reliability across the system, while ensuring that investment decisions maintain or enhance reliability. The GIS substations are designed within the framework of the transmission system policies[16] and technical specifications[17] agreed with ESB and published by EirGrid. The topologies used and their extension designs are considered adequate for the design and operation required by the power system.

To meet our carbon emission targets, flexible network technologies, such as Dynamic Line Ratings (DLR) and Dynamic Power Flow Controllers (DPFC), need to be investigated and trialled. These technologies can provide a means to reduce network congestion, act as an alternative to extensive new network build,

[14] https://www.eirgridgroup.com/about/innovation-and-research/
[15] https://www.eirgridgroup.com/site-files/library/EirGrid/2022-Innovation-Report-v1.2.pdf
[16] https://www.eirgridgroup.com/site-files/library/EirGrid/Policy_Statement_3_Busbar_Configuration_v4.pdf
[17] https://www.eirgridgroup.com/site-files/library/EirGrid/1-GIS-Functional-Specification.pdf

provide system services/operational flexibility, maximise utilisation of existing network assets, enable greater output from RES-E generation hubs and create potential economic/reliability benefits.

Flexible network technologies such as DLR and DPFC maximise the utilisation of existing assets, thus reducing network congestion. This may allow for the deferment of infrastructure developments for which delivery may be challenging and support reduced dispatch down for variable renewable energy source generation. DLR installations enable the use of real-time rating limits determined from the live environmental conditions and DPFC allows system operators to manage power flows through the network by encouraging power flow along alternative circuits that are complimentary, or under-utilised, pathways therefore easing congested areas of the network.

Under EirGrid's Flexible Network Strategy, DLR and DPFC are ready for immediate deployment as identified through SOEF. Both technologies are crucial for Ireland and Northern Ireland to achieve their respective 2030 climate action targets.

EirGrid will continue/initiate the following actions to enhance the use of these technologies:

- Investigate and scope out what is required for the wide scale roll out these technologies to support the respective 2030 objective.
- Complete a cost benefit analysis for the implementation of the Flexible Network Strategy to support investment decision-making for the deployment of flexible network technologies.
- Develop a roll-out strategy and identification of candidate circuits for the integration of flexible network technologies in Ireland and Northern Ireland.
- Lead new trials and support existing trials by progressing demonstration projects with asset owners in Ireland and Northern Ireland.

2.3. Consultation questions

2.3.1. Question 1

As a result of the consultation questions last year, EirGrid have agreed to provide more detail on projects in Chapter 5 including their drivers, needs, location, estimated completion, EirGrid Capital Approval dates (GW3), Project Agreement with ESB dates (GW6), forecast energisation date (ECDEI), capital project number (CP No.) and, next step in the six-step process for developing the grid. EirGrid have also provided more information on whether the project is developer led, TSO led or DSO led. In your view, does the content and format of the document adequately provide this information? Does this paper raise any concerns around delivery capability considering the challenges ahead? Does the document outline sufficient actions to address the drivers and needs presented? If not, please highlight the specific areas where additional actions may be required.

Comments received

- Good information on specific projects themselves. Opportunity for more detail on why these projects are required, and how they will address some of the issues in the surrounding areas.
- Several instances outlining needs for network reinforcement but inadequate information as to why it is needed, and how these projects will operate together to support the grid security in the longer term.
- Project descriptions lack detail on the challenges of delivering that specific project or any clarity on expected timelines, and the effects these challenges could have on the timeline. Detail on challenges at a project level rather than regional level would be useful.
- Would be useful for more dates to be shown under each project description as well as in the final summary table for the region. (GW3, GW6, ECDEI, CP No., next step)
- Provide a note confirming system operations have sufficient resources to deliver on the programme of works outlined in the TDP.
- Identify which projects require system operator to apply for planning permission.
- Inclusion of 'construction commencement' date could be included.

- EirGrid should identify key grid projects to develop grid capabilities to meet 2030 renewables targets.
- Establish a list of ‘priority projects’ for 2030 in separate section of TDP to be updated year by year as delivered. The reason for this is to give stakeholders confidence that the 2030 network is being delivered in a timely manner, identifying any delivery dependencies or interlinkage risk.
- Reporting by topic as well as geographical zone. Propose to EirGrid to solicit a list of potential topics from stakeholders and use the most requested ones to create this reporting view for future TDPs.
- It is difficult to determine which projects are "new" and which are "active". It prevents stakeholders from analysing the potential impact of new projects on reducing existing constraints.
- It is unclear which of the 102 new projects are aimed at capacity creation, modernization of existing infrastructure with like-for-like replacements, or have joint drivers with new projects that result in increased network capacity. The lack of clarity prevents a detailed TDP assessment of constraint management.
- New construction and modernisation projects could be separated into different chapters or specify whether there are joint drivers with capacity building investments.
- Larger, more strategic projects lacking sufficient detail on drivers and needs or how the projects address them. Significant developments necessary towards end of TDP not really discussed.
- It is not clear from the TDP whether EirGrid is actively planning for the future network. Concerns that most projects have energisation dates within the next 2-3 years, seem to focus only on existing grid issues.
- For the challenge of achieving 80% RES-E by 2030, it would be more effective and cost efficient to deliver a minimum of eight bays for substation such that connection of new renewables can be facilitated in the least amount of time avoiding extension works and the associated network outages that go with these works. This approach should be applied to all developments undertaken by the TSO/DSO. Delivering projects with minimum levels of equipment does not help future network developments to be ready to connect new renewables projects.

Our response

The TDP seeks to standardise the reporting of projects into defined categories. These are described in further detail in Section 4 (Planned Network). Information is provided for each project including project drivers and needs.

The TDP provides project information at a snapshot in time. It presents our plan to develop the network through specific projects to meet transmission system needs over the next ten years in line with EirGrid’s statutory and licence obligations.

It is preferred to maintain the structure of the report by providing all timeline data in the tables in chapter 5.

Candidate solutions identified as part of our SOEF analyses results are always considered and evaluated in our Framework for Grid Development. Once any of those need or solutions progress through the Framework and an investment decision is approved, the project can be listed in the TDP.

Regarding the projects reporting, incentives and information, please refer to detailed explanation of PR5 in section 2.2.2.The TDP describes the project categories in Section 4 and classifies and reports the categories of each project in the tables in Section 5. The drivers and building capacities are also detailed in the project descriptions contained in Section 5. It is believed that a new chapter to specify new building is not necessary. However, for the next iteration of the TDP, the structure of chapter 5 will be reviewed to see if the same information can be organised in a way that lists new building first and then uprates and reinforcements.

As indicated in section 2.2.1, the draft TDP 2023 contains a list of the projects that received capital approval to move forward through the framework for grid development. SOEF v1.1 and the new version of Tomorrow’s Energy Scenarios focus future network assessments, keeping their focus in the 2030 targets and beyond. Once, the candidate solutions are assessed and approved, the projects are listed in the TDP.

As commented in section 2.2.6, the GIS substations are designed within the framework of the transmission system policies and technical specifications agreed with ESB and published by EirGrid. The topologies used and their extension designs are considered adequate for the design and operation required by the power system.

2.3.2. Question 2

In EirGrid's consultation response paper for TDP 2021 – 2030 they indicated that they were investigating ways to provide developers and other interested parties with more timely information on project delivery and expected completion dates. Has this been addressed satisfactorily in the 2023 – 2032 TDP, in your view?

Comments received

- Clear tabulated information provided for delivery and completion dates encouraging. Would be useful to show this under each project description.
- Integrating NDP should provide more timely updates to projects on quarterly basis, when paired with proposed interactive map.
- Information including project milestone dates should be provided for all projects once need confirmed (from step 2 of 6 step framework). Online register updated with real time project information would be useful. Often few months out of date by time of NDP.
- It is important to have accurate inputs with measurables outputs.
- Ensure the alignment of the freeze date and NDP data to avoid risk of divergence in content. If reported projects in both do not align, these differences should be reconciled and reported on in the TDP.
- Historical and completed projects should be removed from the NDP or moved to a 'complete' list.
- Concern document does not address CAP 23 infrastructure requirements.
- Focus of TDP should be less of a progress report, more of a planning document detailing how constraints, challenges, and opportunities of the next decades will be addressed.

Our response

Regarding the projects reporting, incentives and information, please refer to detailed explanation of PR5 in section 2.2.2.

The TSO continually seeks to improve the quality and accuracy of the infrastructure delivery information that it provides to stakeholders. EirGrid advises that there are no plans within PR5 period to provide real-time project or outage information to stakeholders, however these large-scale system projects may be considered for PR6.

EirGrid publishes the NDP on a quarterly basis to communicate updates and changes to the portfolio to stakeholders. In such cases we endeavour to communicate with and mitigate impacts on customers. The TDP is ensured to be aligned with the NDP, specifically with the Quarter 4 2022 release. As this current publication, future TDPs will be aligned with NDP with the aim that there will be small gap between the first publication of TDP for consultation and the latest NDP release.

The Climate Action Plan (CAP) 2023 sets targets to be achieved by EirGrid. Among the most important measures in the CAP 2023 is to increase the proportion of renewable electricity to up to 80% by 2030 and a target of 9 GW from onshore wind, 8 GW from solar, and at least 5 GW of offshore wind energy plus 2 GW for green hydrogen production. All the infrastructure requirements to meet these targets are assessed in SOEF and are included in the scenarios that show our vision of the future.

Based on both licensing and statutory obligations, the nature of the TDP itself is to report/list projects that have received capital approval and are going to be constructed. Challenges and opportunities will be addressed and studied in SOEF and in the coming version of Tomorrow's Energy Scenarios. Information regarding how the constraint will be addressed can be found on the Constraint Reports for Solar and Wind published on EirGrid website.

2.3.3. Question 3

The TDP currently provides general and non-project specific reasons for changes in project status e.g., from Active to On Hold or Removed. In response to the previous CRU consultation paper, stakeholders asked for more information on project status change and reasoning behind status changes. In EirGrid's response they stated they are "happy to include more detailed reasons on project changes in future TDP reports if they are available, noting that ultimately the asset owner carries out the actual work on the system". Has this, in your view, been adequately addressed in the 2023 – 2032 TDP?

Comments received

- Some respondents found there to be adequate information provided, while others were not satisfied with the level of transparency
- Information for active to on-hold found to be generally adequate. There is a request for the inclusion of specific reasoning for each project rather than high-level global reasoning
- Status change of CP1139 given as an example of insufficient information, with a 12-month delay added between Q3 NDP 2022 and Q4 NDP 2022. This would have been a prime example for detail to be provided on the causation. Request for EirGrid to give stakeholders the information on project status changes both in the TDP when the status change occurs at the time of drafting, and at least in the commentary section of the NDP Publication requested
- Any project status change which may result in additional constraints should have information provided to enable assessment of potential impacts to commercial activities. Allows for more accurate pricing in risk of grid delivery into commercial considerations – could lead to more competitive RESS and ORESS auction bids, rather than being forced to operate off 'worst-case' assumptions in absence of information.
- No information if update of TES will impact the needs case of investments in draft TDP and if this would need to be updated to reflect material changes.

Our response

Regarding the projects reporting, incentives and information, please refer to detailed explanation of PR5 in section 2.2.2.

The next iteration of Tomorrow's Energy Scenarios (TES) is currently being worked on and will define the scenarios used to assess the network based on EirGrid's vision and responses to its public consultations. Based on the scenarios defined in TES, Tomorrow's Energy Scenarios Need Assessment outlines the needs of each scenario. Following TESNA further work will be carried out to identify the solution to those needs. As needs and candidate solutions progress through the framework for grid development, they are included in the TDP. It can be assured that the impact of TES will be more obvious in terms of which new capital projects will be reported in future versions of the TDP. Any impact in the case of investment needs will be reported in the TDP after evaluation and reported in other documents such as the Price Review reports.

2.3.4. Question 4

Last year, CRU proposed that the TDP should include a link to the related PR5 submission from EirGrid. EirGrid is required to publish quarterly updates on the progress of all its transmission infrastructure projects as set out in CRU/20/154, the CRU's PR5 Regulatory Framework, Incentives and Reporting Decision Paper. It is important to mention that from this version of TDP onwards, the main input from which the list of reported projects is obtained is the Network Delivery Portfolio (NDP). Do respondents consider this NDP approach helpful, and if so, is there related information that should also be considered?

Comments received

- Quarterly NDP considered positive and helpful. Suggestions to remove completed projects and focus on live projects, ensure all projects have milestone dates, and the combination of the Guidance and Publication Documents
- Request to include commentary on quarter to quarter changes, risk assessment and impact form any noted project changes to the delivery of 2030 targets.

- Suggestion for inclusion as an appendix to TDP to further aid transparency
- Request for NDP to include milestone dates for projects in early stages of development or there is a risk a project could drift with little progression before entering step 3 or 4
- Useful if figures provided for devex and capex spend as % of total capital approval/budget to provide an indicator of project progress
- It is not clear that this proposal represents the best and most effective approach. In this regard, the Eirgrid PR5 submission is a document which lays down the Transmission requirements to the Price Review 5 and therefore, the rationale for inclusion is not clear. In contrast, a mechanism to ensure that the PR programme is achieved as per the outline programme when agreed would be very beneficial.
- Use of single unconstrained scenario creates risk to effective TSO planning of network reinforcements targeted at reducing constraints. Irish system is highly constrained. In developing a plan to reduce/remove constraints, the use of an unconstrained scenario may result in suboptimal outputs which does not factor all network needs. Key concerns:
    - Little information on which scenario was used. This will impact network reinforcement investments depending if it is high/low ambition scenario. Potential for underdevelopment of infrastructure.
    - Use of an unconstrained scenario to determine required reinforcements may be inefficient in directing investment. Altering process to consider constraints, in short-medium term, will aid in ensuring the correct number, size and location on investments are progressed

Our response

There is a comprehensive reporting framework in place for PR5 which is set out in the PR5 Reporting and Incentives decision as part of CRU/20/154. This includes the requirement to publish a quarterly portfolio update for stakeholders (the NDP), to develop two annual publications; the Joint Annual Performance Report and the Investment Planning and Delivery Report and to carry out the works outlined in a number of incentive multi-year plans. These reports include both summary and detailed information relating to the performance of the NDP and the PR5 Network Capex allowance. EirGrid also publishes updates on its website for specific large scale projects and programmes including links to supporting information.

EirGrid believes that this level of detail, across a portfolio of ca. 350 projects, and a number of communications channels, represents the most efficient and appropriate method for providing project and progress updates. The TSO continually seeks to improve the quality and accuracy of the infrastructure delivery information that it provides to stakeholders. EirGrid advises that there are no plans within PR5 period to provide real-time project or outage information to stakeholders, however these large-scale system projects may be considered for PR6.

2.3.5. Question 5

Is there a clear process for the prioritisation and reprioritisation of projects in the 2023 – 2032 TDP? Do you have any suggestions in relation to this?

Comments received

Several respondents found the process of prioritisation and reprioritisation to be unclear, with the following comments made:

- There is no clear description of the process or factors for progressing needs to projects, or how projects then progress through early steps of the Grid Development Framework.
- An explanation for reprioritisation of projects should be included.
- Progression of projects through the early steps of the grid development framework is unclear Where project prioritisation has occurred it would be useful if there was a note as to how projects were prioritised, and what the resulting impact of this is.
- There was a proposal that project delivery management boards be set up for each of the six regions identified in the TDP, similar to the board established between EirGrid and ESBN for South West 220 kV projects delivery. It was proposed that these boards would monitor project delivery

as projects moved from TESNA to the TDP and through the framework until energisation. The belief is that there should be representatives from the System Operators, CRU, DECC, and industry representatives which could then feed into a SOEF Advisory Council which would oversee the delivery of SOEF.

- Presenting how underlying economic assessment is used to secure best value for consumers or greater clarity on how TES feeds into network reinforcement decisions would give further transparency.
- A collaboration mechanism enabling developers partake in relation to contestable infrastructure development also key and particularly important in relation to offshore wind developments. The draft TDP has several new projects relating to RESS 1, RESS 2 and ORESS 1 which are not reflected in the previous TDP with no infrastructure projects specifically included to address future auctions.
- Development needs on constraint alleviation should be subject to a Cost Benefit Analysis at earliest possible point, with aim to determine which solutions to the challenge is optimal from consumer perspective. Relevant solutions should then be incorporated into prioritisation process, so those of longer duration are effectively scheduled for earlier start date.

Our response

EirGrid uses a consistent project planning process to explore options and make decisions. This means we follow the same steps for every project. The decision-making tools EirGrid uses, and the amount of engagement carried out at each step, depends on the scale and complexity of each project. More information on how EirGrid develops its projects, and how stakeholder can participate is published on our website[18].

EirGrid has its own internal processes for reviewing and progressing needs and candidates solutions. Importantly, to help project reporting and give a regional view to our TDP EirGrid groups counties together creating regions, but in its power system studies the generation portfolio is modelled again the demand forecast, carrying out separately for Ireland and Northern Ireland, and jointly on an All-Island bases.

As answered in question 3, TES feeds into network reinforcement decision by defining the scenarios used to assess the network and then outline the needs of these scenarios in TESNA. Once TES and TESNA are published, needs and candidate solutions that progress through the framework for grid development will be included in future TDPs.

