Report on Public Consultation on Transmission Development Plan Northern Ireland 2021-2030

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Introduction

SONI is the electricity transmission system operator for Northern Ireland.
This means we plan for the future of the electricity transmission grid and operate it every minute of every day. This includes interconnection to neighbouring grids and running the all-island wholesale electricity market (Single Electricity Market (SEM)).

We ensure that everyone has power when they need it at the most economic price possible. The grid safely brings power from generators and sends it to NIE Networks. They then supply electricity to every home, farm, community and business in Northern Ireland via the distribution grid.

SONI is playing a pivotal role in supporting the delivery of Northern Ireland Executive's new Energy Strategy with its focus on transformative change in the power system by 2030 and beyond to net-zero carbon emissions by 2050.

SONI is committed to delivering the transformation required. The transmission grid needs to be made stronger and more flexible to transport the increases in clean energy generation which we expect to see this decade. It also needs to be secure so that consumers have the high quality and reliable electricity supply they have come to expect.

The projects outlined in this document will ensure the transmission grid is fit for the future; providing for Northern Ireland's environmental, societal and economic aspirations.

SONI is certified as an independent transmission system operator, with no vested interest in the generation or selling of electricity. We don't own the grid infrastructure and have no self interest in adding to it. We work every day with NIE Networks who build, own and maintain the grid transmission assets.

As a monopoly service provider, we are regulated by the Utility Regulator for Northern Ireland. Our funding is provided through a rigorous price control process and each project proposed in this document will be subject to regulatory funding.

Our Purpose

Our purpose is to transform the power system for future generations. The environment and our society are at the heart of what we do and as such, we are committed to delivering a clean energy system as a direct response to the climate crisis.

The Northern Ireland Executive's recently published new energy strategy sets clean energy goals for 2030 - for these to be delivered, industry, government, communities and landowners must collaborate to make it happen.

In order to make the Energy Strategy's vision a reality we need to add more energy from renewable sources to the power system. This means that the electricity grid will need to carry more power from energy sources that vary depending on the weather. This power will also need to be carried over longer distances.

As a result, we need to make the grid stronger and more flexible. The projects outlined in this document will ensure the transmission grid is fit for the future and will also ensure that Northern Ireland continues to have a reliable and high quality power supply.

Northern Ireland's electricity system is world leading when it comes to the integration of renewable energy and SONI's innovation and operations are a key part of that success. For example, the System Non-Synchronous Penetration (SNSP) limit has now been raised from 70% to 75%. SNSP is a measure of the amount of electricity coming from variable renewable sources (like solar and wind) that the electricity system can safely accept at any point in time. This percentage makes Northern Ireland a world leader in the integration of renewable electricity onto the grid. To build on this momentum we need a strong, resilient and flexible transmission grid. Our corporate strategy outlines our commitment to transforming the power system for future generations[1].

While SONI has a unique role to play in making the grid ready for Northern Ireland's low carbon future, we are also responsible for security of supply for consumers. We manage the balance between supply and demand on a second-by-second basis and model medium and

[1] www.soni.ltd.uk/strategy2025

long term adequacy in order to prepare industry and the market for what will be required to keep the lights on.

Northern Ireland has a wealth of natural resources and expect to see an increase in onshore wind as well as offshore wind, battery technology, new interconnection and a cleaner more efficient gas plant coming online in the coming decade and beyond. Northern Ireland can import and export via the Moyle Interconnector. In addition, the Single Electricity Market (SEM) is supported by the East West Interconnector between Wales and Ireland. Interconnection is a critical pillar of today's system and market operation.

In 2021, in preparation for the publication of the Energy Strategy, SONI launched an extensive consultation into how an ambition of at least 70% of electricity from renewable energy sources (RES-E) could be delivered by 2030. This consultation was called Shaping Our Electricity Future. Through this consultation we sought the views of all stakeholders into how renewable energy and new transmission network should be delivered to achieve a RESE target of at least 70% by 2030.

Following the conclusion of the consultation process, SONI assessed in detail the feedback from the general public and industry – this was then used to prepare a final Shaping Our Electricity Future roadmap which was published in November 2021, and is available on the SONI website[2]. The roadmap identifies a number of projects described in this TDPNI as being critical for delivering a 70% RES-E target in Northern Ireland.

