



SONI's Transmission Development Plan for Northern Ireland 2020-29

Decision Paper – March 2021



About Utility Regulator

Utility Regulator is the independent non-ministerial government department responsible for regulating Northern Ireland's electricity, gas, water and sewerage industries, to promote the short and long-term interests of consumers.

We are not a policy-making department of government, but we make sure that the energy and water utility industries in Northern Ireland are regulated and developed within ministerial policy as set out in our statutory duties.

We are governed by a Board of Directors and are accountable to the Northern Ireland Assembly through financial and annual reporting obligations.

We are based at Queens House in the centre of Belfast. The Chief Executive leads a management team of directors representing each of the key functional areas in the organisation: Corporate Affairs, Markets and Networks. The staff team includes economists, engineers, accountants, utility specialists, legal advisors and administration professionals.



Our mission

To protect the short- and long-term interests of consumers of electricity, gas and water.



Our vision

To ensure value and sustainability in energy and water.



Our values

- Be a best practice regulator: transparent, consistent, proportionate, accountable and targeted.
- Be professional – listening, explaining and acting with integrity.
- Be a collaborative, co-operative and learning team.
- Be motivated and empowered to make a difference.



Abstract

SONI is the Transmission System Operator (TSO) for Northern Ireland and is responsible for ensuring continuity of electricity supply for homes and businesses across Northern Ireland. In order to do so SONI must plan investment in the transmission network.

The Transmission Development Plan for Northern Ireland (TDPNI) 2020-2029 is the proposal for the development of the NI transmission network and interconnection over the ten years from 2020. This plan presents projects that are expected to be needed for the operation of the transmission network in the short and medium-term.

Audience

This document is likely to be of interest to regulated companies in the energy industry, government, industry groups, consumer bodies, environmental groups and those with an interest in the energy industry and network planning.

Consumer impact

The TDPNI provides clarity to consumers on:

- 1) The drivers of electricity transmission investment;
- 2) The need for action;
- 3) The location and activity of network investment; and
- 4) The estimated cost and timing of project completion.
- 5) Tomorrow Energy Scenarios NI



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Executive Summary

The Transmission Development Plan for Northern Ireland (TDPNI) 2020-2029 covers the proposals for the development of the NI transmission network and interconnection over the ten years from 2020. This plan presents projects that are expected to be needed for the operation of the transmission network in the short and medium-term.

The TDPNI will help to achieve the strategic objectives as laid out by national and EU policies. The strategic objectives include:

- a) Ensuring the security of electricity supply;
- b) Ensuring the competitiveness of the national economy;
- c) Ensuring the long-term sustainability of electricity supply.

In accordance with its' licence (Condition 40), SONI must prepare a TDPNI every year. Under Article 22(4) of Directive [2009/72/EC](#), Utility Regulator (UR) must then consult on the draft TDPNI prepared by SONI.

As part of this process, SONI has consulted upon a plan and submitted a draft TDPNI to UR for consideration. UR has [consulted](#) on the draft plan, sharing stakeholder views with SONI.

Both UR and SONI have considered the responses. This paper sets out the findings of the consultation and final decision of UR regarding approval of the 2020-2029 TDPNI.

1. Introduction

Background

- 1.1 SONI is the independent electricity Transmission System Operator (TSO) for Northern Ireland. As part of its function as TSO SONI has a licence obligation under Condition 40 to produce a Transmission Development Plan for Northern Ireland (TDPNI).
- 1.2 SONI has consulted upon a draft TDPNI for 2020-29. Results have been considered and an updated plan has been submitted to UR.
- 1.3 Under Article 22(4) of Directive [2009/72/EC](#), UR must then consult on the draft TDPNI prepared by SONI. This consultation closed for comments on the 01 March 2021.
- 1.4 This paper details the findings of the consultation and the subsequent decisions by UR.