Regarding feedback received about a collaboration mechanism enabling developers partake in relation to contestable infrastructure development, particularly in relation to offshore wind developments, EirGrid is looking at this whole area, but it is at an early stage. As always, EirGrid will communicate any decisions/processes through all its appropriate channels.

The government is still developing its offshore renewable development plans (OREDP II)[19] and EirGrid is also engaged with ENTSOE on a wider offshore development plan ONDP[20].

The decision-making process for projects that are evaluated in the EirGrid's Framework for Grid Development are analysed using a multi-criteria assessment (MCA) which evaluates five criteria: technical, economic, deliverability, environmental and socio-economic. For development needs on constraint alleviation, all five criteria must be considered, and purely economic aspects will not always prevail. EirGrid believes this is the appropriate oversight mechanism.

EirGrid advises that investment decisions are made at the end of steps 1-3 of its framework for Grid Development following a rigorous assessment which includes using the multi-criteria decision-making approach within the six-step process. The appropriate solutions are then progressed through the consenting, detailed scoping and design phases to construction and project delivery with ESB Networks.

[18] https://www.eirgridgroup.com/__uuid/7d658280-91a2-4dbb-b438-ef005a857761/EirGrid-Have-Your-Say_May-2017.pdf

[19] https://www.gov.ie/en/publication/71e36-offshore-renewable-energy-development-plan-ii-oredp-ii/

[20] https://www.entsoe.eu/news/2022/09/12/offshore-network-development-plans/

2.3.6. Question 6

Have network constraints identified by respondents to the consultation of the TDP 2021-2030 been adequately addressed by EirGrid in the TDP 2023 – 2032, in your view? Are there any current network constraints that are not included in the TDP and will not be resolved by the successful completion of projects set out in the TDP 2022 - 2032?

Comments received

- Concern at the lack of reinforcement shown in the 2029-2032 period, considering the pipeline of RES projects planned. EirGrid's revision of the "Tomorrow Energy Scenario's System Needs Assessment" should reconfirm the needs identified in the 2019 revision, as well as additional needs with the current planned pipeline of renewable projects.
- A responder would be happy to provide EirGrid with their Developer Project Pipeline as an input to the next assessment
- There are many network constraints which have not been included, and EirGrid's ECP 2.1 and ECP 2.2 constraints reports show many areas, particularly in the northwest and midlands that have high constraints even after completion of the reinforcement listed in the TDP.
- Belief that many constraints in ECP2.1 reports for wind and solar and SOLAR AND SOEF missing in TDP
- Belief longer term view needs to be taken to ensure investment made this decade will meet needs in longer term (2030 and 2050 targets). Especially in Western region – significant resources but left behind in terms of network development
- CAP 23 set out targets for dispatch down to be achieved, it is questionable if this plan is going to address what are legally binding targets
- Queries as to specific grid developments in the Midlands, the Cork region (related to the connection of the Celtic Interconnector), and the North-West resulted in EirGrid answering them by grouping the specific projects to address the topics queried in their report in their response to feedback on the TDP 2021-2030. The application of this topic grouping in parallel with the use of a CBA process will aid in the transparency of EirGrid's actions to deliver on its PR5 incentives such as Constraints and RES-E.
- Previous concern North Connacht project will be at full capacity by time it is commissioned not been addressed.
- The existing infrastructure is an enormous limiting factor, particularly in relation to ORESS auctions and for grid connection of OWF. The lack of proper infrastructure close to shore or interconnection projects is a clear limiting factor to the achievement of the Government's ambitious offshore wind target. The update to the 2018 Electricity Interconnection Policy, as required by CAP 23, due to be published shortly, should be referenced given that an increase in interconnection capacity would provide stimulus to Ireland's nascent offshore wind sector given the potential of offshore wind to significantly increase the renewable energy base in the State and to further diversify supply.

Our response

The integration of large amounts of non-synchronous variable renewable energy sources poses challenges for the transmission system, including network congestion, or constraints. Our approach to facilitating renewables and reducing constraints includes:

- The roadmap of SOEF which describes the all-of-system challenge faced when accommodating large amounts of variable renewables and sets out the system changes required, including new candidate network reinforcements to reduce constraint;
- Investing in the transmission system and interconnection; and
- Researching, developing and adopting innovate solutions and technologies.

Network reinforcements described in TDPs are vital element to facilitating renewables and reducing constraints.

The inclusion of needs and candidate solutions in TESNA and SOEF will be reported as network developments progress in EirGrid's Framework for Grid Development. The number of candidate solutions from SOEF considered in ECP reports and TDP will change and/or increase in future versions of the documents as network developments progress and issues are addressed.

EirGrid has been liaising with the Department of Environment and Climate and Communications, DECC, in relation to the 2018 Electricity Interconnection Policy and it is DECC's responsibility to communicate the publication of the policy. As Ireland accommodates one of the highest global percentages of variable renewable generation on the grid, EirGrid acknowledges that the electricity system must increase its flexibility further and remains focused on making this happen. As outlined in the CAP 2023, EirGrid will be engaging with the requirement to deliver at least three new transmission grid connections or interconnectors to Northern Ireland, Great Britain and the EU.

2.3.7. Question 7

As stated in Section 5.4 of the 2023 – 2032 TDP, "...there are transmission capacity constraints getting power into and around Dublin". Does the plan clearly outline the problems and address the solutions to the constraints in the Dublin area? Should there be a dedicated chapter specifically relating to Dublin in the TDP?

Comments received

- Respondents indicated there was good high level information on key projects in the Dublin area but insufficient information outlining and detailing critical issues and solutions.
- There is a case for inclusion of a chapter to delve deeper into some of the challenges in the network and how they will be addressed by the projects in the TDP given the recognition of Dublin as a major load centre
- It was difficult to establish effectiveness and efficiency of projects to address constraints in and around Dublin when mixed with other grid projects for the region as a whole.
- Bottleneck in midland network which provides power into Dublin that needs to be addressed. Network reinforcements getting power into and around Dublin could merit its own chapter with focus showing improvement removing bottlenecks.
- One respondent commented that dedicated chapters for other key areas of infrastructure constraint, or projects addressing specific challenges (offshore wind, hydrogen, interconnection) would also be required if there was a chapter for Dublin.

Our response

At EirGrid, we are making the grid ready to carry up to 80% of Ireland's electricity from renewable sources by 2030, as set out in the Government's Climate Action Plan. We acknowledge that EirGrid needs to add more energy from renewable sources and the network will need to carry more power to be carried over longer distances.

As commented in previous consultation, several of the candidate solutions presented in the Shaping Our Electricity Future Roadmap report cover the areas mentioned; Dublin, Cork, and the Midlands. These solutions are being assessed by EirGrid with the aim of identifying the optimal solution in each case and progressing it through our Framework for Grid Development.

In terms of projects aimed at resolving constraints in the Dublin area, East Meath-North Dublin Grid Upgrade (also known as Capital Project 1021) has received capital approval and has been included as committed project for the first time this year in section 5 of the TDP. This project will help to transfer electricity from Woodland 400 kV substation to a new 400 kV GIS busbar at Belcamp substation with a new 400 kV underground cable linking the two substations. In the surrounding area, the Kildare-Meath Grid Upgrade is a proposed development that will help to transfer electricity to the east of Ireland. It is also known as Capital Project 966. The Kildare-Meath Grid Upgrade will add a new 400 kV underground cable that will be connected between Dunstown substation in Kildare and Woodland substation in Meath.

In addition, EirGrid has launched its programme Powering Up Dublin to transform and modernise the city's electricity infrastructure, so Dublin can continue to develop and thrive, while increasingly using power from renewable sources. In its first phase, EirGrid and its partners, are installing over 50 km of cables across the city. Upgrades will also take place in a number of substations to support Dublin's electricity substations located around Dublin. More information can be found in EirGrid's website[21]. The projects are also described in the chapter **Cable Replacement in Dublin** of section 5 of the TDP.

2.3.8. Question 8

The North West has, for some time, been identified as being an area where there is particular difficulty with network development (Section 3.2 of 2021 – 2030 TDP). The North West Project (CP0800) was cancelled and removed from the PCI list in 2021. There is one capital project covering The North West Project, CP1233 Donegal – Srananagh corridor. This project is reported as a Project in Early Stages in Section 6.2 and is currently under review by EirGrid's Transmission Power System Planning area. Is this approach adequate to address this particular difficultly with network development, in your view?

Comments received

- It was noted by several respondents that there was no clear plan or project in the Northwest considered to improve inter-regional power flows, something key to facilitating more renewables in the area.
- Concern projects identified have been 'under review' with little progression, giving no confidence about timing, detail or that it will be completed. Cancellation of CP0800 shows that even when a project appears to be going through development stages it may not be completed.
- Uprating of circuits in the region welcomed but the overall solution not to the level required to realise the potential for new renewables growth, raising concern dispatch down could continue to be seen in the region
- Regarding CP1233, it is not clear how it is being progressed as no project milestone dates are included.
- ECP 2.2 constraint reports include nearly all candidate reinforcements from SOEF but still higher level of constraints in NW than elsewhere. This and future TDPs continue to fall short when it comes to grid development in NW.
- Suggestion infrastructure of 400 kV or HVDC should be developed from Bellacorrick to Tarbert, Moneypoint, or Dublin.
- Long delays mean the amount of renewable generation seeking to connect in Donegal is in excess of local demand and capacity of network. TDP does not give sense that this and other potential projects in the area are being prioritised. Also, inclusion in proposed Broad Areas of Interest for offshore generation not acknowledged.
- Potential improvements to the inclusion of early stage projects: classification of source, as much detail as possible provided, especially the outcome of a CBA.

Our response

The need for new network development in the North-West of Ireland, between Srananagh substation and substations in county Donegal remains and has been identified in SOEF. However, the scope of the potential solutions under consideration has expanded to include additional technologies, and to include investigation of connection to several substations in Donegal. As commented, CP1233 considers the scope of the cancelled CP0800 and it is expected to become a committed project in coming iterations of the TDP.

The North-West area faces a number of challenges in developing the network. Due to the topology of the network and relatively low levels of network capacity, outage opportunities are limited, and it is often not possible to carry out multiple simultaneous circuit outages for maintenance, expansion, new connections

[21] https://www.eirgridgroup.com/__uuid/71cf54dd-a163-4def-b8cd-b5a02a81cc11/index.xml

or substation work. A planned outage in this area can have a major impact on the local grid and the wider network, often constraining generation in the area.

In order to enhance the network in this area, the following projects were completed:

- Letterkenny 110 kV Station – Two new couplers and relocation of 110 kV Bay (CP0740)
- Castlebar 110 kV Station – Busbar uprate (CP0771)

In addition, the current TDP has reported the following projects in the area:

- Sligo 110 kV Station – Srananagh 1 & 2 bay uprates (CP1156)
- Binbane – Cathaleen's Fall 110 kV circuit thermal capacity (CP1079)
- Dalton 110 kV Busbar (CP0907)
- Glenree – Moy 110 kV line uprate (CP1155)

A circuit thermal capacity project in Flagford – Sligo 110 kV (CP0982) is also in its early stage and it will appear as a committed project in future versions of the TDP.

2.3.9. Question 9

In the context of recent Climate Action policy and Security of Supply programme, does the report provide sufficient information on how projects would benefit carbon ceilings and security of supply?

Comments received

- There is information provided on which projects have security of supply as a key driver and how the project aims to improve security of supply but could be expanded on.
- Little information regarding contribution of individual projects to carbon ceilings was reported by all respondents.
- One respondent was of the belief a detailed assessment on carbon ceilings would be difficult to include and wouldn't be a useful way to utilise EirGrid resources. However, given the constraint that overall grid development can have on abiding by the carbon budgets they do believe it is something that should be considered further in the TDP.
- Query as to when reporting of priority projects with the ability to facilitate the transition of the power sector to meet both carbon ceilings while not increasing risk to security of supply can be included in the TDP without delaying publication
- No definition of what security of supply means practically, it is used as a needs case for almost all investments instead.
- Risk of reactive approach without anticipatory investment – resulting in generators being curtailed or constrained off and higher than necessary cost to consumers.
- Further detail on the strategy and steps to be taken to allow targets to be met regarding the recent climate action policy and security of supply programmes, along with more information on the potential benefits for the projects in these contexts.

Our response

The updated version of SOEF Roadmap, captures the changes of the electricity policy context and informs a pathway to achieving energy and climate ambitions and objectives across both jurisdictions, Ireland and Northern Ireland. It builds in previous Roadmap, published in November 2021, and plans for an electricity system that can deliver up to 80% RES-e by 2030 in both jurisdictions.

This new version of SOEF Roadmap also considers how the electricity system in Ireland complies with the requirements set out in the sectoral emissions ceilings for electricity to 2030. The SOEF Roadmap takes into account the carbon ceilings along with the other CAP requirements and the amount of renewables, to define the candidate solutions to be evaluated in our framework for grid development. As mentioned in previous sections, once these candidate solutions have progressed through the framework for grid development and received capital approval, they are reported in the TDP.

Security of supply generally addresses two separate issues: the availability to meet the demand and the ability to reliably transport the energy. Further explanations can be found in section 2 Investment drivers and needs of the TDP.

As TSO, EirGrid is obliged to develop a safe, secure, reliable, economical, and efficient transmission network to meet all reasonable demands for electricity, in accordance with legal obligations. EirGrid plan the development of the transmission network taking account of the needs of the transmission system and targets set by the CAP. Those needs of the transmission system and the targets set by CAP have been taken into account in SOEF v1.1 to propose the candidate solutions to be evaluated through the framework for grid development seeking for capital approval and appear in future version of the TDP.

2.3.10. Question 10

The TDP includes projects once they have moved past stage 3 of 6, do stakeholders consider this provides sufficient information on a project lifecycle?

Comments received

- Acknowledged that while level of detail for stages 4-6 cannot be replicated for earlier projects, there is a need to provide more information beyond table summary for these. Outline of needs for projects and some context on what they will contribute would be useful, along with further detail on drivers
- Project milestone dates are key for tracking progress of early-stage projects
- Clear date for construction commencement would be useful as it adds confidence to energisation dates.
- All transmission infrastructure projects identified as needed should be included, especially those that are a priority to 2030 targets. Past drafts have been based solely on committed projects, forward-looking projects determined as needed at stage 1 should also be included, such as in the offered Chapter 6 – Projects in early stages of development.
- Any inefficiencies in the relation between the TSO and TAO should be promptly resolved by the CRU.

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.

Please refer to NDP information provided in Section 2.2.1.

2.3.11. Question 11

Should consideration be given to improving the accessibility of the TDP, for example, would an online map assist stakeholders in accessing and engaging with the projects?

Comments received

- An online map would be considered a useful resource by all respondents, as it would provide a more accessible interactive resource, with the ENSOE map for 10 year Network Development Plan given as a working example
- Noted that it would be helpful to have the ability to filter based on key properties: driver, stage, types of work, inclusion of a shape marker for priority projects, application of colour coding similar to NDP
- Due to resourcing issues across the industry, the burden for development of an online map system should only come when key issues of the development plan are addressed, those being a clear demonstration the network development plan can accommodate the GW levels mandated while

also achieving required dispatch down levels. Also noted that it should not impact TDP delivery timeline.
- Suggestion to also develop a Transmission Capability Heatmap like ESBN to advise on the suitability of locations on the grid to facilitate new capacity connections.
- Map linked to progress reports useful, but only if information is kept up to date

Our response

EirGrid is publishing an interactive map in response to this consultation.

This interactive map is a first edition containing only the projects reported in the TDP 2023 as committed project.

EirGrid believes that the visualization of the project information described in the document will enhance in its approach to reporting grid planning.

2.3.12. Question 12

Are there any other aspects of EirGrid's TDP 2021 – 2030 Consultation Report that have not been implemented to your satisfaction in the 2023 – 2032 TDP?

Comments received

- Would be useful to include measures on how the TDP addresses: Article 12, Article 13, SOEF reinforcements
- Concern for growing need for specialised personnel and resources to deliver increasing number of grid development projects. Ask to share in TDP staffing, resourcing, supply chain actions being taken to ensure timely delivery of offshore transmission grid – a key requirement for 2030 targets.
- Resourcing concern manifesting in the TDP 2023-2032 where "EirGrid will plan, develop, and own the offshore transmission system, which will ultimately be managed according to a centralised model." This offshore development work by EirGrid will be complex and demanding
- Supporting documentation not updated to reflect states binding policy targets and CAP objectives. No future RESS auctions infrastructure requirements considered. Without significant offshore wind, targets will not be achieved.
- Still more of a progress report on projects in relatively advanced stage of development. No information about other network developments needed by 2030, little on what is in early stage development but will be advanced/completed by 2030.

Our response

The TDP lists the committed projects and projects under development for the enhancement of the Irish transmission network, and it is prepared in accordance with EirGrid's statutory and licence obligations.

Article 12 and Article 13 of Regulation (EU) 2019/943 state Dispatching of power-generating facilities, demand response and re-dispatching, respectively. Generation projects moving forward through the framework for grid development are reported in the TDP. These units then become part of the energy market and are regulated by regulation such as (EU) 2019/943.