The Transmission Development Plan Northern Ireland (TDPNI) 2021-2030 is the blueprint for the development of the transmission network and interconnection over the next ten years.

This ten-year plan presents projects that are expected to meet the operational needs of the transmission network. The plan also outlines future needs that may drive future potential projects. We have a license[3] obligation to produce this document.

[2] https://www.soni.ltd.uk/the-grid/shaping-our-electricity-f/

[3] SONI TSO Licence (Condition 40)

Before we develop or add to the grid, we work with those who may be affected by our plans. We aim to make grid development a consultative process with communities and landowners at the heart of it.

We have a three-part grid development process which puts public consultation at the heart of how we upgrade and improve the transmission grid[4]. On each project, we want to engage with the community, elected representatives and other stakeholders with a goal of finding the best possible solution, and key to this is understanding local concerns.

In order to provide a balanced solution, we aim to ensure that our approach minimises costs to the consumer while also contributing to Northern Ireland's clean energy targets and supporting security of supply. By working with these principles at our core, we can transform the power system to deliver for consumers and our economy, while keeping Northern Ireland's switch to clean energy on track.

Before the TDPNI can be approved, SONI undertook a consultation on the draft TDPNI[5] in order to capture the inputs from stakeholders. Based on the responses to the consultation we update the draft TDPNI, where necessary, and submit a consultation report alongside the updated TDPNI to the Utility Regulator (UR).

Following this, the UR is obliged to hold a further public consultation on the draft TDPNI.

This document is the report on the SONI TDPNI 2021-2030 consultation. It describes the consultation process and provides an overview of the submissions received and our responses to the issues raised. We would like to thank all stakeholders who responded.

Description of SONI's Consultation Process

The draft TDPNI was posted for public consultation on the SONI website (soni.ltd.uk) on 18 January 2022 and the consultation ended on 15 March 2022. It was published to the SONI

[4] Have Your Say (soni.ltd.uk)

[5] EU Directive 2019/944 (Article 51)

consultation (consult.soni.ltd.uk) portal on the same date, enabling stakeholders to access all relevant material and make a submission in the same place.

A notification of SONI's consultation was sent, via email, to the SONI stakeholders subscribed to the info@soni.ltd.uk mailing list. Notification of the consultation was also publicised on SONI's social media channels. Throughout the consultation period, SONI social media channels posted several notifications in order to remind stakeholders of the submission timeline.

Purpose of the Transmission Development Plan

Local and UK strategic energy policy objectives set the context for investment in the Northern Ireland transmission system to ensure security of electricity supply, competitiveness of the economy, and long-term decarbonisation of electricity supply. To achieve these strategic objectives, it is necessary to invest in the development and maintenance of the electricity transmission system.

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

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

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

Responses to the Consultation

SONI received fourteen submissions in response to the consultation. These were from:

- DUP Group on Antrim and Newtownabbey Borough Council
- Ards and North Down Borough Council
- Armagh City, Banbridge & Craigavon Borough Council
- Causeway Coast and Glens Borough Council
- Derry City and Strabane District Council
- DW Consultancy (DWC)
- Lisburn and Castlereagh City Council
- Mid Ulster District Council
- MJM Renewables
- Mutual Energy
- Newry, Mourne and Down District Council
- RenewableNI
- Oluwasola Ademulegun, Centre for Sustainable Technologies, Ulster University
- TI LirIC Ltd

We would like to thank all parties for their responses. The rest of this report deals with the issues raised in these submissions. We have attached fourteen submissions with this report.

These responses are also publicly available on the SONI consultation portal at consult.soni.ltd.uk[6].

In the following sections, we summarise and respond to the submissions.

[6] https://consult.soni.ltd.uk/consultation/draft-transmission-development-plan-northern-ireland-2021-2030

Summary of feedback

Dispatch Down

RenewableNI

The projects outlined in the TDPNI will be vital in reducing constraint levels in NI which had been rising significantly since 2018. Even in 2021, which was a low wind year, constraints remained over 4%. Analysis by Mullan Grid suggests that constraints on the existing N-S Interconnector make up a significant proportion of those experienced in NI and will therefore be significantly reduced by the completion of the second N-S Interconnector…

…It is vital that transmission system developments keep pace with the connection of new renewable generation, and we see a corresponding ramping down of min gen, otherwise constraint levels will make future renewable investments unfinanceable and potential carbon savings will not be realised.