Related Documents

- 1.5 UR consulted on the SONI [Draft TDPNI 2020-29](#). This was accompanied by:
 - a) SONI Report - [TDPNI Consultation Responses](#);
 - b) SONI Report – [SONI Response report](#)
 - c) Strategic Environmental Assessment (SEA) – [Environmental Report](#); SONI produced an Environmental Appraisal Report (EAR) ([link here](#)) assessing TDPNI 2020-2029 against the SEA accompanied with the TDPNI 2018-2027.
 - d) Habitats Regulation Assessment (HRA) – [Report](#).
- 1.6 This paper should be read in conjunction with:
 - a) Final TDPNI 2020-29 – [Report](#);
 - b) UR Consultation – Stakeholder Responses.

2. Overview

TDPNI

2.1 SONI's TDPNI 2020-2029 is the third such plan that they have had to complete. This ten year plan undertakes a variety of functions including:

- a) Outlines the drivers for network development;
- b) Details the network investment needs;
- c) Lists the projects and activity required to address these needs;
- d) Describes the TSO's planning process;
- e) Details project information i.e. category, planning area, location, activity, estimated cost and completion date.
- f) Integrates SONI's Tomorrows Energy Scenarios

2.2 The TDPNI describes 79 different projects under this plan. Of this, 43 are NIE Networks asset replacement projects and 36 are network development projects. On a region and project category basis, they are captured as follows:

Table 1: Projects by Planning Area and Category

Projects by Planning Area and Category				
Project Category	North-West	South-East	Both Areas	TOTAL
New Build	10	6	0	16
Uprate / Modify	7	7	4	18
Refurbish / Replace	0	0	0	0
Combination/ Other	0	2	0	2
TOTAL	17	15	4	36

2.3 Combined Capex expenditure on transmission development projects is estimated at £534m for the ten year period.

2.4 SONI's expenditure on transmission development projects due for completion over the period 2020 - 2029 is estimated at £37.3m.

- 2.5 Estimated TO (Transmission Owner) costs associated with the Asset Replacement plan is £215m. TO costs associated with transmission development projects is estimated at £497.2m.
- 2.6 Total estimated costs of all projects detailed within SONIs 2020-2029 TDPNI is £750m.
- 2.7 UR will determine the amount that can eventually be recovered from customer and generator tariffs for these projects. Link to these TO costs & estimated completion dates can be found [here](#).
- 2.8 To allow for comparison of transmission development projects on a year-on-year basis, data is represented at a fixed point in time referred to as the data freeze date. The data freeze date of TDPNI 2020-2029 was 1st July 2020.
- 2.9 In regards to the Strategic Environmental Assessment (SEA), it should be noted that the SEA has a five year lifespan and was carried out on the TDPNI 2018-2027. The environmental report and shadow Habitats Regulations report are available on SONI's Website.¹ The main findings of these assessments have influenced and are incorporated into the Plan.
- 2.10 SONI has also produced a report summarising the feedback received from its own consultation. It details the TSO responses to issues raised and subsequent changes made from the previous version of the TDPNI to the updated plan consulted upon by UR. This report is available on SONI's website [here](#).

¹ <http://www.soni.ltd.uk/the-grid/projects/tdpni/related-documents/>

3. Findings

Consultation Responses

- 3.1 Four responses to UR consultation were received. Three are published alongside this decision paper, while one has requested that their full response remain confidential. Submissions were provide by
- RenewableNI
 - MEL (Mutual Energy Limited);
 - Islandmagee Energy Ltd
- 3.2 The responses that were received focus particularly on the integration of increased renewables onto the NI system and grid development. As the drive towards net zero targets and industry await the publication of the Department for the Economy’s (DfE) New Energy Strategy responses received highlight the importance of the North / South interconnector and increased capacity within NI.
- 3.3 This chapter summarises the stakeholder views and provides UR thoughts.