SOEF reinforcements have been assessed and the project that have progressed through the framework for grid development are reported in the TDP. As mentioned in section 1.3, a new table will be added in the TDP to link candidate solution from SOEF 2021 to Capital Projects reported in the TDP 2023.

The Offshore Renewable Energy Development Plan II[22], OREDP II, serves as an assessment and evaluation of the offshore renewable energy potential for the entire maritime area of Ireland's Exclusive Economic Zone. EirGrid's role in the formation of OREDP II is to inform on areas that may or may not be feasible from a grid perspective, technological limitations, and emerging projects such as the Celtic Interconnector and existing infrastructure such as EWIC. However, as part of an Enduring Regime EirGrid must also stay

[22] https://www.gov.ie/en/publication/71e36-offshore-renewable-energy-development-plan-ii-oredp-ii/

involved in the further resource assessments as well as the economic assessments running in parallel. Offshore projects progressing the framework for grid development will be published in future TDPs.

The Policy Statement on the Framework for Ireland's Offshore Electricity Transmission System[23] provides clarity for all stakeholders regarding the future development, operation and ownership of Ireland's offshore electricity grid, ahead of the first of three scheduled offshore wind-specific Renewable Energy Support Scheme (RESS) auctions that will enable Ireland to meet 5GW target by the end of this decade. As stated in the policy, the enduring centralised offshore grid model, with the offshore transmission system being planned, developed and owned by the TSO, and which will be arrived to coincide with the third offshore RESS auction, has been identified as delivering the maximum societal benefits, in terms of natural monopoly efficiencies such as offshore transmission coordination, reduced overall infrastructure requirements, coordinate public acceptance and ease of future proofing of technology.

Other network developments needed for 2030 have been analysed in the latest version of SOEF v1.1 and, as new candidate solutions move forward in the network development framework, they will be published in future PDTs.

2.3.13. Question 13

Do you have any other suggestions to improve the TDP?

Comments received

- Provision of further data on why changes to timelines occur.
- Adding a "whole-of-system" reporting process to gather and report on projects by topic such as constraint mitigations or addressing the impact of major infrastructure projects (e.g., the connection of the Greenlink and Celtic interconnectors) or accommodating major RES projects.
- The proposal by ESB Networks and EirGrid to develop a proposal to commence a pilot of "renewable hubs" to run in parallel with the opening of the ECP-2.4 batch window is very much welcomed. The proposal will be developed in the context of ESB Network's 'Networks for Net Zero Strategy' and EirGrid's 'Shaping Our Electricity Future'. As the CRU intends to publish a Consultation Paper in Q2 2023 which will contain further details on the principles and intended working of the pilot and how it relates to ECP-2.4, the publication of a decision in this regard should be advanced as quickly as possible and built upon given the significant benefits that can be provided by such a flexible approach going forward.
- Currently, although titled a Ten Year Development Plan, the plan reads more like a progress update and there is little sense of the longer term planning which should be taking place to meet future energy challenges (e.g. in relation to off shore generation off the west coast (in the context of OREDP 2) or for use of RE in hydrogen production). While these developments are in the early stages it would be expected that there will be operational projects before the end of this TDP (2032) and yet there is little reference to the process involved in meeting the infrastructure needs of such projects and timelines and stages EirGrid would envisage for them.

Our response

As commented in 2.2.2, EirGrid believes that this level of detail of the NDP, across a portfolio of ca. 350 projects, and a number of communications channels, represents the most efficient and appropriate method for providing project and progress updates. The TSO continually seeks to improve the quality and accuracy of the infrastructure delivery information that it provides to stakeholders. EirGrid advises that there are no plans within PR5 period to provide real-time project or outage information to stakeholders, however these large-scale system projects may be considered for PR6. In the interim, we will continue to improve upon the quantum of information and presentation of the quarterly NDP publication.

The pilot of "renewable hubs" is intended to facilitate increased volumes of distribution customers connecting to the network through advanced build or Renewable Hubs. The EirGrid and ESB Network

[23] https://www.gov.ie/en/publication/5ec24-policy-statement-on-the-framework-for-irelands-offshore-electricity-transmission-system/

propose that Renewable Hubs will be located at either new or existing substations where network capacity will be created in a timely manner based upon a known pipeline of projects with planning permission or in the planning process. More information regarding the Renewable Hubs Pilot Consultation Paper can be found in CRU's website[24]. Renewable Hubs projects progressing through the framework for grid development will be reported in future TDPs.

Longer term planning to take place to meet future energy challenges have been studied in the SOEF v1.1 published in June 2023. Longer term planning beyond 2030 will be assessed in the coming version of TES.

[24] https://www.cru.ie/publications/27522/

Appendix A: Stakeholders responses

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By e-mail to: edeegan@Cru.ie

Date: 23rd May 2023

Re: FuturEnergy Ireland Submission to CRU Consultation on EirGrid's Draft Transmission Development Plan (TDP) 2023 – 2032

Dear Eileen,

FuturEnergy Ireland recognises the Government's ambition set out in the Climate Action Plan and seeks to contribute up to 1 GW of new onshore wind capacity in Ireland in the period up to 2030. By leveraging a unique land bank which presents an unmatched portfolio of large high wind sites, this target can be achieved.

FuturEnergy Ireland welcomes this consultation and believes that a key component of achieving policy targets is a strong electricity grid with sufficient capacity to cater for future demand requirements and the renewable energy project pipeline.

We have set out a number of comments below on the CRU Consultation on EirGrid's Draft Transmission Development Plan (TDP) 2023 – 2032 and we have also included an appendix to this submission with responses to the specific queries raised by CRU in the consultation:

1. **Support Climate Action Plan RES-E and Installed Capacity Targets by 2030.**
   As noted in the consultation future iterations of the EirGrid Transmission Development Plan (TDP) should take account of the revised Climate Action Plan (CAP) including the requirement that Ireland generates at least 80% of its electricity from renewable sources by 2030. The timely development of the transmission system is a key enabler in facilitating an 80% RES-E target. The CAP outlines capacities of 9 GW onshore wind (with 6GW by 2025), 8 GW solar, and at least 7 GW of offshore wind by 2030 (with 2GW specifically for green hydrogen production).. However, this is unlikely to be achieved without parallel development of the transmission system to accommodate these renewable volumes.

2. **Identify and Develop New Circuits**
   There are areas of Ireland's transmission system that require new transmission circuits above those currently listed in this draft TDP. Examples of these area include regions in North Mayo, Donegal and parts of the Midlands as evident in EirGrid's Tomorrow's Energy Scenarios System Needs Assessment (TESNA) 2019, and this is

backed up by the latest WEI wind energy pipeline, however the projects for the North West and Midlands in the draft TDP only appears to provide grid capacity for existing generation, mainly from Gate 3, with little future proofing of new circuits. While a number of reinforcements from SOEF, including new 220kV circuits in the North West, are earmarked for delivery by 2030 they do not have any programme milestone dates against them in the TDP or the Network Delivery Portfolio (NDP) publication.

The draft TDP should include more projects to cater for the regional needs identified in the EirGrid TESNA 2019 and more of the solutions identified in the SOEF Roadmap. WEI continue to provide EirGrid with information on the wind energy pipeline which reaffirms the needs for grid development in the areas outlined above and we look forward to engaging with EirGrid on their next TESNA update later this year which should identify additional needs. We also note that the TDP is proposed to cover the period up to 2032, but it does not have any projects scheduled for completion after the end of 2029. We would query if there is an opportunity to progress new grid reinforcement projects now for delivery in the 2030 to 2032 period.

FuturEnergy Ireland believes that transmission projects for these areas should be progressed into development in parallel with the WEI wind energy pipeline and into future TDPs and SOEF roadmaps rather than waiting for generators to sign connection offers and become 'contracted' if Ireland is to meet its renewable energy targets. Projects need to enter and progress more quickly through the six-step Grid Development Framework. Preferred options and solutions for new circuits need to be identified and progressed earlier, particularly where cable is to be used, so that their consenting and delivery timelines can be confirmed and expedited to ensure that RES-E and Installed Capacity targets are met for 2030 (and beyond) at best overall cost to the consumer by enabling more competition with a continuing pipeline of shovel ready projects and ensuring that a strong and robust grid network is developed.

3. Need For More Detailed and Up to Date Information

FuturEnergy Ireland acknowledges that the production of the TDP is a statutory requirement and a condition of EirGrid's TSO licence, but we would like to stress the need for more up to date information on grid development which would be of more benefit to industry and would alleviate some of the workload on the TSO. While we welcome the efforts to more closely align the publication of the Draft TDP with the data freeze date we have outlined a number of suggestions on this below:

i. The data freeze date and subsequent gap in information in the TDP publication is an issue which results in information often being out of date and of little benefit. The freeze date of 21 December 2022 for this TDP means that more up to date information emerging from EirGrid's SOEF V1.1 update Roadmap will not be fully taken into account in the final TDP. We believe it would be more beneficial for EirGrid to establish a live register of grid development projects which could be published and kept up to date on the EirGrid website similar to what is done for quarterly Network Delivery

Portfolio publications, albeit with more detailed information as outlined below.

ii. We welcome the additional detail that is being published in the Network Delivery Portfolio (NDP) publications, but we believe 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. It would also be useful if the NDP and TDP indicated which projects require planning permission and which don't.

iii. It is unclear how projects are progressed through the grid development framework, particularly in the early stages, and more detailed information would allow for better tracking of project progress. It is also often unclear what weighting or importance is placed on each of the criteria in multicriteria decision matrix that EirGrid uses for projects when identifying preferred options. Some new circuit projects such as the Kildare Meath 400kV project seem to have progressed relatively quickly while others, including ones in the North West such as CP1233 Donegal – Srananagh Corridor were identified in the SOEF Roadmap nearly 18 months ago and do not appear to have progressed beyond Step 2 since then nor have they being assigned programme milestone dates in the last few NDP publications.

iv. 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. There are often limited updates on projects. If more information was provided this would help developers manage the associated risk of grid delays.

4. Leverage The Existing Transmission System and Use of New Technology

EirGrid has a proven capacity to be a leader in system integration of renewables through its work on the DS3 program, allowing levels of curtailment to be managed at world leading renewable penetration levels, and now on their SOEF Roadmap. We would encourage EirGrid to utilise their capacity for engineering innovation to manage constraint levels and create additional space for renewable generation through increased utilisation of smart network strategies. While this should reduce the need for significant new transmission system infrastructure in some parts of the network in the short term, the requirement for ongoing investment in new circuits remains to cater for the pipeline of projects referenced in EirGrid's TESNA 2019, and from WEI analysis as well as EirGrid's ECP 2.2 constraint reports. EirGrid's SOEF Roadmap also outlined a number of solutions from the Technology Led approach that could be rapidly deployed. Solutions such as dynamic line ratings and power flow control should be used more widely and fast-tracked to provide capacity while line uprates and new circuits are being delivered. We hope to see these being more widely used in the next update to the SOEF Roadmap which is due in June.

5. Future Proofing and Substation Extendibility

EirGrid should also consider future proofing 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. A voltage uprate to 220kV could be accommodated in future if needed with minimal substation upgrades. This would also make it easier for the grid to 'flex' to accommodate any upward revision to 2030 targets in the next few years while also allowing for a better starting point for 2050 targets. It may also mean that EirGrid could defer having to go back to local communities to install additional circuits in future. We note that when we suggested this example previously, EirGrid outlined that they do not recommend such designs, as a 220 kV cable cannot be accommodated in some of the remote parts of the network due to electromagnetic transient issues. However we believe that an engineering solution could be found which may involve installing additional equipment along the cable route to mitigate such issues, and which would minimise potential future impact to communities due to the possibility to further utilise existing grid routes.

Gas insulated switchgear (GIS) stations are not readily extendable. Whatever is built is often seen by the System Operators as a final solution and it is not possible to add new bays. EirGrid should use the WEI wind energy pipeline when planning new 220kV or 400kV GIS stations so that they can be laid out to allow for a high RES-E system with sufficient bays on 110kV busbars to accommodate existing circuits, existing and future station inter-bus transformers, reactive power equipment, power quality equipment and new generator, battery or line/cable bays. In existing GIS stations even 8 bay GIS 110kV busbar arrangements can fill up relatively quickly and with no space in many GIS buildings, new stations have to be built to accommodate even one additional connection. This is in contrast to air insulated switchgear (AIS) stations in which new bays can be added more easily, often just by extending the existing busbar. Often GIS is used despite the additional cost to reduce station footprint size and gain social acceptance, but this would be negated if the GIS stations aren't planned correctly as multiple stations may be required due to a lack of extendibility. We note EirGrid's comments in the Consultation Report that they are overcoming challenges like future expansion of additional bays and additional voltage levels in GIS stations through the combined approach of our Operational Pathways to 2030 Programme as part of SOEF and investing in the transmission system. We would be interested in getting more information on this.

We would be very happy to engage with you further on any matter set out herein relating to this important consultation.

Yours sincerely,

[*no signature as e-version only*]

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Ciarán McNamara

Grid Manager

FuturEnergy Ireland

Appendix: Responses to Consultation Questions

Q1. As a result of the consultation questions last year, EirGrid have agreed to provide more detail on projects in Chapter 5 including their drivers, needs, location, estimated completion, EirGrid Capital Approval dates (GW3), Project Agreement with ESB dates (GW6), forecast energisation date (ECDEI), capital project number (CP No.) and, next step in the six-step process for developing the grid. EirGrid have also provided more information on whether the project is developer led, TSO led or DSO led. In your view, does the content and format of the document adequately provide this information? Does this paper raise any concerns around delivery capability considering the challenges ahead? Does the document outline sufficient actions to address the drivers and needs presented? If not, please highlight the specific areas where additional actions may be required.

We welcome the provision of this additional information.

It would be useful to know which projects require the SO's to apply for planning permission and which do not. It would also be beneficial for the Could the SO's also provide a note confirming that they have sufficient resources to deliver on the programme of works outlined in the TDP?

Q2. In EirGrid's consultation response paper for TDP 2021 – 2030 they indicated that they were investigating ways to provide developers and other interested parties with more timely information on project delivery and expected completion dates. Has this been addressed satisfactorily in the 2023 – 2032 TDP, in your view?

While the additional information that has been provided in the TDP and NDP updates is most welcome, we believe this information including project milestone dates should be provided for all projects once the project need is confirmed i.e. from Step 2 of EirGrid's 6 step grid development framework. We also think it would be useful if there was an online register that is updated with the project information in real time as information is often a couple of months out of date by the time it is published in the NDP update.

Q4. Last year, CRU proposed that the TDP should include a link to the related PR5 submission from EirGrid. EirGrid is required to publish quarterly updates on the progress of all its transmission infrastructure projects as set out in CRU/20/1546, the CRU's PR5 Regulatory Framework, Incentives and Reporting Decision Paper. It is important to mention that from this version of TDP onwards, the main input from which the list of reported projects is obtained is the Network Delivery Portfolio (NDP). Do respondents consider this NDP approach helpful, and if so, is there related information that should also be considered?

The NDP approach is helpful however for it to be effective all projects must have milestone dates against them. There are a number of new grid infrastructure projects without this information in the NDP including new circuit projects from EirGrid's SOEF Roadmap that are scheduled to be completed by 2030. As outlined above the NDP and TDP should also include project milestone dates for projects that are in the early stages of development

otherwise there is a risk a project could drift with little progression until it enters Step 3 or 4. It would be useful if figures where provided for devex and capex spend as a percentage of the total Capital Approval/budget to provide an indicator of project progress.

Q5. Is there a clear process for the prioritisation and reprioritisation of projects in the 2023 – 2032 TDP? Do you have any suggestions in relation to this?

There doesn't appear to be a process for the prioritisation and reprioritisation of projects outlined in the TDP. It is not clear how the needs are progressed into projects and how these projects are then progressed through the early steps of EirGrid's Grid Development Framework. Some projects appear to have progress through the early stages quicker than others. Where project prioritisation has occurred it would be useful if there was a note as to how projects were prioritised, and what the resulting impact of this is.

In relation to specific projects or regions of the grid, we propose that project delivery management boards be set up for each of the six regions identified in the TDP. These would be similar to the board established several years ago between EirGrid and ESB Networks for the delivery of the South West 220 kV projects, which worked very well. The boards would monitor delivery of projects as they moved from TESNA, into the TDP and through EirGrid's six step Grid Development Framework until they are energised. By comparison, no similar delivery board was established in the North-West and as a result the Renewable Integration Development Project (RIDP) has failed to make progress. These boards would oversee and ensure the successful delivery of the grid connections and reinforcements needed within the respective areas. We believe there should be representatives from the System Operators, CRU, DECC, and industry representatives which could then feed into a SOEF Advisory Council which would oversee the delivery of SOEF.

Network Constraints

Q6. Have network constraints identified by respondents to the consultation of the TDP 2021-2030 been adequately addressed by EirGrid in the TDP 2023 – 2032, in your view? Are there any current network constraints that are not included in the TDP and will not be resolved by the successful completion of projects set out in the TDP 2022 - 2032?