Oluwasola Ademulegun, Centre for Sustainable Technologies, Ulster University

Constraint groups within the electricity networks (110 kV, clusters, and bulk supply points) segment the Northern Irish power network into group networks: at such resources could be localised to effectively manage the individual sub-networks of the constraint groups of the electricity grid.

- The system operator should regularly provide updates on the constraint area of the network and liaise with the regulator to make available market arrangements for storage….
- …Without a rewarding market arrangement, the mass energy storage deployment would prevent the constraints and curtailments of the renewables, albeit unprofitably, especially at higher storage costs…
- ...Finally, there is a need for new Wind Dispatch-Down (WDD) service

Our Response

SONI is aware of the issues with dispatch down and curtailment. We recognise that they are a barrier to a more economic transmission system. The reinforcements required for renewable energy sources integration are in the TDPNI to address these issues in the long-term.

The location of battery storage projects is a choice for developers in the SEM considering a number of different locational signals. We note that three of the four batteries currently connected or connecting in Northern Ireland are located in constrained parts of the grid and will be able to avail of opportunities highlighted here.

The Shaping Our Electricity Future Roadmap published by SONI highlights plans to improve systems for scheduling and dispatch of energy storage through the existing balancing market arrangements, which would consider the network model and therefore actions to resolve network congestion. This roadmap also highlighted the potential need to consider a specific congestion management product in the future. SONI is working with the SEM Committee to develop new arrangements for the procurement of system services and to optimise the participation of demand side response within the markets. This work is being undertaken through the Future Arrangements for System Services project and we would be happy to engage with the University of Ulster and other interested parties through that forum.

Contestability

RenewableNI

RenewableNI raised concerns about contestable connections at transmission voltages.

Our Response

SONI notes that the financeability barrier to it entering into the agreements necessary to facilitate contestability was removed by the modifications to the TIA approved by the UR in November 2021. We are currently working with NIE Networks to implement the changes that this unlocks, and we would be happy to engage with any party considering a contestable connection.

Public Engagement

DUP Group on Antrim and Newtownabbey Borough Council

The publication of the Energy Strategy for Northern Ireland – the Path to Net Zero, published by the Economy Minister, Gordon Lyons MLA in December 2021 put in place ambitious targets to transition to cleaner forms of energy…

…We note in TDPNI 2021-2030 that you state that the transition to low-carbon and renewable energy will have "widespread consequences" and will require a "significant transformation" of the electricity system. In moving ahead with this transformation, it is vital that all stakeholders are consulted and that projects are done 'with' communities and not 'to' them.
We therefore welcome the commitment to fulsome, transparent engagement with stakeholders and the consultation processes that have been put into place by SONI to find the best possible solutions.

We note a number of projects outlined in the TDPNI, such as the Belfast Metropolitan Redevelopment, which have relevance to this Council area and we look forward to engaging with you in greater detail as they move ahead via their own individual consultation processes.

Our Response

As the electricity transmission system operator for Northern Ireland, SONI seeks to engage consistently with all internal & external stakeholders from early-on in the project lifecycle. We have a three-part grid development process[7] which puts public consultation at the heart of how we develop the transmission grid. On each project, we want to engage with the community, elected representatives and other key stakeholders with a goal of finding the best possible solution, and key to this is understanding local concerns[8]. The delivery of best practise community consultation is a key commitment in our 2020-25 Strategy.

We look forward to engagement with local councils on the projects taking place in their respective areas.

[7] https://www.soni.ltd.uk/media/SONIs-Powering-The-Future-Grid-Development-Process-brochure.pdf

[8] https://www.soni.ltd.uk/about/strategy-2025/

Innovation / New technology

Derry City and Strabane District Council

Council recognises the need for electricity grid development to meet future demand for the roll out of Electric Vehicles and Heat Pump technology.