Table 2: Views and Responses

Issue	Consultation Response
<u>Net Zero Target</u>	The latest DfE figures calculate 48% of electricity produced in NI is from Renewables. These figures are questionable as they do not take account of Transmission / Distribution losses. The figures do however point to an ever increasing level of energy produced by renewables and should act as a benchmark against which to assess progress on future targets. <i>[RenewableNI]</i>
<u>UR Response</u>	UR welcomes the information provided by DfE. The increasing levels of renewable energy being utilised to power NI is testament to the all industry stakeholders as we progress towards our net zero targets. The methodology of the derived figures is an area that DfE may consider in further granular analysis going forward.
<u>Energy Strategy</u>	As we are anticipating an ambitious Energy Strategy for NI, being in place by the end of 2021, it is clear that DfE’s strategy will provide a clear path to net zero by 2050. The Minister for Economy has given a clear commitment to target not less than 70% renewables by 2030. We continue to argue for an 80% target by 2030 though it is clear that a considerable increase in renewable energy will be required to meet both the strategy and increasing demand as a result of greater

	<p>electrification of heat & transport. In the TSOs TES estimates an additional 2753MW of renewable generation will be required to meet an 80% target, it is important that grid development keeps pace with increasing capacity that will result in reduced dispatch down, reduced costs, and reduced emissions. <i>[RenewableNI]</i></p>
<u>UR Response</u>	<p>As the industry awaits DfEs New Energy Strategy for NI, UR will continue to support the drive for grid developments along with the TSO and TAO. We recognise the need for increased capacity to facilitate further increased level of renewables of all technology types to reduce and meet the department's targets. UR will continue to engage with DfE on the New Energy Strategy for NI.</p>
<u>Constraints and Curtailment (Dispatch Down levels in NI)</u>	<p>Dispatch down (DD) levels in NI are concerningly high in 2020. An increase from 11.3% to 16.9% in Q1-Q3 2020. This compares unfavourably with ROI, with levels of 11% over same period. The cost to industry of DD in NI at £24m for first three quarters of 2020 after taking account of compensation received. A projected figure of £30m for 2020 is unacceptable.</p> <p>Approx. 45% of 2020 DD is due to constraints. Constraints can be removed by further transmission grid development in NI. Therefore the draft development plan is critical for NI renewable industry. The draft plan is vital that it can reduce constraints currently being experienced.</p> <p>The draft TDP does not outline sufficient investment to facilitate the anticipated level of renewable deployment required to decarbonise the NI system. It is welcomed that the TSO stated commitment to 95% SNSP by 2030, however we feel that the investment in this draft TDP is insufficient to meet this objective. <i>[RenewableNI]</i></p>
<u>UR Response</u>	<p>UR acknowledge that the current levels of Dispatch Down are high in the context of the NI system.</p> <p>We would expect Dispatch Down considerations to be addressed upon the delivery of DfEs New Energy strategy and in its confirmed targets in delivering decarbonisation of the NI electricity Network.</p>
<u>Connections</u>	<p>Projects within the TDPNI highlighted as "RES Integration" would be beneficial where the release of capacity for new projects and / or to be developed or if the intention for reinforcements is to fulfil the current queue of projects waiting to connect, as well as currently operational without firm access.</p> <p>It would be a welcomed indication of the potential MW capacity that is supposed to remain available for new connections.</p> <p>There is a fundamental need to develop a flexible and principle based approach to connections and network access. Policy must be</p>