No. EirGrid's ECP 2.1 and ECP 2.2 constraints reports show many areas, particularly in the north west and midlands that have high constraints even after completion of the reinforcement listed in the TDP. We note there doesn't appear to be any reinforcement delivered after the end of 2029 even though the TDP goes to 2032. We expect the next iteration of EirGrid's Tomorrow Energy Scenario's System Needs Assessment to reconfirm the needs that were identified that were unaddressed in the 2019 assessment and to identify additional needs in the north west and midlands given the pipeline of renewable energy projects being progressed into and through planning in these regions. We

recommend that EirGrid use WEI's Developer Project Pipeline information as a key input to the next assessment.

Q7. As stated in Section 5.4 of the 2023 – 2032 TDP, "…there are transmission capacity constraints getting power into and around Dublin". Does the plan clearly outline the problems and address the solutions to the constraints in the Dublin area? Should there be a dedicated chapter specifically relating to Dublin in the TDP?

The plan sufficiently outlines the problems and address the solutions to the constraints in the Dublin area.

Q8. The North West has, for some time, been identified as being an area where there is particular difficulty with network development (Section 3.2 of 2021 - 2030 TDP). The North West Project (CP0800) was cancelled and removed from the PCI list in 2021. There is one capital project covering The North West Project, CP1233 Donegal – Srananagh corridor. This project is reported as a Project in Early Stages in Section 6.2 and is currently under review by EirGrid's Transmission Power System Planning area. Is this approach adequate to address this particular difficultly with network development, in your view?

There has been a lack of progression of grid reinforcement projects in the North West for over a decade with projects being identified and being put "under review" with little progression. The projects that have been identified in SOEF appear to address the need of generators that are there today but do not cater for the pipeline of renewable energy projects that are being progressed into and through planning. These renewable energy projects are well placed to deliver on 2030 targets. The main issue that impacts their deliver at this point is grid capacity.

Of the projects that are identified in SOEF, it is not clear how CP1233 Donegal – Srananagh corridor is being progressed as there are no project milestone dates include in the TDP or the NDP. It appears to have been in Step 2 since November 2021 following the publication of the SOEF Roadmap.

EirGrid ECP 2.2 constraint reports include nearly all of the candidate reinforcements from SOEF but there is still a higher level of constraints in the North West than elsewhere on the grid so it is important to note that as things stand this and future TDPs continue to fall short when it comes to grid development in the North West.

Links to Wider Policy

Q9. In the context of recent Climate Action policy and Security of Supply programme, does the report provide sufficient information on how projects would benefit carbon ceilings and security of supply?

The TDP doesn't appear to include information on how projects would specifically benefit carbon ceilings. The TDP, and the SOEF Roadmap on which it is founded, is based on now outdated Climate Action Targets which are designed to meet a RES-E of 70%. The TDP

acknowledges an updated SOEF Roadmap will be published to reflect the new 80% RES-E target.

Reporting Structure

Q10. The TDP includes projects once they have moved past stage 3 of 6, do stakeholders consider this provides sufficient information on a project lifecycle?

No, as outlined above we would like to see more information provided for early stage projects (in steps 1 to 3), including project milestone dates so that progress can be tracked.

Q11. Should consideration be given to improving the accessibility of the TDP, for example, would an online map assist stakeholders in accessing and engaging with the projects?

Yes, as we outline above we believe that an online register with information on grid projects, which could include a map, would be most useful.

General Questions

Q12. Are there any other aspects of EirGrid's TDP 2021 – 2030 Consultation Report that have not been implemented to your satisfaction in the 2023 – 2032 TDP?

Our feedback above outlines a number of aspects, including more detail and programmes being provided for Early Stage Projects (in steps 1-3).

Q13. Do you have any other suggestions to improve the TDP?

We have nothing to add to what we have outlines above.

Wind Energy Ireland Response to the Transmission Development Plan 2023-2032

Introduction

Wind Energy Ireland (WEI) welcomes the opportunity to engage with CRU and provide feedback on the Draft Transmission Development Plan 2023-2032.

WEI is the nation's largest renewable energy organisation with more than 170 members who have come together to plan, build, operate, and support the development of the country's chief renewable energy resource. We work to promote wind energy as an essential, economical, and environmentally friendly part of the country's low-carbon energy future.

We have the following comments in relation to the consultation questions.

1. As a result of the consultation questions last year, EirGrid have agreed to provide more detail on projects in Chapter 5 including their drivers, needs, location, estimated completion, EirGrid Capital Approval dates (GW3), Project Agreement with ESB dates (GW6), forecast energisation date (ECDEI), capital project number (CP No.) and, next step in the six-step process for developing the grid. EirGrid have also provided more information on whether the project is developer led, TSO led or DSO led. In your view, does the content and format of the document adequately provide this information? Does this paper raise any concerns around delivery capability considering the challenges ahead? Does the document outline sufficient actions to address the drivers and needs presented? If not, please highlight the specific areas where additional actions may be required.

The consultation document provides good information on specific projects themselves. However, there is an opportunity to provide more detail on why these projects are required, and how these projects will address some of the issues in the surrounding areas. There are several instances outlining the needs for network reinforcement but there is inadequate information as to why it is needed, and how these projects will operate together to support the grid security in the longer term.

For each of the regions, information is provided on some of the hurdles to developing these network reinforcement projects but the document does not provide information on how these hurdles will be overcome. This brings into question the ability to deliver these projects in a timely manner. Stating that for example, a review on minimising outages does not specify the time needed for this, nor how this will affect the delivery timeline for projects.

The question states that "EirGrid have agreed to provide more detail on…….. EirGrid Capital Approval dates (GW3), Project Agreement with ESB dates (GW6), forecast energisation date (ECDEI), capital project

number (CP No.) and, next step in the six-step process for developing the grid". It is encouraging to see this information being provided; however, it would be useful for these dates to be shown under each of the project descriptions as well as in the final summary table for the region.

Each of the project descriptions lack any detail on the challenges of delivering that specific project or any clarity on timelines expected, and the effects these challenges could have on the timeline. Providing detail at a project level rather than regional level on the challenges can provide detail on project specific challenges rather than general regional challenges. This would be useful in understanding the delivery dates shown and any effect there may be on these dates.

It would be very beneficial to identify which projects require the System Operator in order to apply for planning permission.

2. In EirGrid's consultation response paper for TDP 2021 – 2030 they indicated that they were investigating ways to provide developers and other interested parties with more timely information on project delivery and expected completion dates. Has this been addressed satisfactorily in the 2023 – 2032 TDP, in your view?

It is encouraging to see that there is clear, and tabulated information being provided for delivery and completion dates for the projects. As per Q1 above, it would be useful to have this information shown under each of the project descriptions. The move towards integrating the Network Delivery Portfolio should hopefully provide more timely updaters to projects on a quarterly basis. When paired with the proposed online interactive map in Q11 below.

WEI believe this information including project milestone dates should be provided for all projects once the project need is confirmed (progressing from Step 2 of EirGrid's 6 step grid development framework). We also think it would be useful if there was an online register that is updated with the project information in real time as information is often a couple of months out of date by the time it is published in the NDP update.

3. The TDP currently provides general and non-project specific reasons for changes in project status e.g., from Active to On Hold or Removed. In response to the previous CRU consultation paper, stakeholders asked for more information on project status change and reasoning behind status changes. In EirGrid's response they stated they are "happy to include more detailed reasons on project changes in future TDP reports if they are available, noting that ultimately the asset owner carries out the actual work on the system". Has this, in your view, been adequately addressed in the 2023 – 2032 TDP?

Chapter 3 outlines changes to the Plan since the previous two version of the TDP and outlines the relatively low number of projects which have had negative updates (removed or put on hold). In general,

the information provided to backup the change of status is adequate and provides a broad list of potential reasons for the change of status.

4. Last year, CRU proposed that the TDP should include a link to the related PR5 submission from EirGrid. EirGrid is required to publish quarterly updates on the progress of all its transmission infrastructure projects as set out in CRU/20/154, the CRU's PR5 Regulatory Framework, Incentives and Reporting Decision Paper. It is important to mention that from this version of TDP onwards, the main input from which the list of reported projects is obtained is the Network Delivery Portfolio (NDP). Do respondents consider this NDP approach helpful, and if so, is there related information that should also be considered?

   The publishing of quarterly NDPs is seen as appositive step in providing more regular updates on the status of projects. While the process of utilising these quarterly NDPs will speed the process up, it would be beneficial to include a check of any new, non TSO/DSO led projects that may be in the works to ensure that the TDP has clear view of all projects at some point of planning/development on the island.

   The NDP approach is helpful however for it to be effective all projects must have milestone dates against them. There are several new grid infrastructure projects without this including new circuit projects from EirGrid's SOEF Roadmap that are scheduled to be completed by 2030.

   As outlined above the NDP and TDP should also include project milestone dates for projects that are in the early stages of development otherwise there is a risk a project could drift with little progression until entering Step 3 or 4.

5. Is there a clear process for the prioritisation and reprioritisation of projects in the 2023 – 2032 TDP? Do you have any suggestions in relation to this?

   It is not clear in the TDP document how the process of prioritisation and reprioritisation of projects occurs. It is important that this process be clearly stated, especially in regions where there is significant activity planned for. There is no clear description of the process for progressing needs into projects and how these projects then progress through the early steps of EirGrids Grid Development Framework. It is valuable to understand which projects have been prioritised, how they were prioritised, and the changes that have occurred as a result.

6. Have network constraints identified by respondents to the consultation of the TDP 2021-2030 been adequately addressed by EirGrid in the TDP 2023 – 2032, in your view? Are there any current network constraints that are not included in the TDP and will not be resolved by the successful completion of projects set out in the TDP 2022 - 2032?

   No, the network constraints have not been adequately addressed. There are many which have not been included, and EirGrid's ECP 2.1 and ECP 2.2 constraints reports show many areas, particularly in the

northwest and midlands that have high constraints even after completion of the reinforcement listed in the TDP.

The TDP appears to show no reinforcement being delivered between 2029 and 2032 which is of great concern considering the pipeline of RES projects in the area. EirGrid's revision of the "Tomorrow Energy Scenario's System Needs Assessment" should reconfirm the needs identified in the 2019 revision, as well as additional needs with the current planned pipeline of renewable projects. WEI would be happy to provide EirGrid with their Developer Project Pipeline as an input to the next assessment.

7. As stated in Section 5.4 of the 2023 – 2032 TDP, "...there are transmission capacity constraints getting power into and around Dublin". Does the plan clearly outline the problems and address the solutions to the constraints in the Dublin area? Should there be a dedicated chapter specifically relating to Dublin in the TDP?

The TDP document provides a good amount of high-level information on the key projects under development in and around the Dublin region. However, there is insignificant information provided outlining and detailing the critical issues and solutions in and around Dublin's grid. Considering the recognition of Dublin as "the major load centre on the Irish transmission network" there is a case for the inclusion of a chapter for Dublin alone, which can delve deeper into some of the challenges in the network, and how the projects described in the TDP will be addressing these challenges more thoroughly.

8. The North West has, for some time, been identified as being an area where there is particular difficulty with network development (Section 3.2 of 2021 – 2030 TDP). The North West Project (CP0800) was cancelled and removed from the PCI list in 2021. There is one capital project covering The North West Project, CP1233 Donegal – Srananagh corridor. This project is reported as a Project in Early Stages in Section 6.2 and is currently under review by EirGrid's Transmission Power System Planning area. Is this approach adequate to address this particular difficultly with network development, in your view?

The North West is a region which has seen a significant rise in curtailment due to network constraints, and requires new grid development in the area to accommodate more onshore RES projects as well as longer term offshore wind ambitions in the region. It is interesting to note that there is no project in the North West being considered to improve inter-regional power flows which is key to facilitating more renewables in the area. There has been a clear lack of progression of grid reinforcement projects in the Northwest for over a decade with projects being identified and being put "under review" with little progression.

The projects that have been identified in SOEF appear to address the need of generators that are there today but do not cater for the pipeline of renewable energy projects that are being progressed into and through planning. These renewable energy projects are well placed to deliver on 2030 targets. The main issue that impacts their delivery at this point is grid capacity.

There is no clear plan or project scope in the TDP to address all of the needs identified in the Northwest.

Of the projects that are identified in SOEF, it is not clear how CP1233 Donegal – Srananagh corridor is being progressed as there are no project milestone dates include in the TDP or the NDP. It appears to have been in Step 2 since November 2021 following the publication of the SOEF Roadmap.

EirGrid ECP 2.2 constraint reports include nearly all of the candidate reinforcements from SOEF but there is still a higher level of constraints in the North West than elsewhere on the grid so it is important to note that as things stand this and future TDPs continue to fall short when it comes to grid development in the North West.

9. In the context of recent Climate Action policy and Security of Supply programme, does the report provide sufficient information on how projects would benefit carbon ceilings and security of supply?

The TDP does provide information on which projects have security of supply as a key driver for the project as well as bullet point information on how the project aims to improve security of supply, though this information could be expanded on. Considering the importance of Security of Supply, there is a need to expand on this need and address how projects will contribute to security of supply.

With respect to carbon ceilings, there appears to be little information on the contribution that each project will make to Irelands carbon ceilings. This is a critical function and indirect driver for the transmission works and should be clearly shown what each project is contributing towards the carbon ceiling. It is also important to note that both the TDP and the SOEF Roadmap are based on outdated Climate Action Plan Targets (70% RES-E by 2030). There is recognition in the TDP that an updated SOEF Roadmap will be published with the new CAP target of 80% RES-E by 2030.

10. The TDP includes projects once they have moved past stage 3 of 6, do stakeholders consider this provides sufficient information on a project lifecycle?

It is clear that while the level of detail provided for the projects within stages 4-6 may not be replicated for the earlier projects, there is a need to provide more information beyond the table summaries for these projects. It would be useful to outline the needs for these projects and provide some context on what these projects will contribute to the network, and some further detail on the drivers for these projects. Project milestone dates are key for tracking progress of these 3early stage projects.

11. Should consideration be given to improving the accessibility of the TDP, for example, would an online map assist stakeholders in accessing and engaging with the projects?

An online map showing each of the projects from the report would be an extremely useful resource and can provide a more accessible interactive resource for reviewing projects in development, and individual project information.

There are several working examples for how these interactive maps can work, and their level of information. ENTSOE maintain an updated map to display the Ten-Year Network Development Plan projects which is a useful way of exploring projects in development. ENTSOE also maintain a general grid map of Europe which would be a valuable feature for the Irish grid as well.

It would be very helpful to have the ability to filter through projects based on key properties such as key drivers, what stage they are at, types of works, etc.

12. Are there any other aspects of EirGrid's TDP 2021 – 2030 Consultation Report that have not been implemented to your satisfaction in the 2023 – 2032 TDP?

13. Do you have any other suggestions to improve the TDP?

WEI would like to raise a point of note for clarification with respect to the information provided for both the Celtic and Greenlink interconnectors. Within the draft TDP paper, there is mention of one project in relation to the Celtic interconnector (Knockraha Station Celtic Interconnector (CP1215)). This project relates to works that will be undertaken on Knockraha Station in preparation for the interconnector.

In contrast, the Greenlink Interconnector project (Greenlink Interconnector (CP1088)) get a proper project description section outlining details on the project itself. Is there a reason that this has occurred and that there is not more information on the Celtic Interconnector shared in the TDP?

Thank you for the opportunity to provide feedback on the draft Transmission Development Plan 2023 – 2032 for CRU. We hope you consider the comments and recommendations made within our submission and we would be happy to engage at any point to discuss.

Yours sincerely,

Marcos Byrne
Senior Policy Analyst
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The Exchange
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23rd May 2023

RE: EirGrid Draft Transmission Development Plan 2023–2032 – CRU202320 ('paper')

Dear Eileen,

Bord Gáis Energy (**BGE**) welcomes the opportunity to respond to the CRU's consultation on EirGrid's draft Transmission Development Plan (**TDP**) for 2023-2032.

We welcome the improvements made to the draft TDP 2023-2032 to implement several feedback suggestions from the responses to last year's TDP 2021-2030. The improvements to the TDP of:

- implementing a freeze date on the data for analysis much closer to the TDP publication date,
- including the Drivers, Needs, and lifecycle dates for each project in the TDP, and
- adding a new projects in early development section

all give developers and stakeholders a more holistic view of the grid development projects being implemented or considered by EirGrid to transition the grid for delivery of the 2030 renewable targets and decarbonization agenda. Equally, the new Network Development Portfolio (**NDP**) Publication and Guidance documents have started to provide more regular updates and graphical representations of the projects' status. The developments made to the TDP 2023-32 are beneficial to developers and stakeholders as they enable a more holistic and strategic understanding of all the changes expected on the transmission system in the next 10 years. The proposed changes will start to move the TDP to be a "latest best view" of the range of changes expected to the transmission environment, with further development of the TDP content requirement and referencing required.

We believe however that there remain opportunities to build on from these draft TDP improvements to continue to expand the use of the TDP to be an overarching document to simplify and centralise the annual view of grid development plans for the next 10 years[1] (alongside the more regular quarterly updating report of the Network Development Portfolio - NDP), including the implications for policy, technical and network developments drivers/ needs such as markets, security of supply, RES integration, etc.