Council would also see to highlight the impact and interdependencies of battery technology, at a domestic & commercial level on the development of the grid; and energy efficiency on grid capacity and the long term generation strategy.

Renewable NI

The Shaping Our Electricity Future roadmap jointly published by EirGrid and SONI in November 2021 identified 'Potential transmission network reinforcements' which included two dynamic line rating (DLR) installations (see references at Table 2, Figure 5, Table 9, Section 5.4.2, Figure 22, Table 25, & Table 26). However, the draft TDPNI makes no reference to these essential schemes to facilitate the connection of additional renewable generation at clustering substations in the west of Northern Ireland.

DLR technology is an established method of maximising the use of transmission assets, which is commonly, and successfully, used throughout Europe. Indeed we understand that NIE Networks has recently been completing trials using this technology on their infrastructure. In addition we are aware that EirGrid are currently tendering this technology for use in RoI. These schemes can be installed with minimum interruption, lower costs, and much quicker timeline than other deeper reinforcements. We would urge SONI to include these two schemes within the final TDP for 2021-2030.

Our Response

SONI promotes innovation in the development of the transmission system. Any network reinforcements required to facilitate the connection of contracted storage schemes in future will be included in future versions of the TDPNI. SONI works closely with NIE Networks to ensure that any transmission reinforcements required to support changes in demands on the distribution system such as EVs or batteries are delivered as efficiently as

possible. We will jointly assess options that include both distribution and transmission reinforcement solutions to ensure the optimum overall outcome. The joint reports will be published on SONI's website as part of our process for delivering any transmission solutions.

Shaping Our Electricity Future is a programmatic assessment of the future development of the transmission network in Northern Ireland. It followed very detailed engagement with the general public and industry over a 14 week period. The analysis itself was based on a subset of the Transmission System Security Planning Standards - we assessed the performance of the transmission network for the following conditions:

- The intact network
- The network following the loss of any single item of equipment such as a transmission circuit (referred to as the N-1 condition)
- The network following the loss of any 275 kV double circuit in Northern Ireland (this is also considered an N-1 event)

Projects will be assessed in more detail, with consequent detailed public engagement, through the aforementioned three-part grid process which puts public consultation at the heart of our decision making. Further studies, such as feasibility reports, will be required to assess whether DLR will be an optimal solution to reaching our energy targets and addressing the operational system needs of the associated area.

Gas Industry Co-ordination

Mutual Energy

TESNI is due to be reviewed every two years and we recommend that future reviews include more extensive collaboration with the gas industry (and others, as may be appropriate) to jointly scenarios which appraise a range of potential options in meeting final energy demand – e.g. gas, power and other potential solutions…

…Failure to adequately consider possible counterfactual net zero energy system scenarios may result in sub-optimal assessment of the transmission network 'reinforcement drivers and needs'. For example, increases in demand for hydrogen (including delivering system security, as well as meeting heating and other energy sector demands) is likely to influence

the stated drivers of "reinforcements to facilitate inter-regional power flows" and/or "reinforcements required to support changes in, or connection of new demand", subject to the siting of electrolysers. Given this will impact both the electricity and gas networks, we suggest there is a need for closer coordination across network operators to consider potential options regarding the scaling-up of electrolytic capacity on the system and its strategic siting, noting the findings of Gavin & Doherty Geosolutions Ltd.'s Wind Energy Ireland commissioned 'Hydrogen and Wind Energy – The role of green hydrogen in Ireland's energy transition' report7 , which suggested, inter alia, that pipeline injection is the leading option to rapidly stimulate a domestic hydrogen market.

We would suggest the needs of the power transmission system to support the future role of hydrogen throughout the energy transition needs to be adequately assessed in the TDPNI and is required to allow SONI to deliver upon its obligation to "plan the development of a safe, secure, reliable, economical, efficient, and coordinated transmission network that is able to meet all reasonable demands for electricity", taking a long-term view.

Our Response

SONI agree with the need and welcome the request for closer engagement with the gas industry. Recent developments including the need to reduce reliance on imported fossil fuels in light of events in Ukraine will necessitate closer collaboration between the electricity and gas industries. SONI and Mutual Energy are currently engaging to understand how decarbonisation will impact both the electricity and gas networks, and this work will inform the next publication of TESNI.