	future proofed to provide clear and comprehensive processes that facilitate all types of connections in a transparent and cost effective manner. <i>[RenewableNI]</i>
<u>UR Response</u>	UR acknowledge the comments made by RenewableNI, It is important that where new capacity is released, its utilisation is easily identifiable to allow industry to prepare, plan, construct and operate the NI system with increasing levels of renewables for RES integration, while also developing the network to ease existing network issues.
<u>Tomorrows Energy Scenarios (TES)</u>	We welcome SONIs inclusion of an 80% RES-E pathway in its final TES document. We would welcome additional analysis around the suitability of the network reinforcements when considering the TES scenarios to demonstrate that proposals in the TDPNI are in line with facilitating access to the network to low carbon technologies and those can optimally with acceptable Dispatch Down levels deliver on decarbonisation targets. <i>[RenewableNI]</i>
<u>UR Response</u>	SONIs TES scenarios will play a major role in shaping NI electricity system and along with the DfEs New Energy Strategy the TDPNI and TES are critical to the development and implementing decarbonisation targets.
<u>Interconnection</u>	<p>We fully support the development of the second North/South Interconnector and understand the challenges of bringing forward and to its completion estimated winter 2023. A substantial proportion of current constraints of renewable generation in NI would be removed with the completion of the N/S Interconnector.</p> <p>Given the challenges, we believe SONI should be continuously planning for alternatives should the N/S not be developed. We would like to see these contingency plans included in the final version of the plan.</p> <p>We welcome the new target date of 2024 for the completion of works to allow full integration of the 500MW export capacity of the MOYLE Interconnector. It is noted that NI has been a net importer via MOYLE during times of constraint. There should also be an opportunity to increase exports during curtailment due to the recent increase in firm export capacity to 250MW. We would ask SONI to explore ways to improve intraday trading in response to real time constraints and curtailment events. Also maximise any counter trading opportunities on MOYLE to reduce Dispatch Down of NI renewable generation. <i>[RenewableNI]</i></p> <p>Previously Moyle submitted comments on the draft 2019-2028</p>

	<p>Transmission Development Plan, welcoming inclusion of a project in the plan – ‘Moyle 275 kV Reinforcement’ in section 7.4.6 – which would permit full use of Moyle’s technical 500 MW export capacity. We are pleased to see that the estimated completion of this project has moved forward by 4 years to 2024.</p> <p>Moyle’s export capacity has historically been restricted by limitations on the GB system but these restrictions are due to be lifted from April 2022 so the NI system will be the limiting factor on Moyle exports from that point. Our understanding is that this project addresses a risk that is of low probability. To that end we suggest it may be optimal to complete a CBA before April 2022 as a probabilistic assessment may conclude that Moyle’s 500MW export capacity can be facilitated even earlier than 2024. <i>[Mutual Energy Ltd]</i></p>
<u>UR Response</u>	<p>UR fully support the N/S interconnector and agree with the comments made regarding its benefits for the renewable industry in NI in reducing Dispatch Down levels.</p> <p>We agree with comments that it will be a welcomed milestone that MOYLE will be able to reach its full export capacity, this will again bring its benefits for renewables in NI and lower Dispatch Down levels.</p>
<u>TSO / TAO Collaboration</u>	<p>We welcome the increased co-ordination between SONI and NIE Networks as well a good level of engagement with the renewables industry. We would ask only that this continues to develop to ensure the best outcome for the system as a whole. This includes co-ordinated planning and operational process, data management, and transparency, to enable efficient system decisions i.e. whether an investment at a transmission or a distribution level is in the best interest of consumers.</p> <p>We believe that co-ordination of network planning must take into account the all-island nature of the electricity market and in particular the importance of circuits to the west and into Donegal. <i>[RenewableNI]</i></p>
<u>UR Response</u>	<p>UR agree with RenewableNI comments and it is encouraging that both SONI and NIE Networks are collaborating and engaging at a good level with the renewables industry. It is important that SONI and NIE Networks engage not just with the renewables industry but all industry stakeholders so that efficient decisions can be made when planning and delivering a network and market that will be able to adapt and evolve towards our net zero targets.</p> <p>This collaboration and engagement between both parties and the wider industry will increase once DfE publish their New Energy</p>