- We believe that EirGrid needs to **outline their view on the key ("must complete") projects within the TDP** that will develop the grid capabilities to deliver the 2030 renewables targets and decarbonisation agenda, which will then position the grid for the additional transformation needed to reach the later net-zero target. We ask EirGrid to establish this "priority projects" list for 2030 in the TDP (and update it year-on-year as projects are delivered) so that stakeholders have confidence that the grid for 2030 is being delivered especially in a timely manner with clarity on the projects that are helping to deliver the **security of supply and carbon ceilings**

[1] and a higher level view for the next 10 years after that i.e., out to 2042

requirements of the government's Climate Action Plan (CAP). We expand on this further in our response to Questions 1 and 9 in the annex to this response.

- Furthermore, we ask that the **projects in the TDP are also reported on by topic** (in a separate section of the TDP). An example would be to identify the projects addressing the most impacting constraints (those offering most benefit to consumer/ market by their removal), including future constraint impacts expected to materialise from major infrastructure programmes such as the Dublin area constraints or the connection of the two interconnectors (Celtic in Cork, and Greenlink in Wexford). The reporting by topic would for example demonstrate the grid projects that are expected to alleviate existing and anticipated constraints and the expected energisation timelines for consumers to see the delivery of the value benefit results to them, e.g., when consumers might start seeing a decline/ prevention of dispatch balancing costs due to particular grid projects being energised. Please see our response to Questions 1 and 6 for more details.
- We ask that as much detail as possible is provided in the TDP on these early-stage projects, including those projects to alleviate constraints including **the outputs of a Cost Benefit Analysis (CBA)** that we believe should happen at stage 1 of the EirGrid Grid Development process to identify the optimum project/ action needed to address the constraint (e.g., a market/ grid technology/ grid development solution) and the benefits each will provide to the consumer. Our response to Question 8 address this.
- We believe that the **NDP Guidance and Publication documents should be combined together** to give stakeholder a one-document NDP view of the quarterly status, and that it includes a commentary on the quarter-on-quarter changes, and a risk assessment of impacts to the delivery of the 2030 targets. Please see our response to Question 2.
- We believe that the TDP should be further expanded to build out the **forward-looking view on grid development** plans for the next 10 years (and a higher level view for the next 10 years after that i.e., out to 2042) such as the inclusion of Projects in Early Stages in the TDP and developing major infrastructure projects (such as offshore to onshore grid connections interface).
- We support the CRU suggestion for the **development of an online tool** by EirGrid to give stakeholders the option to review, analyse, and track the grid projects captured in the TDP, including those projects in early development stage. We see this as an opportunity for the SOs to share good practice and for EirGrid to develop as part of a potential on-line tool on TDP a Transmission Capability Heatmap similar in design and scope of the Availability Capacity Map deployed by ESBN to advise on the suitability of locations to facilitate new capacity connections. Please see our response on Question 11 for this detail.

The progress made by EirGrid in developing the TDP 2023-2032 to be a holistic, strategic, and forward-looking document on the grid developments needed to deliver the 2030 targets in a timely manner is a good start for stakeholders and very much welcomed. We see a need however for more areas in the TDP to develop further such as a better reporting on priority projects and the output of CBAs for constraint alleviation projects[2]; the clarity in a focused expansion of the early-stage projects within the TDP to identify those projects which will help deliver against the carbon ceiling and security of supply requirements of the CAP; and the parallel improvements to the separate NDP publications on project status/ milestones updates and causes. We would welcome a push to continue the development of

[2] We believe that CBA should be implemented at the earliest point for constraint alleviation projects to determine which solution(s) (e.g., a market/ grid technology/ grid development solution) to the challenge in question is optimal from the consumer perspective in terms of costs, services improvements.

the TDP in partnership with industry and stakeholders so that the TDP will achieve its full potential as a key strategic document with both EirGrid and stakeholders alike.

Please do not hesitate to contact me should you require further information or wish to discuss any aspect of our response.

Yours sincerely,

Ian Mullins
Regulatory Affairs – Commercial
Bord Gáis Energy

{By email}

Annex

Q1. As a result of the consultation questions last year, EirGrid have agreed to provide more detail on projects in Chapter 5 including their drivers, needs, location, estimated completion, EirGrid Capital Approval dates (GW3), Project Agreement with ESB dates (GW6), forecast energisation date (ECDEI), capital project number (CP No.) and, next step in the six-step process for developing the grid. EirGrid have also provided more information on whether the project is developer led, TSO led or DSO led. In your view, does the content and format of the document adequately provide this information? Does this paper raise any concerns around delivery capability considering the challenges ahead? Does the document outline sufficient actions to address the drivers and needs presented? If not, please highlight the specific areas where additional actions may be required.

The developments by EirGrid in the details of projects in the Transmission Development Plan (TDP) 2023-2032 will improve information sharing and engagement with stakeholders. The additional project detail provided by EirGrid in the TDP is welcome. At a glance stakeholders can see much more of the context for each project against the drivers, needs, and process steps/ timelines. Stakeholders will now have a better picture of the progress and status of specific projects in which they may have a vested interest for existing transmission connected units, units under development, or areas of future investment interest.

There remain further improvement opportunities in the TDP on the provision of project details and the annual reporting of grid projects to stakeholders, however. We believe that EirGrid need to **identify the grid projects that are key to develop the grid capabilities in the next 7 years to deliver the 2030 renewables targets and decarbonisation agenda** (and position the grid for the transformation needed to the later net-zero target beyond 2040). These grid projects must be the priority delivery focus for the TSO and TAO, and so be ring-fenced to avoid any delivery delays or cancellation. We ask EirGrid to establish this **"priority projects" list to 2030** in a separate section of the TDP (and update it year on year as key projects are delivered) so that stakeholders can have confidence that the grid for 2030 is being delivered in a timely manner. The list must also identify any delivery dependencies or interlinkage risk for each of the projects to help stakeholders better understand the impacts of any policy or price review changes to these projects.

The current TDP identifies the grid projects by geographical zone so giving stakeholders a view of the changes in the regions from the zone-specific projects. Taking a "whole-of-grid" perspective, we believe that stakeholders would benefit from seeing the **projects also being reported on** (in a separate section of the TDP) **by specific topic**. An example of a topic would be to **identify the most impacting constraints across the grid** (i.e., those offering the most benefit to the consumer/ market by their removal), blended with the future planned grid projects to mitigate significant constraint impacts expected to materialise from major infrastructure programmes such as the Powering Up Dublin project (as the first phase to transform and modernise the Dublin's aging electricity infrastructure and so the Dublin area constraints) or the connection of the Greenlink and Celtic interconnectors. The projects grouped under the Dublin area constraints topic should include the projects already identified as addressing local constraints in the Dublin area and be further informed by the work already underway on the Constraints/ (Dublin) Security of Supply incentive, and the Joint TSO/DSO collaboration programme. The grouping of grid projects under this topic will give stakeholders clarity on the most value adding projects for consumers in starting to address the Dublin area constraints. Other example topics can be the grid projects related to accommodating a particular technology such as future synchronous condensers or battery storage units and projects that primarily accommodate offshore renewables. We propose that EirGrid seek a list of potential topics from stakeholders and then use the most requested ones to build this reporting view for future TDPs. We believe that this "by topic" approach will also be information for both EirGrid and its stakeholders in terms of transparency around the meeting of PR5 related incentives such as the incentives around Renewable Energy Source – Electricity (RES-E) and Imperfections & Constraints.

Q2. In EirGrid's consultation response paper for TDP 2021 – 2030 they indicated that they were investigating ways to provide developers and other interested parties with more timely

information on project delivery and expected completion dates. Has this been addressed satisfactorily in the 2023 – 2032 TDP, in your view?

The quarterly publication of the Network Development Portfolio Guidance and Publication documents is a significant improvement in providing more timely information to developers and stakeholders. We ask however that **the two NDP documents are combined to give stakeholders a one-document view of the quarterly NDP status and that the quarterly commentary addresses the causation of any changes** noted in the quarter-on-quarter changes to the delivery of projects. Special attention should be given in the NDP commentary to the "priority projects" list as we set out in our response to Question 1 above so that stakeholders remain updated on the timely delivery (or not) of the grid developments needed for 2030. For clarity, every effort should be made to ensure there are no delays or changes to the delivery of this "priority projects" list and so stakeholders attention must be drawn to any changes to the delivery timelines of projects on the list.

We ask EirGrid to ensure that the **TDP freeze data and the NDP milestone data that it baselines itself off are aligned in the project pool being reported on**. We see this as essential to give stakeholders and investors one, true picture of the projects' delivery plan and status. Otherwise, the risk is evident that the two reports (being the TDP and Q4 NDP as data baseline) will diverge in content causing confusion as to the real state of the holistic grid development work. Our concern comes from the position that the TDP 2023-2032 identified 202 active projects at the freeze date while the Q4 2022 NDP was reporting on 357 projects. The number of reported projects in the two documents must align in total, or else have the differences between them reconciled and reported on in the TDP.

The **quarterly NDP report** has only been published three times at the time of drafting of this response yet it is evident that the **creeping delays to the project energisation dates to grid projects remain an issue**. The Q4 2022 NDP Publication showed 44% of the Energisation dates as "red"[3] and the Q1 2023 NDP publication showing another 4% of the dates as "red". It is notable that the energisation milestone for what the industry sees as a key grid project (*CP0466 North South 400 kV Interconnector – RoI*) was in this time delayed by 12 months to December 2026. These continuing delays to vital grid development projects are unacceptable and must be the focus of immediate remediation by EirGrid to bring the projects back on schedule. This delay is also a clear example of where the causation for the milestone change and the planned action by EirGrid to mitigate the delay need to be highlighted by EirGrid in the NDP commentary.

BGE supports the actions taken to bring the annual freeze date for the data and analysis for the TDP much closer to the publication date to allow the TDP to be based on close-to-real status of the grid and its projects.

Q3. The TDP currently provides general and non-project specific reasons for changes in project status e.g., from Active to On Hold or Removed. In response to the previous CRU consultation paper, stakeholders asked for more information on project status change and reasoning behind status changes. In EirGrid's response they stated they are "happy to include more detailed reasons on project changes in future TDP reports if they are available, noting that ultimately the asset owner carries out the actual work on the system". Has this, in your view, been adequately addressed in the 2023 – 2032 TDP?

No. This statement by EirGrid as outlined above from their consultation report on the responses received to the TDP 2021-2030 consultation [4] must be fulfilled to **give stakeholders better information on the cause of projects' status changes**. Using the status change for CP1139 (*Sligo & Srananagh 220 & 110 kV Protection upgrade*) as an example, the energisation milestone for this project in the Q4 2022 NDP Publication is identified as status "red" (please see the footnote below for definition) and a further 12-month delay added to the milestone over the Q3 NDP 2022 publication. As the TDP 2023-2032 is using the Q4 2022 NDP milestone data[5], this milestone delay should have been known about by EirGrid and would have been a prime example for EirGrid to provide detail on the causation (as per their statement above), yet we cannot find it in the TDP 2023-2032 draft. We ask EirGrid to give stakeholders the information on project status changes both in the TDP when the status

[3] "red" status - milestone achievable outside of 12 months of PR5 baseline

[4] CRU202275a - Section 2.3.4.2 (pg 22)

[5] CRU202321 TDP 2023-2032 – Section 4.3. Project Delivery (pg 39)

change occurs at the time of drafting, and at least in the commentary section of the NDP Publication that we have requested.

Q4. Last year, CRU proposed that the TDP should include a link to the related PR5 submission from EirGrid. EirGrid is required to publish quarterly updates on the progress of all its transmission infrastructure projects as set out in CRU/20/154, the CRU's PR5 Regulatory Framework, Incentives and Reporting Decision Paper. It is important to mention that from this version of TDP onwards, the main input from which the list of reported projects is obtained is the Network Delivery Portfolio (NDP). Do respondents consider this NDP approach helpful, and if so, is there related information that should also be considered?

As set out in our response to Question 2 and in our cover note, the quarterly publication of the Network Development Portfolio Guidance and Publication documents is a significant improvement in providing more timely information for developers and stakeholders. We ask however that the Guidance and Publication documents are combined to give stakeholders a one-document view of the quarterly status. We ask that **EirGrid include a commentary on the quarter-on-quarter changes**, and a **risk assessment of the impact from any noted project changes to the delivery of the 2030 targets**. We have outlined in our response to Q1 that EirGrid should identify the priority projects needed to develop the grid capabilities to deliver the 2030 renewables targets and decarbonisation agenda and it is these **priority projects at least that should be maintained as the critical delivery path and reported on specifically each quarter** to ensure the delivery of the 2030 targets remains on track.

Q5. Is there a clear process for the prioritisation and reprioritisation of projects in the 2023 – 2032 TDP? Do you have any suggestions in relation to this?

No. We believe that **the prioritisation and reprioritisation of projects in the TDP 2023-2032 is very unclear**. We see a benefit for stakeholders understanding how this prioritisation process operates, and the information points that can be shared with stakeholders. We have already outlined that feedback of changes to project milestones must be improved and that EirGrid must fulfil its offer to provide more information/ reasoning in the TDP (or NDP as appropriate) on project status changes (where this information is available). We have already highlighted earlier in the response that we believe EirGrid needs to identify the list of "priority projects" needed to develop the grid capabilities to deliver the 2030 renewables targets and decarbonisation agenda and it is these priority projects that should be maintained as the critical delivery path and reported on specifically each quarter to ensure the delivery of the 2030 targets is not at risk. We propose this action as a baseline that needs to be established in both the TDP and NDP publications for reporting against.

We welcome the quarterly NDP documents and the increased frequency of status updates of the projects they provide. Although these documents identify the stage of each project against EirGrid's Network Development process, they do not however clarify the prioritisation of the projects.

For grid projects to address existing constraints and possible future constraints from major infrastructure projects (such as Celtic or Greenlink interconnectors, or connection of offshore renewable generation), we believe that all transmission system development needs on constraint alleviation should be subject to a Cost Benefit Analysis (CBA) process by EirGrid at the earliest possible point. The aim of the CBA should be to determine which solution(s) (e.g., a market/ grid technology/ grid development solution) to the challenge in question is optimal from the consumer perspective in terms of costs, services improvements etc. The relevant project solutions for the constraint removal accepted under the CBA should then be incorporated into EirGrid's prioritisation process so that those of longer duration to delivery are effectively scheduled/ prioritised for an earlier start date.

Q6. Have network constraints identified by respondents to the consultation of the TDP 2021-2030 been adequately addressed by EirGrid in the TDP 2023 – 2032, in your view? Are there any current network constraints that are not included in the TDP and will not be resolved by the successful completion of projects set out in the TDP 2022 - 2032?

We believe that **EirGrid can better identify the projects in the TDP which address the most impacting constraints for the grid**. The capability of EirGrid to identify and group the projects to

address particular topics has already been shown in their consultation report[6] to the feedback received on the TDP 2021-2030. Queries as to specific grid developments in the Midlands, the Cork region (related to the connection of the Celtic Interconnector), and the North-West resulted in EirGrid answering them by grouping the specific projects to address the topics queried in their report. The Cork region query related to expected grid congestion and resilience in light of the planned connection of Celtic. We welcome the approach of project grouping by topic taken in that response[7] as it identified the various projects out of the regional list that would impact on the topic of grid resilience in the Cork region. The application of this topic grouping in parallel with the use of a CBA process will aid in the transparency of EirGrid's actions to deliver on its PR5 incentives such as Constraints and RES-E. We ask that the same approach is used to establish the projects needed to address the most impacting constraints (those offering most benefit to consumer/ market by their removal e.g., reduced dispatch balancing costs) as another topic. This would include future mitigating grid projects to address constraint impacts expected to materialise from planned major infrastructure programmes such as Powering Up Dublin and the connection of the Celtic and Greenlink interconnectors.

Q7. As stated in Section 5.4 of the 2023 – 2032 TDP, "…there are transmission capacity constraints getting power into and around Dublin". Does the plan clearly outline the problems and address the solutions to the constraints in the Dublin area? Should there be a dedicated chapter specifically relating to Dublin in the TDP?

We believe that the TDP should be developed to provide the clearest update for stakeholders on the grid projects to alleviate areas of known constraint and congestion, with the Dublin area being one example. The information shared in Section 5.4. of the TDP 2023-2032 (The South-East, Mid-East and Dublin) provides helpful detail across a number of projects in the region with multiple references to the projects impacting the Dublin area. However, it is difficult to establish the effectiveness and efficiency of all of the projects to address the constraints in and around Dublin when these projects are mixed in with the other grid projects for the region as a whole. We believe **reporting on the specific projects to address the constraints in the Dublin area (as an example) to be another topic for specific reporting in the TDP**.

We agree with the suggestion for a separate chapter in the TDP to report on the transmission developments for the Dublin region especially given the planned connection of significant offshore renewable generation to the region which will require the efficient and effective energy flows into and out of the Dublin area for the renewable energy from the east coast to benefit the rest of the SEM. Some sections we would suggest to be included in the chapter are:

- The overall plan and delivery timelines for the Dublin related projects to address constraints. The project should be at the same level of detail as the TDP.
- The look-forward for the constraints and congestion forecast from major infrastructure projects such as the connection of the offshore renewable generation on the east coast
- Risks to delivery of the plan and mitigating actions against these risks. This would include resource availability and funding risks.