Interconnection

Armagh, Banbridge and Craigavon Borough Council

The Council notes the Network Asset Replacement Projects and Development Projects in the South East Planning Area for the next decade, including an estimated completion date of 2025 for the North South Interconnector Development. As you may be aware at a Special Meeting of Council, held on 21 September 2015, the Council opposed the project in its

current form and called on the Governments, both North and South, the Utility Regulators and the power companies, to listen to the concerns of local residents and businesses and have the project undergrounded. It is stressed that Council's position on this matter remains unchanged.

Renewable NI

RNI fully supports the development of the second North-South interconnector. While it is disappointing that the delivery date has slipped by two years since the previous estimation of Winter 2023, we are aware of the planning difficulties that the project has faced.
A substantial proportion of current constraints of renewable generation in Northern Ireland would be removed when the North-South interconnector is complete and we therefore look forward to its construction.

RNI welcomes the new target date of 2024 for completion of works to allow the full integration of the 500MW export capacity of the Moyle Interconnector. We note however that Northern Ireland has been a net importer of electricity through the Moyle Interconnector during times of constraint. We would ask SONI, through its role as SEM Operator, that it explores ways to improve intraday trading to allow the market to adequately respond in real time to constraint and curtailment events. We also request that SONI maximises any counter trading opportunities on the Moyle interconnector to reduce DD of Northern Ireland renewable generation.

RNI notes that the LirIC Interconnector Project proposed by Transmission Investment (TI) is not included within the draft TDPNI. We appreciate that this proposal is at a very early stage. RNI is concerned that the proposal to connect into Kilmarnock South, a region with high renewable generation capacity, would contribute to, rather than alleviate constraints in NI. TI have engaged with RNI and we were clear that we would need to see SONI's detailed modelling and anticipated market flows of the proposed interconnector. Only if these confirm that the LirIC will help to alleviate Dispatch Down under all foreseeable system operating configurations going forward, could we offer our support to this project.

TI LiRIC Ltd

We would make one minor observation regarding the definition of interconnector (page 12) as "The electrical link, facilities and equipment that connect the transmission network of one EU member state to another". The definition may need to be broadened reflect interconnection can be within the UK internal market as well as connecting to, or within, the EU.

Our Response

SONI is working with other TSOs in the UK and ENTSO-E to deliver the trading arrangements envisaged within the Trade and Cooperation Agreement between the UK Government and the European Union. We are aware of the importance of trade within these timeframes and have highlighted this within both our Forward Work Plan and our Shaping Our Electricity Future Roadmap.

As per SONI's connection process, studies shall be carried out to ensure that any new network additions or modifications do not result in unacceptable or unstable conditions on the Transmission System. This will be done by undertaking a number of system studies replicating the proposed development and the effect it may have on the All-Island Transmission Networks. These studies are confidential as is standard procedure as part of the connection process.

In the context of the TDPNI, SONI uses the term "Interconnection" to refer to any circuit that connects the transmission system in Northern Ireland to any other transmission system. We note that this differs from the definition in both EU law and The Trade and Cooperation Agreement and instead places this definition within the context of SONI's licensed activities.

We note the comments from Armagh, Banbridge and Craigavon Borough Council in relation to the North South Interconnector and thank the Council for engaging with us on the scheme. The North South Interconnector remains a vital project for improving the efficiency of the electricity transmission system across the island. The North South Interconnector will act as a motorway for power, enabling the efficient transport of large amounts of renewable energy across the electricity system; removing costly bottlenecks and therefore increasing

the efficiency of the single electricity market. It will support Northern Ireland's clean energy targets and will bolster security of supply. The project has achieved planning permission in both jurisdictions.

Local Development Plans

Armagh, Banbridge and Craigavon Borough Council

Please be advised that the Council is preparing its Local Development Plan – Draft Plan Strategy which will set out strategic growth for the borough for the next 15 years. To support this growth, it needs to be underpinned with the necessary infrastructure and the Council will be further engaging with SONI on this matter.

Ards and North Down Borough Council

The Council is currently formulating a Draft Plan Strategy for the Local Development Plan (LDP) which shall set out strategic growth for the Borough over a 15-year timeframe. To support this growth, it needs to be underpinned with the necessary infrastructure. The Council shall be further engaging with SONI on this matter.