	Strategy.
<u>Off-Shore Developments</u>	<p>We note that both SONIs Addressing Climate Change and Accelerated ambition scenarios include a level of offshore generation. It is important that SONI collaborates with industry to ensure that as developers are planning offshore projects that SONI is simultaneously putting in place the infrastructure needed to bring projects onshore.</p> <p>There is an opportunity to use the ROI as an example of the time and methodologies taken to examine various offshore grid delivery models and their overall implementation. It is vital that the grid infrastructure and capacity does not act as a barrier to offshore development. It will therefore be necessary to commence work on this in the early years of the TDP to ensure that we are ready to incorporate offshore generation by 2030. <i>[RenewableNI]</i></p>
<u>UR Response</u>	UR agree with RenewableNI's comments. It is important that SONI include, study and model offshore generation into the generation mix for NI and collaborate with the industry in its delivery and implementation onto the NI system, while also taking decisions that are in the best interests for NI consumers and the all-island market.
<u>Pipeline Data</u>	<p>Along with the RenewableUK Project Intelligence resource data and our own data, shows that there is currently at least 1.27GW of onshore wind and 486MW of storage projects in the development pipeline. This figure may be higher due to projects in development which we are not yet aware. We would expect this figure to rise with the production of DfE energy strategy in 2020 and any resultant policies which would encourage the deployment of renewables to help achieve net zero.</p> <p>Since the 2019-2028 TDP there has been 1 project cancelled, 1 project's connection offer expired, only 1 new project and many more projects being delayed. The rate of grid development does not match the rate of new generation connections. We are concerned that without significant strategic investment in both the transmission and distribution system that levels of dispatch down could increase further negatively impacting upon efforts to meet new renewable electricity targets and increasing consumer costs. <i>[RenewableNI]</i></p>
<u>UR Response</u>	UR welcome the information provided by RenewableNI in their consultation response regarding future projects. On the delivery of DfEs New Energy Strategy, both SONI and NIE Networks shall review grid developments that will allow for further integration of renewables on the NI system. SONIs TES will play a vital role in integrating new projects onto the NI system and prepare for network development that will allow for meeting net zero targets.

<u>Storage</u>	<p>In 2012 planning permission was granted for the construction of a new underground gas storage facility at Islandmagee. The new gas storage facility will be classified under the 2015 Control of Major Accidents and Hazards (Comah) regulations. It is currently envisaged that engineering construction activities will commence on the new facility in H2 2021.</p> <p>IMEL, as a prudent operator, has commenced consultation with both SONI and NIEN, and are aware of several infrastructure upgrade projects which are to also occur in a similar geographical location. Therefore, any simultaneous operations and wider implications will require to be assessed together by all parties to ensure sufficient consideration and appropriate mitigation for both projects, and the wider environmental and societal impacts. <i>[Islandmagee Energy Ltd]</i></p>
<u>UR Response</u>	<p>UR acknowledges the engagement with the TSO and TAO. We are of the view it is vitally important as projects are developing in NI, continual engagement between all parties is required to ensure the continual secure operation of the Transmission and Distribution system and development of each network.</p>

- 3.4 UR have engaged with SONI regarding the responses received to our consultation. In our engagement, SONI note that responses received to their draft consultation includes similar responses received by UR. SONI may engage with all respondents regarding their responses received by UR.

4. Conclusions

Decisions

- 4.1 UR welcomes the responses and engagement from stakeholders on SONI's draft TDPNI completed by SONI. We acknowledge from the responses provided within SONI's consultation and UR's consultation, that the focus on increasing renewables on the system along with the importance of grid development projects and the North / South interconnector are key to delivering on net zero targets. We acknowledge the positive views and comments on the continued collaboration and engagement between SONI and NIE Networks and the wider industry in their role of delivering a safe and secure electricity network for the benefits of NI consumers.
- 4.2 It is the decision of UR that the 2020-2029 TDPNI provided by SONI in accordance with Condition 40 of SONI's TSO licence, be approved and published accordingly.

4.3 As indicated in the consultation responses and UR's review of the 2020-2029 TDPNI, there are a number of information areas which we would like to see continued and considered in future plans. This includes the following:

- 1) Projects labelled to identify that they are an addition or new project from the previous year's TDPNI.
- 2) Project Capex costs – TSO estimate displayed as well as combined.
- 3) Detail on new renewable capacity including projected connection dates per project that focus on the net zero targets.
- 4) Continued monitoring of delivery against planned projects including reasoning for revised completion dates/costs
- 5) Continued monitoring of estimated versus actual spend on completed projects
- 6) Continued detail on the economic costs and benefits of certain projects and/or information on constraint problems which provide a context for action.
- 7) Integration of responsibilities of the TSO regarding grid development that shall be delivered from the New Energy Strategy (Subject to DfE delivery of the New Energy Strategy)