Q8. The North West has, for some time, been identified as being an area where there is particular difficulty with network development (Section 3.2 of 2021 - 2030 TDP). The North West Project (CP0800) was cancelled and removed from the PCI list in 2021. There is one capital project covering The North West Project, CP1233 Donegal – Srananagh+ corridor. This project is reported as a Project in Early Stages in Section 6.2 and is currently under review by EirGrid's Transmission Power System Planning area. Is this approach adequate to address this particular difficultly with network development, in your view?

We agree with, and had requested last year, the inclusion of Projects in Early Stages in the TDP. We believe that the **TDP should be expanded to include this forward-looking view on grid**

[6] CRU202275a: Transmission Development Plan 2021 – 2030 Consultation Report
[7] CRU202275a – Section 2.2.2 Network development in specific regions

development plans for the next 10 years (and a higher level view for the next 10 years after that i.e., out to 2042). While we welcome this amendment by EirGrid to the TDP, we believe that there are improvements to be made on the insertion of these Projects in Early Stages into the TDP.

- We propose that the **entry of each Project in Early Stages into the TDP classifies the source of the project so that stakeholders can see the full inclusion of projects recognised in the SOEF or TES publications into the TDP**. Stakeholders must be able to read across the projects to ensure the holistic view of the TDP.
- We ask that as much detail as possible is provided in the TDP on these early stage projects especially the outcome of a Cost Benefit Analysis (CBA) for constraint alleviation projects that we believe should happen at stage 1 of the EirGrid Grid Development process to identify the optimum project/ action needed (e.g., a market/ grid technology/ grid development solution). **We propose that each early stage projects** for constraint alleviation **in the TDP should appear on a CBA matrix to identify how the chosen project is the optimal approach to the grid issue, and the benefits for the consumer that should result**. The project listing should also include the project statement (needs) and the expected drivers.

Q9. In the context of recent Climate Action policy and Security of Supply programme, does the report provide sufficient information on how projects would benefit carbon ceilings and security of supply?

No. We believe that the approach we have suggested above of **the "priority projects" list** to deliver the 2030 targets should include **the ability of each to facilitate the transition of the power sector to meet both its carbon ceilings while not increasing the risk to security of supply**. We believe this approach will help to identify the projected decreasing carbon intensity of the generation mix over the next seven years through the low/ zero carbon generation connections to the grid. We ask EirGrid to advise as to when this reporting can be implemented in the TDP without unduly delaying its publication.

Q10. The TDP includes projects once they have moved past stage 3 of 6, do stakeholders consider this provides sufficient information on a project lifecycle?

We believe that the TDP should include all transmission infrastructure projects identified as needed, especially those that are identified as priority to deliver the 2030 targets. While the past drafts of the TDP have been based solely on the Committed Projects, we ask that all forward-looking projects as determined as needed at stage 1 of EirGrid's Grid Development process based on the outcome of a CBA are also included in the TDP with as much similar detail as possible to those more developed projects. The forward-looking projects can be captured separately in the TDP such as the offered Chapter 6 - Projects in early stages of development. Therefore, we see the TDP as including projects on a wider project lifecycle from stage 1 (as identified through a CBA) to stage 6 and through to energisation.

Q11. Should consideration be given to improving the accessibility of the TDP, for example, would an online map assist stakeholders in accessing and engaging with the projects?

We would support the CRU proposal for an online tool to assist stakeholders being able to access, analyse and track the projects identified in the TDP through a number of different lens, which can be regional, topical, and solution based (build v market v technology) to suggest a few. EirGrid could apply a colour coded classification (similar to the NDP report) for projects whose timelines are delayed/ at risk/ on track with priority/ strategic projects being clearly identified by a shape marker e.g., star. Taking good practice from ESBN, EirGrid could also develop a Transmission Capability Heatmap (similar in design and scope of the Availability Capacity Map deployed by ESBN) to advise on the suitability of locations on the grid to facilitate new capacity connections. **The online tool should have best available data and can be an information repository for all projects in the TDP**.

Q12. Are there any other aspects of EirGrid's TDP 2021 – 2030 Consultation Report that have not been implemented to your satisfaction in the 2023 – 2032 TDP?

We welcome the addition of **Section 6. Projects in early stages of development**, to the TDP but ask that as much **information as possible is included** within this section **including the output of a CBA that we believe should be completed for all constraint alleviation projects in stage 1**, as well as the planned dates for the projects to progress through the Grid Development process.

Our response last year to the draft TDP 2021-2030 called out a **concern of the growing need for specialised personnel and resources to deliver an increasing number of grid development projects**. We ask EirGrid to share in the TDP 2023-2032 the staffing, resourcing, and supply chain actions being taken to ensure the timely delivery of the offshore transmission grid as it is a key requirement for the 2030 targets and the value delivery to the consumer of the ORESS support scheme. Our resourcing concern is manifesting in the TDP 2023-2032 where "*EirGrid will plan, develop, and own the offshore transmission system, which will ultimately be managed according to a centralised model*."[8] This offshore development work by EirGrid will be complex and demanding.

Q13. Do you have any other suggestions to improve the TDP?

We have already set out in the response to the consultation questions that the TDP format and content should be further improved by:

- establishing a "priority projects" list to 2030 in a separate section of the TDP which is reported on and updated year on year as key projects are delivered so that stakeholders can have confidence that the grid for 2030 is being delivered in a timely manner. This list should identify the ability of each project to facilitate the transition of the power sector to meet both its carbon ceilings while not increasing the risk to security of supply.
- adding a Cost Benefit Analysis (CBA) matrix to show how each transmission development project for constraint alleviation (especially the early stage projects) in the TDP is the optimal approach to the grid issue, and the benefits for the consumer that should result. The matrix data would be based on the output of CBAs that we believe should be completed for all constraint alleviation projects in stage 1 of EirGrid's Grid Development process to identify the optimum project/ action needed (e.g., a market/ grid technology/ grid development solution)[9] to address the problem identified and the benefit it will deliver to the consumer.
- adding a "whole-of-system" reporting process to gather and report on projects by topic such as constraint mitigations or addressing the impact of major infrastructure projects (e.g., the connection of the Greenlink and Celtic interconnectors) or accommodating major RES projects.
- ensuring the data used at the freeze date used to produce the TDP is aligned to, or reconciled with, the Q4 NDP quarterly update data to provide a tie-in between the annual TDP report and quarterly NDP updates on the plan and status of the grid developments to deliver the 2030 targets. The early stage projects should be reconciled back to their source (such as the SOEF roadmap or TES scenarios) so that stakeholders are clear on the level of forward project inclusion in the TDP.
- clarifying for stakeholders how the project prioritisation/ re-prioritisation process is operated by EirGrid, and how the status and milestone updated information points that will be shared with the reason for the changes.

We have also recommended improvements to the quarterly NDP report by combining the publication and commentary section and improving the status change commentary.

[8] CRU202321 – Section 1.4.8. Offshore Grid Development (pg 20)

[9] Our central belief is that all transmission system development needs should be subject to a Cost Benefit Analysis (CBA) by EirGrid at the earliest possible point. The aim of the CBA should be to determine which solution(s) (e.g., a market/ grid technology/ grid development solution) to the challenge in question is optimal from the consumer perspective in terms of costs, services improvements etc.

Bord na Móna

EirGrid
Draft Transmission Development Plan 2023 - 2032

Consultation Response

23 May 2023

1. Introduction

Bord na Móna (**BnM**) welcomes the opportunity to engage with the CRU and provide input on EirGrid's draft Transmission Development Plan (TDP) 2023 - 2032. BnM has a substantial pipeline of generation projects across an array of technologies, mainly consisting of large-scale wind and solar developments. It is BnM's mission to become a leading provider of renewable energy in Ireland by 2030 and to date, in addition to our fleet of operating generation assets, we have secured a number of grid connection agreements and offers which underpins our intent in achieving our target.

Our development programme for renewable energy projects, which utilises the vast land bank BnM owns, has the potential for power output in the region of an additional 1 GW by 2030. Central to achieving this is the continued development of the Transmission system. We welcome several the changes that EirGrid have incorporated into the TDP most importantly:

- The improved level of detail from EirGrid in relation to specific projects is informative and the decision to implement the data freeze date being closer to the publication date of the TDP is welcomed.
- The inclusion of step 3-to step 6 identification is helpful for developers to better understand the status and progress of projects.
- The publication of the NDP on quarterly basis is very welcome. Regular status updates are very helpful for developers in planning their own workstreams.

We believe that the TDP could be yet further improved if EirGrid were to:

- Provide detail on why changes to project to timelines occur. When projects are delivered is key to developers and understanding why timelines are altered would help us in managing our own projects development timelines. Better usage and allocation of our resources will help to deliver projects more efficiently and cost effectively.
- The inclusion of a new status of "construction commenced" to projects that have begun construction would be helpful, giving developers greater certainty in relation to when a project will be delivered.
- Address the deteriorating status of constraints in the midlands. While relatively unconstrained to date, forecasts show that this situation will deteriorate over the coming decades. Solutions to this should be incorporated into the TDP now as their will be significant development of renewables in this region required to achieve the ambitious RES-E targets contained in the Climate Action Plan

Our detailed response to the thirteen consultation questions are listed below.

2. Response to Questions

Project Information

Q1. As a result of the consultation questions last year, EirGrid have agreed to provide more detail on projects in Chapter 5 including their drivers, needs, location, estimated completion, EirGrid Capital Approval dates (GW3), Project Agreement with ESB dates (GW6), forecast energisation date (ECDEI), capital project number (CP No.) and, next step in the six-step process for developing the grid. EirGrid have also provided more information on whether the project is developer led, TSO led or DSO led. In your view, does the content and format of the document adequately provide this information? Does this paper raise any concerns around delivery capability considering the challenges ahead? Does the document outline sufficient actions to address the drivers and needs presented? If not, please highlight the specific areas where additional actions may be required.

The improved level of detail from EirGrid in relation to project details is informative and welcomed, inclusive of the data freeze date being closer to the publication date. Recognising EirGrid have included the step in the

process for each project is positive, it is our view information such as “construction commencement” dates could be included. This level of detail will be very useful to industry and add substantiation to energisation dates. We would see this being applicable to projects within direct control of the TSO and DSO only.

Taking CP0644 Bracklone as an example, which will be a new node on the network, is due to be energised on 1st April 2025. If this project is not due to commence construction works within 2023, then it is arguable that this new node will not be delivered for the intended timeline in April 2025.

Also staying with the example of Bracklone, it is noted the delivery details includes a four bay GIS substation. Two of these bays will be occupied by the looping in the Portlaoise – Newbridge circuit, thus leaving two spare bays. Looking to the wider region, developers with plans to advance projects through the consenting process, it is reasonable to expect additional levels of new renewables will seek to connect to this new node. For the challenge of achieving 80% RES-E by 2030, it would be more effective and cost efficient to deliver a minimum of eight bays for this substation such that connection of new renewables can be facilitated in the least amount of time. This approach should be applied to all developments undertaken by the TSO/DSO.

Ultimately, we would see delivering projects with minimum levels of equipment as being a continuation of old approaches, where today, we should be aiming to best place new TSO/DSO network developments to be ready to connect new renewables projects, avoiding extension works and the associated network outages that go with these works.

Q2. In EirGrid’s consultation response paper for TDP 2021 – 2030 they indicated that they were investigating ways to provide developers and other interested parties with more timely information on project delivery and expected completion dates. Has this been addressed satisfactorily in the 2023 – 2032 TDP, in your view?

It is noted that EirGrid intend to rely on the Network Delivery Portfolio (NDP) going forward and that it will be used as input to the TDP. If the TDP is to set out a plan, the document will only be as good as its inputs.

Looking to the NDP at the time of data freeze, there are approximately 348 projects listed and being quoted by EirGrid for completion to reinforce the system. However, from the published NDP approximately 55 of the listed projects are energised and hence complete. Thus, there were 293 live projects at the time of the data freeze. It is important to have accurate inputs with measurable outputs. The historical and complete projects should be moved to a “complete project” list or equally removed from the NDP and therefore focus on the number of live projects to deliver reinforcement and connection of customers.

As outlined in response to question no.1 above, it would be helpful to have the NDP include “construction commencement” dates, for projects in direct control of the TSO & DSO. The steps for Capital Approval and Project Approval are related to the infrastructure agreement process between EirGrid and ESB, it does not inform on actual commencement timelines for the delivery of the works.

Q3. The TDP currently provides general and non-project specific reasons for changes in project status e.g., from Active to On Hold or Removed. In response to the previous CRU consultation paper, stakeholders asked for more information on project status change and reasoning behind status changes. In EirGrid's response they stated they are "happy to include more detailed reasons on project changes in future TDP reports if they are available, noting that ultimately the asset owner carries out the actual work on the system". Has this, in your view, been adequately addressed in the 2023 – 2032 TDP?

Generally, the information for projects status from active to on hold is adequate, however, we would further suggest that the reasoning is made specific to each project as opposed to high-level global reasoning.

Q4. Last year, CRU proposed that the TDP should include a link to the related PR5 submission from EirGrid. EirGrid is required to publish quarterly updates on the progress of all its transmission infrastructure projects

as set out in CRU/20/1546, the CRU's PR5 Regulatory Framework, Incentives and Reporting Decision Paper. It is important to mention that from this version of TDP onwards, the main input from which the list of reported projects is obtained is the Network Delivery Portfolio (NDP). Do respondents consider this NDP approach helpful, and if so, is there related information that should also be considered?

The quarterly update of the NDP is helpful and positive for industry being informed regularly on project status. However, as highlighted in previous responses to questions, this list contains complete projects, and the focus should be on live projects.

It is noted that from quarter to quarter there will be updates on project timelines, however, no explanation is given at present. For changes in project delivery dates, having some explanation on these changes would be informative to industry. Notes on change, we would see only being applicable to projects under direct control of the TSO and DSO.

Q5. Is there a clear process for the prioritisation and reprioritisation of projects in the 2023 – 2032 TDP? Do you have any suggestions in relation to this?

It is unclear from the TDP how EirGrid are setting priorities and reprioritising, as necessary. It would be helpful if EirGrid could provide details on their process and factors associated with same. Where a project is reprioritised, explanation on this change should be included.

Network Constraints

Q6. Have network constraints identified by respondents to the consultation of the TDP 2021-2030 been adequately addressed by EirGrid in the TDP 2023 – 2032, in your view? Are there any current network constraints that are not included in the TDP and will not be resolved by the successful completion of projects set out in the TDP 2022 - 2032?

BnM are of the view that network constraints in midlands region have not been addressed.

Taking EirGrid's ECP 2.2 constraint reports which were released in Q4 2022 and by example, constraint levels within area J are projected to reach up to 18% in certain scenarios and out to 2030 could be as high as 10%. Looking at overall dispatch down percentages these figures are greater again in certain scenarios.

The Climate Action Plan published in Q4 '22 sets out targets for dispatch down to be achieved and is questionable if this plan is going to address what are legally binding targets.

We would suggest to CRU that this plan and revision to same is made considering these targets, and the development plan clearly demonstrates to all that the plan can achieve dispatch down level below 7% as well including a network development roadmap that clearly demonstrates it can accommodate 9GW onshore wind, 5GW offshore wind, 8GW solar, noting this plan's purpose is to identify network reinforcement out to 2032 which is beyond the timelines to deliver the mandated CAP'23 targets.

Q7. As stated in Section 5.4 of the 2023 – 2032 TDP, "…there are transmission capacity constraints getting power into and around Dublin". Does the plan clearly outline the problems and address the solutions to the constraints in the Dublin area? Should there be a dedicated chapter specifically relating to Dublin in the TDP?

The question highlights "…constraints getting power into and around Dublin", BnM for many years has highlighted there is a bottleneck in the midland network which provides power into Dublin and the need to address this bottleneck. Network reinforcement getting power into Dublin and within the county of Dublin could merit its own chapter within the TDP with focus showing improvement of removing the power flow bottlenecks of grid infrastructure into and around Dublin.

Q8. The North West has, for some time, been identified as being an area where there is particular difficulty with network development (Section 3.2 of 2021 - 2030 TDP). The North West Project (CP0800) was cancelled and removed from the PCI list in 2021. There is one capital project covering The North West Project, CP1233 Donegal – Srananagh corridor. This project is reported as a Project in Early Stages in Section 6.2 and is currently under review by EirGrid's Transmission Power System Planning area. Is this approach adequate to address this particular difficultly with network development, in your view?

As highlighted the North West region for some time has been identified for development. Whilst uprating of circuits in the region is welcomed, the overall solution is not to the level to realise the regions potential for new renewables growth, which may see the continuation of high levels of dispatch down in the region. As network capacity grows in the short term, renewable generation will continue to grow and ultimately these reinforcements are not applying long term vision. Furthermore, the increased power flows from the north west region will head towards to the islands demand centres and as highlighted in question 7, the midlands is a bottleneck, therefore, passing the issue on to an already under-rated network in the midlands.

Links to Wider Policy

Q9. In the context of recent Climate Action policy and Security of Supply programme, does the report provide sufficient information on how projects would benefit carbon ceilings and security of supply?

The report provides a rationale for each project indicating what aim it will achieve. Projects categorised as being for security of supply or for RES integration provide detail on why they are required and how the project will help under these categories. Further RES integration will help in achieving the Climate Action Policy targets for RES-E deployment but there is little detail provided on how these projects will help in abiding by the sectoral carbon budgets. Detailed assessment for each project's contribution to this would be difficult to include and we do not believe a useful way to utilise EirGrid's limited resources. However, given the constraint that overall grid development can have on abiding by the carbon budgets we do believe it is something that should be considered further in the TDP. An overall grid development plan is needed to deliver sufficient new generation, both RES and more carbon efficient conventional generation to meet the sectoral emissions limits.

Reporting Structure

Q10. The TDP includes projects once they have moved past stage 3 of 6, do stakeholders consider this provides sufficient information on a project lifecycle?

BnM are of the view that this level of information, whilst it is helpful, could extend further to provide improved levels of information on how projects are advancing. Once project agreement is achieved, a project will likely move to step six in EirGrid's six step process, however, a project could be held within this step for some time. Having a clear date for construction commencement would be useful as it adds confidence to energisation dates, which have moved year on year historically.

Q11. Should consideration be given to improving the accessibility of the TDP, for example, would an online map assist stakeholders in accessing and engaging with the projects?

BnM would agree that consideration should be given to the development of an online based map system, however, this should not be developed at the expense of the deliverables of the TDP. We recognise resourcing across industry is an issue and adding burden for development of an online map system should only come once the key issues of the development plan are addressed i.e. clear demonstration that the network development plan can accommodate the GW levels mandated which achieving required dispatch down levels.

General Questions

Q12. Are there any other aspects of EirGrid's TDP 2021 – 2030 Consultation Report that have not been implemented to your satisfaction in the 2023 – 2032 TDP?

It would be useful for the TDP to include measures on how the TDP addresses the following:

- Article 12
- Article 13
- SOEF reinforcements

Q13. Do you have any other suggestions to improve the TDP?

To improve the TDP, it would be useful to include a clear roadmap for demonstrating how the level of network reinforcements can accommodate the generation & dispatch down requirements as listed within CAP'23 "Key Metrics to Deliver Abatement in Electricity" both 2025 and 2030 can be delivered upon.

Ms Eileen Deegan,
Commission for Regulation of Utilities,
P.O. Box 11934,
Dublin 24

Emailed to: edeegan@cru.ie

23rd May 2023

EDF Renewables Ireland Submission to the CRU's Consultation on EirGrid's Draft Transmission Development Plan 2023-2031

EDF Renewables (EDFR) Ireland is part of one of the world's largest electricity companies and our investment and innovation in renewable energy projects is bringing down costs for consumers and delivering significant benefits for communities. EDFR Ireland's team has a wealth of experience in bringing complex development projects to fruition, across onshore and offshore wind, solar PV and battery storage technology, and is supported by more than 400 colleagues in the UK.

In 2020 we acquired 50% of Codling Wind Park, a major offshore wind farm which will be located off the coast of Co. Wicklow, with a dedicated project development team, and 100% of Wexford Solar, which includes eight solar projects across Ireland. In total, we have an Irish onshore development pipeline of almost 1 GW. We have constructed and energised three of the first utility-scale solar farms in Ireland in Wexford and Kilkenny and have announced five new onshore wind projects in the past two years. We continue to assess M&A and JV opportunities and are actively looking at battery co-location options for all our renewables projects.

We welcome the accelerated pace at which the Irish Government is moving to support Ireland in achieving the national energy target of 80% renewable electricity by 2030. This overall target includes the generation of at least 7 GW of electricity from offshore wind, as set out in the Climate Action Plan (CAP) 2023. We also welcome the new targets detailed in the recent Phase 2 Policy Statement of at least 20 GW offshore wind deployment by 2040 and 37 GW by 2050.

EDFR welcomes the opportunity to engage with the CRU and respond to this consultation on the draft EirGrid Transmission Development Plan (TDP) 2023-2031.

We would like to take this opportunity to highlight the following points: -

- **Transmission System Development -** A resilient electricity grid is essential to meeting our 2030 renewable electricity targets and longer-term decarbonisation goals. We believe that the CAP 2023 targets will only be achievable with the parallel development of the transmission system, to accommodate the large volumes of renewable generation that will be required. Coupled with increased electricity demand, the existing transmission and distribution grids were not designed for the location and increased levels of power flows that are planned over the next few years. We would urge EirGrid to align with the Government's CAP 2030 target of 80% renewable electricity generation

and to also proactively plan beyond this to further the national net zero target, and we welcome the imminent publication of the updated roadmap, SOEF 1.1 We would encourage both CRU and the Department (DECC) to work closely with EirGrid to facilitate this step-change in ambition.

- **Increased Investment** - We welcome the recent milestone by EirGrid of 75% System Non-Synchronous Penetration (SNSP). To build upon this progress, we would recommend major investment in the grid transmission network, which will be essential to fit the needs of 2030 and beyond. It is critical that EirGrid reinforces and upgrades the grid infrastructure now, in order to accommodate the predicted increased future demand and to strive towards a zero-carbon system that can operate with 100% SNSP.

- **Network Constraints -** Constraint is a local system issue which can be alleviated by reinforcement of the Grid infrastructure. Constraint is a measure of a systems effectiveness and efficiency. Higher constraints mean a less effective system and a less effective system leads to increased costs to both the consumer and non-firm generators. EirGrid's ambition through the TDP process should be to strengthen the system minimise local constraints". Specifically, the West and Northwest have long had network investment signals with regards to the high level of constraints in these areas. While there are plans to reduce this with the more advanced 110kV North Connacht project (Grid West - replaced) and the lessor progressed Northwest Project, CP1233 (Northwest Project CP0800 - cancelled). A proactive plan is encouraged to increase the strength of the Grid Network in these areas, as a reactive approach only delays investment and economic development in the area.

- **Dispatch Down Management Plan** - Constraint and curtailment continue to be an issue for renewable generators. We would welcome the development and publication of an effective management plan to minimise dispatch down and to therefore remove this risk for renewable units.

- **Decision-Making Process** - We would welcome clarity on EirGrid's decision making-process for grid projects, in terms of what metrics and factors they use. We would further welcome transparency around risk to projects and mitigation plans around this. As the generator bears the risk of delays to transmission infrastructure, we believe that information regarding the risks should be made available.

- **Increased Resourcing and Improved Staff Retention** - We recommend that EirGrid would be sufficiently resourced, in terms of the development and operating spend required for the design and consenting of grid reinforcement solutions, and the capital spend required for new network build to deliver the multiple workstreams which will be required. We suggest that incentives are put in place by the CRU for EirGrid to ensure they are progressing the required grid solutions in a timeframe that will allow the delivery of our offshore targets. It is vital that the CRU works together with DECC in supporting the approach of developing grid reinforcements, based on the strength of the renewable pipeline, via adequate funding and incentivisation of EirGrid in frameworks such as the annual Price Review.

Although there is a degree of acknowledgement in the draft EirGrid TDP of each of the above issues, we believe that the TDP needs to highlight these challenges more explicitly and identify the corresponding actions more clearly. Our overarching concern is that the scale and pace of change to Ireland's transmission system required to deliver climate objectives is not reflected in the TDP. A step change in

approach is needed and we would welcome the opportunity to make a positive contribution to facilitating this.

In conclusion, we would like to thank the Commission for Regulation for Utilities for the opportunity to engage on this matter and look forward to continuing our work with you in future.

Should you wish to discuss any of the issues raised in our response or have any queries, please contact Stella Burke on stella.burke@edf-re.ie, or me. I confirm that this letter may be published on the CRU website.

Yours sincerely,

DocuSigned by:
Ryanne Burges
B861E8A0D6494ED...

Ryanne Burges
EDF Renewables Director, Offshore and Ireland

Source Galileo | Octagon Point | St Paul's | London EC2V 6AA

Commission for Regulation of Utilities (CRU)
EirGrid Draft Transmission Development Plan 2023 – 2032

Source Galileo Submission

Introduction to Source Galileo & Background to Submission

Source Galileo[1] was founded to accelerate the roll-out of large-scale renewable energy projects as part of the energy transition to a sustainable future. The team behind Source Galileo has led over 15 GW of wind and solar photovoltaic (PV) projects globally including 5 GW of offshore wind projects in UK and Irish waters.

Source Galileo is partnered with Galileo Green Energy, a pan-European, multi-technology, renewable energy developer, owner and operator launched in 2020 by HRL Morrison & Co, the international investment manager.

Currently, Source Galileo is seeking to develop a number of offshore projects[2] in Irish waters with a view to seeking Maritime Area Consents (MACs) once the Maritime Area Regulatory Authority (MARA) is established in 2023. The development of such projects is in clear alignment with the State's ambitious decarbonisation policy agenda as underlined in the existing Climate Action Plan 2023 ('CAP 2023') and Climate Action and Low Carbon Development (Amendment) Act 2021.

The much-changed geopolitical landscape serves to underscore the need for Ireland to urgently transition away from fossil fuels in order to secure the State's long-term competitiveness by an effective transition to net zero.

Source Galileo thus very much welcomes the opportunity to respond to this important public consultation and the development of an updated Transmission Development Plan (TDP) 2023 -2032.

The updated Plan in conjunction with the broader related policy framework will be key to the timely delivery of nationally important infrastructure within the window to contribute to the State's 2030 binding renewable energy and decarbonisation targets.

[1] Source Galileo- Developer of Large-Scale Renewable Projects (sourceenergie.com)

[2] Further detail on the proposed offshore wind developments in Ireland (located at Malin Head off the North Coast, the Southern coast and the Eastern coast) is available at: Projects - Source Energie

Consultation Questions

Q1. As a result of the consultation questions last year, EirGrid have agreed to provide more detail on projects in Chapter 5 including their drivers, needs, location, estimated completion, EirGrid Capital Approval dates (GW3), Project Agreement with ESB dates (GW6), forecast energisation date (ECDEI), capital project number (CP No.) and, next step in the six-step process for developing the grid. EirGrid have also provided more information on whether the project is developer led, TSO led, or DSO led.

In your view, does the content and format of the document adequately provide this information? Does this paper raise any concerns around delivery capability considering the challenges ahead? Does the document outline sufficient actions to address the drivers and needs presented? If not, please highlight the specific areas where additional actions may be required.

The TDP provides some relevant information however it is clear that the capabilities to address and deliver the Climate Action Plan (2023) ('CAP 23') targets outlined by the Government are not properly provided for. For example, a number of projects outlined in the draft document were initiated back in 2012 and are still not completed.

As such, a more progressive approach must be outlined in the updated Plan in order to give effect to the State's legally mandated targets. CAP 23 lays down very ambitious targets and this current draft document does not outline an enabling strategy or the manner in which projects to address the shortfalls in the existing infrastructure can be delivered.

Specifically, CAP 2023 lays down a target of at least 5GW of installed offshore wind energy by 2030 (with an additional 2GW offshore wind for green hydrogen production), aligning it with the legally binding economy-wide carbon budgets and sectoral ceilings agreed by Government in 2022 pursuant to the Climate Action and Low Carbon (Amendment) Act 2021.

Moreover, the achievement of the EU's binding renewable energy target which has recently been increased to 42.5% target share for renewables in energy consumption by 2030, with the aim of achieving 45%5 under the revision of the Renewable Energy Directive (RED) must be borne in mind in this regard.

Ireland's share of renewable energy as a percentage of total energy consumption, as per the Report on the Achievement of the 2020 Renewable Energy Targets will be required to increase from circa 13% in 2020 to at least 42.5% in 2030. Ireland's actual overall RES in 2020 was 13.5%, meaning that Ireland was obligated to acquire statistical transfers of 3.3 TWh of renewable energy from other Member States to compensate for this shortfall.

Q2. In EirGrid's consultation response paper for TDP 2021 – 2030 they indicated that they were investigating ways to provide developers and other interested parties with more timely information on project delivery and expected completion dates.

Has this been addressed satisfactorily in the 2023 – 2032 TDP, in your view?

No. As mentioned in response to question 1, the document does not address CAP 23 infrastructure requirements. Furthermore, the documents that are the basis for the TDP are also lagging behind the objectives set out in CAP 23 e.g., the Tomorrow's Energy Scenarios – 2019 does not consider any of the capacity outlined as an objective underlined in CAP 23.

Q3. The TDP currently provides general and non-project specific reasons for changes in project status e.g., from Active to On Hold or Removed. In response to the previous CRU consultation paper, stakeholders asked for more information on project status change and reasoning behind status changes.

In EirGrid's response they stated they are "happy to include more detailed reasons on project changes in future TDP reports if they are available, noting that ultimately the asset owner carries out the actual work on the system". Has this, in your view, been adequately addressed in the 2023 – 2032 TDP?

No, if the working relation between the TSO and the TAO is a key factor, it is important to understand the reason for enduring delays in relation to project delivery and also, why the infrastructure provided for is not adequate to integrate and support the State's binding renewable energy and greenhouse gas emission (GHG) reduction targets.

In this regard, the development of renewable energy projects and in particular offshore wind has the potential to make a significant contribution to the overarching Government objective of achieving a 51% reduction in Ireland's greenhouse gas emissions (GHG's) by the end of this decade and to the 80% target of Irish electricity consumption originating from renewable sources by 2030 provided the enabling framework is in place and operating in an expeditious manner.

A workable update to the Plan at hand is key to contributing to the achievement of these binding targets and moreover, to the provision of investment certainty which is very much needed if renewable energy projects at scale are to be delivered.

The updated Plan must accordingly consider the need for a much more rapid acceleration of renewables as described above including offshore wind and the urgent need for Ireland to transition away from fossil fuels in order to secure the State's long-term competitiveness by an effective transition to net zero.

Q4. Last year, CRU proposed that the TDP should include a link to the related PR5 submission from EirGrid. EirGrid is required to publish quarterly updates on the progress of all its transmission infrastructure projects as set out in CRU/20/1546, the CRU's PR5 Regulatory Framework, Incentives and Reporting Decision Paper. It is important to mention that from this version of TDP onwards, the main input from which the list of reported projects is obtained is the Network Delivery Portfolio (NDP). Do respondents consider this NDP approach helpful, and if so, is there related information that should also be considered?

It is not clear that this proposal represents the best and most effective approach. In this regard, the Eirgrid PR5 submission is a document which lays down the Transmission requirements to the Price Review 5 and therefore, the rationale for inclusion is not clear. In contrast, a mechanism to ensure that the PR programme is achieved as per the outline programme when agreed would be very beneficial.

Q5. Is there a clear process for the prioritisation and reprioritisation of projects in the 2023 – 2032 TDP? Do you have any suggestions in relation to this?

The prioritisation and updating of TDP supporting documentation represents a more important step. If the information used to develop the TDP structure and contents is updated and reflects the objectives and aspirations of the Government, the TDP should naturally have a priority outline.

A mechanism to ensure that projects are delivered on time is extremely important and a collaboration mechanism that enables developers to take part in relation to the contestable infrastructure development is also key and is particularly important in relation to the development of offshore wind farms. The draft TDP has several new projects relating to RESS 1, RESS 2 and ORESS 1 which are not reflected in the previous TDP with no infrastructure projects specifically included to address future auctions.

Q6. Have network constraints identified by respondents to the consultation of the TDP 2021-2030 been adequately addressed by EirGrid in the TDP 2023 – 2032, in your view? Are there any current network constraints that are not included in the TDP and will not be resolved by the successful completion of projects set out in the TDP 2022 - 2032?

The existing infrastructure is an enormous limiting factor, particularly in relation to ORESS auctions and for grid connection of OWF. The previous TDP and the current draft does not address the existing and future constraints.

While the Government has laid down an ambitious target of 37GW offshore by 2050 in the Phase 2 Policy Statement on the Framework for Phase 2 Offshore Wind, the lack of proper infrastructure close to shore or interconnection projects is a clear limiting factor to the achievement of this ambitious target. In this regard, the update to the 2014 Electricity Interconnection Policy as required by CAP 23 due to be published shortly, should be referenced given that an increase in interconnection capacity would provide stimulus to Ireland's nascent offshore wind sector given the potential of offshore wind to significantly increase the renewable energy base in the State and to further diversify supply.

A commitment to explore further interconnection including dual purpose hybrid interconnection (combined cross-border transmission network with offshore renewable generation with two or more countries) has also been underlined. While currently, the deployment of hybrid interconnectors is not provided for by existing national and EU legislative and regulatory frameworks, such dual-purpose interconnectors have the potential to contribute to the achievement of post 2030 climate and energy ambitions whilst also playing a significant role towards the creation of a pan-European offshore meshed grid.

Q7. As stated in Section 5.4 of the 2023 – 2032 TDP, "…there are transmission capacity constraints getting power into and around Dublin". Does the plan clearly outline the problems and address the solutions to the constraints in the Dublin area? Should there be a dedicated chapter specifically relating to Dublin in the TDP?

The other Government agencies should find other potential areas for industrial development outside of Dublin. If there are limited resources across Government and statutory agencies, the implementation of a specific TDP for

Dublin would likely result in more strain being brought to the existing system. Therefore, the TDP should prioritise infrastructure to facilitate renewable energy on a national basis to Dublin and also to other parts of the country.

Q8. The North West has, for some time, been identified as being an area where there is particular difficulty with network development (Section 3.2 of 2021 - 2030 TDP). The North West Project (CP0800) was cancelled and removed from the PCI list in 2021. There is one capital project covering The North West Project, CP1233 Donegal – Srananagh corridor. This project is reported as a Project in Early Stages in Section 6.2 and is currently under review by EirGrid's Transmission Power System Planning area. Is this approach adequate to address this particular difficultly with network development, in your view?

The proposed project will not be sufficient to address the large potential in the Northwest area. The lack of investment in Connacht to date, remains in the draft document and this represents a missed opportunity to harness the full potential of the renewable resources available in the Northwest. Therefore, it is suggested that an infrastructure of 400kV or HVDC (sea or land) should be developed from Bellacorrick to Tarbert or Moneypoint or even Dublin.

Q9. In the context of recent Climate Action7 policy and Security of Supply8 programme, does the report provide sufficient information on how projects would benefit carbon ceilings and security of supply?

The report does not provide information about the benefits of carbons ceilings or security of supply. It would be most helpful to have that information available to better support the decision-making process of prioritisation.

In this regard, the Department of the Environment, Climate and Communications (DECC) has recently carried out a review of the Security of Energy Supply of Ireland's Electricity and Natural Gas Systems. This consultation assesses different measures to support energy security in the State while meeting climate obligations and short-lists green hydrogen, demand response, electricity interconnection and storage as beneficial security measures.

Accordingly, it would be helpful if this policy document once published by the Department and the updated TSO Plan were aligned.

Q10. The TDP includes projects once they have moved past stage 3 of 6, do stakeholders consider this provides sufficient information on a project lifecycle?

Similar to the response to question 3 above any inefficiencies in the relation between the TSO and TAO should be promptly resolved by the CRU.

Q11. Should consideration be given to improving the accessibility of the TDP, for example, would an online map assist stakeholders in accessing and engaging with the projects?

Yes, however the TDP should be delivered on time and as per the initial schedule and projects should not be subject to enduring delays.

Q12. Are there any other aspects of EirGrid's TDP 2021 – 2030 Consultation Report that have not been implemented to your satisfaction in the 2023 – 2032 TDP?

As referred to above, the supporting documentation is not updated to reflect the State's binding policy targets and CAP 23 objectives. Also, no future RESS auctions infrastructure reinforcements are considered in the draft Plan.

Without the delivery of significant levels of offshore wind, it is clear that the State's binding carbon budgets, and sectoral emissions ceilings will not be achieved nor will the State's requirement to increase the proportion of renewable electricity to up to 80% by 2030 and a 51% reduction in GHG emissions by 2030.

Q13. Do you have any other suggestions to improve the TDP?

The TDP should reflect the State's binding targets and future infrastructure requirements with the Plan's supporting documentation updated to also reflect such targets. The current draft Plan and previous versions reflect a lack of advance planning to address the Generation transformation and Load growth.

Also, the proposal by ESB Networks and EirGrid to develop a proposal to commence a pilot of "renewable hubs" to run in parallel with the opening of the ECP-2.4 batch window is very much welcomed[3]. The proposal will be developed in the context of ESB Network's 'Networks for Net Zero Strategy' and EirGrid's 'Shaping Our Electricity Future'.

As the CRU intends to publish a Consultation Paper in Q2 2023 which will contain further details on the principles and intended working of the pilot and how it relates to ECP-2.4, the publication of a decision in this regard should be advanced as quickly as possible and built upon given the significant benefits that can be provided by such a flexible approach going forward.

[3] https://cruie-live-96ca64acab2247eca8a850a7e54b-5b34f62.divio-media.com/documents/CRU202326_Enduring_Connection_Policy_ECP_2.4_Decision.PDF

WESTERN
DEVELOPMENT
COMMISSION

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The Commission for Energy Regulation
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Western Development Commission (WDC) Response to the CRU Consultation on the Draft EirGrid Transmission Development Plan 2023-2032 CRU202320

Dear Ms Deegan,

The Western Development Commission[1] (WDC) welcomes this opportunity to make a short response to the above consultation on EirGrid's Draft Transmission Development Plan (TDP) 2023-2032.

The WDC is a statutory body with a remit to promote and encourage economic and social development in the Western Region (counties Donegal, Sligo, Leitrim, Mayo, Galway, Roscommon, and Clare). It operates under the aegis of the Department of Rural and Community Development.

The WDC regards the provision of quality energy infrastructure as essential to underpin the economic development of the region. Likewise, the WDC recognises the importance of the low carbon transition and is particularly concerned that the issues for our region are addressed[2]. Our region has very significant on and offshore renewable energy resources and it is important both to the economic development of the region, and to the achievement of the national renewable energy targets, that these resources are used to best advantage.

In this brief submission we highlight a number of issues for electricity transmission in the Western Region and answer the questions posed by the CRU in the consultation document on the draft TDP.

As noted in Section 5.2 of the TDP 2023-2032 the existing transmission network in the region (most of the Western Region (the seven counties) under the WDC remit is in EirGrid's BMW region) is predominantly 110kV and 220kV with limited 400kV infrastructure in the southern part of the region. The North West in particular is relatively isolated from the 220kV network and mainly comprises long lines of 110kV grid. There is a strong wind resource and already significant wind generation in the region. This along with the lower levels of electricity demand, means that the level of generation is great than the capacity of the network resulting in local constraints.

[1] For more information about the Western Development Commission see www.wdc.ie

[2] https://westerndevelopment.ie/policy/publications/making-the-transition-to-a-low-carbon-society-in-the-western-region-key-issues-for-rural-dwellers-august-2020-full-report/

There is, and has been for a number of years, a very clear need for significant investment in the network in region. The wind resource is the best in Ireland, and it is essential to ensure that this resource, which gives rise to excellent wind farm capacity factors, is made best use of in order to efficiently achieve national climate action targets. Lack of investment in the region's network undermines the region's, and Ireland's, capacity to achieve this potential.

A very significant increase in renewable electricity will be required to achieve targets for 2030 and beyond to 2050. Given the time it takes to plan and develop the transmission network, a longer term view needs to be taken to ensure investment we make in this decade will have capacity to meet our needs in the longer term. This is especially important in the Western Region which has significant resources for renewable energy but has been left behind in terms of network development. The TDP needs to provide clear information both about projects in progress *and* areas where projects are needed and how they will be planned.

In addition to our concerns about current onshore capacity, we are disappointed that there is very little reference in the TDP to the long term potential for offshore generation and the need to begin planning for a network which will have the capacity to facilitate such development. Long term targets are very ambitious, and we would expect that by the end of this TDP period (2032) some offshore wind projects will already be in place off the West coast. This is not acknowledged in the plan, nor is the 2050 Programme for Government target of 30GW of offshore generation by 2050. Planning to achieve these targets should already have commenced. If it has, the TDP does not indicate this or provide anything other than a cursory mention that it will be required. The recent consultation paper on the OREDP 2 indicated that two of the broad areas of interest for development of offshore generation are off the Western Region coast. These areas will need significant infrastructure investment to be able to achieve the potential of our offshore energy resources.

In the North West in particular, which is already lacking in infrastructure capacity, and with the OREDP 2 Broad Area of Interest proposed off the Donegal coast, it is essential that planning for network development to meet both on and offshore needs and that development is expedited and that developers can have confidence that the essential infrastructure will be in place when it is needed.

Likewise, while the TDP notes the target of 2GW of hydrogen production it does not provide any information on the planning of the transmission network, how it might be integrated, whether on or off grid and any network which might be needed to facilitate hydrogen production and use.

4. Consultation Questions

Q1. As a result of the consultation questions last year, EirGrid have agreed to provide more detail on projects in Chapter 5 including their drivers, needs, location, estimated completion, EirGrid Capital Approval dates (GW3), Project Agreement with ESB dates (GW6), forecast energisation date (ECDEI), capital project number (CP No.) and, next step in the six-step process for developing the grid. EirGrid have also provided more information on whether the project is developer led, TSO led or DSO led. In your view, does the content and format of the document adequately provide this information? Does this paper raise any concerns around delivery capability considering the challenges ahead? Does the document outline sufficient actions to address the drivers and needs presented? If not, please highlight the specific areas where additional actions may be required.

We acknowledge improvements in this TDP (the more recent data freeze date, and the current year as the timeline for the commencement of the ten year period. We also welcome the table format summarising projects. However, in the case of larger and more strategic projects, we do not find there is sufficient detail presented on the drivers and needs or on how the projects address them. for smaller, simpler projects this information is adequate. As mentioned above, the very significant developments necessary towards the end of the TDP period are not really discussed.

Q2. In EirGrid's consultation response paper for TDP 2021 – 2030 they indicated that they were investigating ways to provide developers and other interested parties with more timely information on project delivery and expected completion dates. Has this been addressed satisfactorily in the 2023 – 2032 TDP, in your view?

While improvements in the information provided in the TDP have been made, given that the TDP is an annual publication it is probably best if the most timely information is provided elsewhere. As a Plan the focus of the TDP should be less of a progress report, providing an annual update on projects already in progress (though this is important too), and more of a planning document detailing how the constraints, challenges and opportunities of the next decades will be addressed.

Q3. The TDP currently provides general and non-project specific reasons for changes in project status e.g., from Active to On Hold or Removed. In response to the previous CRU consultation paper, stakeholders asked for more information on project status change and reasoning behind status changes. In EirGrid's response they stated they are *"happy to include more detailed reasons on project changes in future TDP reports if they are available, noting that ultimately the asset owner carries out the actual work on the system".* Has this, in your view, been adequately addressed in the 2023 – 2032 TDP?

No, it is not adequately addressed, for example in relation to projects On Hold either no reason is give (pg 30) or examples of possible reasons are given (p35) but none are specifically related to any project and may or may not apply to any of them. For the project removed no reason is given.

Q5. Is there a clear process for the prioritisation and reprioritisation of projects in the 2023 – 2032 TDP? Do you have any suggestions in relation to this?
There does not appear to be a clear process for the prioritisation and reprioritisation of projects in the TDP.

Q6. Have network constraints identified by respondents to the consultation of the TDP 2021-2030 been adequately addressed by EirGrid in the TDP 2023 – 2032, in your view? Are there any current network constraints that are not included in the TDP and will not be resolved by the successful completion of projects set out in the TDP 2022 - 2032?

In our submission last year, we emphasised our concern that the North West Project (CP0800) had been cancelled, and removed from the PCI list, and that no project has been put in its place to address the serious issues in the northwest and in Donegal in particular. While the Donegal – Srananagh Corridor (CP1233) has been included in the TDP as a project in early stages of development there is no information about it and when it will be developed, what potential capacity improvements would arise from any new project and whether addition projects will be needed or are being considered.

In addition, while we previously welcomed the progress with the North Connacht project in the west (Mayo-Roscommon), we noted our concerned that it will be at full capacity by the time it is commissioned, and that more investment will be needed in the area. We do not feel this issue has been addressed.

Furthermore, as we noted last year, a very significant increase in renewable electricity will be required to achieve targets for 2030 and beyond to 2050. Given the time it takes to plan and develop the transmission network, a longer term view needs to be taken to ensure investment we make in this decade will have capacity to meet our needs in the longer term. This is especially important in the Western Region which has significant resources for renewable energy but has been left behind in terms of network development. The TDP does not give confidence that this is changing.

Q7. As stated in Section 5.4 of the 2023 – 2032 TDP, "*…there are transmission capacity constraints getting power into and around Dublin".* Does the plan clearly outline the problems and address the solutions to the constraints in the Dublin area? Should there be a dedicated chapter specifically relating to Dublin in the TDP?

If a decision is made to have a dedicated chapter specifically relating to Dublin in the TDP, then there also need to be dedicated chapters for other key areas of infrastructure constraint (e.g the north west) or chapters for projects which are addressing specific challenges (eg offshore wind, or hydrogen or interconnection needs).

Q8. The North West has, for some time, been identified as being an area where there is particular difficulty with network development (Section 3.2 of 2021 - 2030 TDP). The North West Project (CP0800) was cancelled and removed from the PCI list in 2021. There is one capital project covering The North West Project, CP1233 Donegal – Srananagh corridor. This project is reported as a Project in Early Stages in Section 6.2 and is currently under review by EirGrid's Transmission Power System Planning area. Is this approach adequate to address this particular difficultly with network development, in your view?

No. The difficulties with the network development in the northwest have been recognised for over a decade and various planned projects have been in development and cancelled or changed since then. This approach does not give any confidence that the issue is being address with clear intent (unlike for example the focus on development of the network in Dublin). The remaining North West project this project (CP1233 Donegal – Srananagh) is currently under review by EirGrid's

Transmission Power System Planning area and so there can be no confidence about the timing or the detail of the project and that it will be actually be completed. The cancellation of the North West Project (CP0800) was and its removal from the PCI list in 2021 shows that even where a project appears to be going through various development stages it may not be completed.

Long delays in the development and progression of a project to address the needs in the North West have meant that the amount of renewable generation seeking to connect in Donegal is in excess of the local demand and the capacity of the network. Despite this need, clear for many years, this TDP does not give a sense that this and other potential projects in the area are being prioritised.
In addition, as noted, given that one of the proposed Broad Areas of Interest for offshore generation listed in the OREDP2 consultation is off the Donegal coast it is likely that this will also influence the scale and type of potential network solutions. This is not acknowledged in the TDP, and while the OREDP consultation was only recently published, the potential for offshore renewable generation in the North West has been clear for some time.

Links to Wider Policy

Q9. In the context of recent Climate Action policy and Security of Supply programme, does the report provide sufficient information on how projects would benefit carbon ceilings and security of supply?

We do not feel it provides sufficient information, in relation to recent Climate Action policy and Security of Supply programmes, and not just on the potential benefits for the projects in these contexts, but also on how these challenges are being addressed as part of the wider network or system planning process. While the targets are quoted, there is no detail of the strategy and steps to be taken to allow those targets to be met. We are aware that the EirGrid strategy is under going revision, but the TDP needs to provide confidence that the longer term projects, which will be in development towards the end of the TDP period, are being planned and have sufficient ambition to meet the current targets for 2030 and will have the potential to adapt to the even bigger targets for 2050.

Q10. The TDP includes projects once they have moved past stage 3 of 6, do stakeholders consider this provides sufficient information on a project lifecycle?

No. While we understand that there are many uncertainties in early stage project development and so it might not be appropriate to provide too much detail, it would be beneficial to include any projects from the initial stages defining the problem to be addressed and the potential solutions so that users can feel confident that key challenges are being addressed. This is particularly the case for larger scale projects, and issues.

Q11. Should consideration be given to improving the accessibility of the TDP, for example, would an online map assist stakeholders in accessing and engaging with the projects?

An on line map could be helpful, especially in regard to location of particular stations etc. The current static maps are not a high enough resolution to easily read their names. A map could also be useful if it could be linked to the progress reports on the projects. However, this will only be useful if this information is kept up to date.

General Questions

Q12. Are there any other aspects of EirGrid's TDP 2021 – 2030 Consultation Report that have not been implemented to your satisfaction in the 2023 – 2032 TDP?

As we noted in our submission on TDP 2021-2030 we believe that it is still more of a progress report on projects which are already at a relatively advanced stage of development. There is no information about other network developments which may be needed by 2030, and little on what is in early stage development but will be advanced or completed by 2030.

Q13. Do you have any other suggestions to improve the TDP?

Currently, although titled a Ten Year Development Plan, the plan reads more like a progress update and there is little sense of the longer term planning which should be taking place to meet future energy challenges (e.g in relation to off shore generation off the west coast (in the context of OREDP 2) or for use of RE in hydrogen production). While these developments are in the early stages it would be expected that there will be operational projects before the end of this TDP (2032) and yet there is little reference to the process involved in meeting the infrastructure needs of such projects and timelines and stages EirGrid would envisage for the.

The TDP needs to provide confidence that such challenges (and others) are being addressed competently and in a timely fashion. This TDP does not do so, and so this is an area that could be improved.

While the end date of this TDP is 2032, the projects currently in development and those which will be developed before the end of this TDP period will be in place for the long term 2050 and beyond. There is no clear indication in this TDP that the longer term (2050 targets) are being acknowledged in the ten year planning process. It is important that they are as the lifetime of the assets in development is likely to be beyond 2060.

Conclusion

The focus of much of this consultation appears to be on the form of the TDP. Once again we would like to emphasise that given the time taken to development electricity infrastructure projects it is very important that projects which will be required towards the end of, or just beyond, this TDP period have already commenced. By 2032 there will have been very significant changes and developments (Offshore, Hydrogen, changed demand patterns) and yet this TDP does not give a clear sense of how these challenges are being addressed.

The WDC is pleased to make this submission to the consultation on EirGrid's Draft Transmission Development Plan 2021-2030. If there are any queries concerning this submission, please contact me.

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