Supporting the needs of residents, the local economy and protecting the environment should be key considerations in SONIs assessment of the operational needs of the electricity grid in NI to 2030. As Councils move forward with Local Development Plans, new locally distinct planning policy shall emerge. Plans will also be accompanied by reviews of landscape character areas. The document could perhaps reflect and recognise this new evolution of planning policy emerging through the LDP process with reference to the planning policy cited.

Mid Ulster District Council

While we acknowledge you have been consulted and provided comment on our Local Development Plan (2030) – Draft Plan Strategy (DPS), we wish to draw your attention to policies proposed therein which we consider are particularly relevant and should be taken into account when finalising the TDPNI. The location of transmission infrastructure should be led by the Local Development Plan for the area…

…We also wish to draw attention to designated SCA's proposed in our DPS.

Our Response

We welcome the opportunity, as a consultation body under Part 1 Section 2 (1) (g) of the Planning (Local Development Plan) Regulations (Northern Ireland) 2015, to have input into the Local Development Plans of councils throughout Northern Ireland. Councils are key partners in all of our projects and their Local Development Plans, including their appropriate policies and safeguards are taken into account at every stage of SONI's Grid Development Process.

While SONI will always examine the feasibility for different technology options, it is not always possible for high voltage transmission infrastructure to be located underground, even in urban areas, for a variety of reasons. A flexible approach in developing essential transmission grid infrastructure is required to support wider environmental, social and economic development. SONI carefully plans its routes and sites for new transmission grid infrastructure. The final route for any line is a carefully considered balance of technical, economic, planning, environmental considerations. Where it is not possible to use a certain technology, SONI will communicate this information to stakeholders, as part of its substantive reasons for the route design.

SONI's three-part process puts stakeholder and public consultation at the heart of how we develop the transmission grid. Throughout each part of the process, we will engage and consult with key stakeholders before taking the project forward. Where projects require planning submission, SONI will engage with councils and all relevant stakeholders including community and landowners, in a meaningful, robust and transparent programme of pre-application community consultation. We look forward to working together with Councils as we develop a sustainable, affordable and reliable power system for everyone in Northern Ireland, fit for 2030 and beyond.

Offshore Generation

Newry, Mourne and Down District Council

In order to contribute towards these objectives, the Council is seeking to encourage a greater use of renewable energy technology, including a greater use of technologies that have not been extensively utilised to date such as solar/photovoltaic and biomass in addition to wind energy which has been to date the primary mode of generation. The Council considers that there is significant potential for renewable energy to be sourced from within its district, as well as the potential for offshore wind energy development. The final version of SONI's 'Shaping Our Electricity Future' (November 2021) identified an area off the Mourne Coast as the optimal location for a demonstration project. However, the Council notes that there is no reference to this project in the Draft TDP, though it does accept the recognition that the list of projects is not definitive and that the Plan needs to contain sufficient flexibility. In particular, the reference to the range of scenarios that will be produced every 2 years in consultation with industry experts and other stakeholders could provide an opportunity for this project to be incorporated into the Plan at a later date. It is hoped that the offshore demonstration project and other significant RES projects will be incorporated during the Plan's life as they are initiated by operators.

Mid Ulster District Council

We welcome and acknowledge SONI's forward planning for increased electricity generation from renewable energy supply. We also note that Mid Ulster District extends into both the North and West and South-East Planning areas, with a number of projects planned within our district.

Mid Ulster District Council is concerned that the drive to ensure the reaching of the 70% target for renewable energy will focus on areas in Mid Ulster that are suited to wind energy. These areas include vulnerable landscapes such as the high Sperrins, Slieve Beagh and the shores of Lough Neagh and Lough Beg. We agree with the 70% target but are of the view that off-shore wind energy is a much more sustainable means of achieving this.

In Mid Ulster, there are a large number of approvals for wind energy. In investing in ways of integrating this generation capability into the grid, it is important to think of ways in which local communities can benefit, particularly those communities who may be experiencing supply difficulties.

Our response

We expect that offshore wind will play a crucial role in meeting decarbonisation targets set out in the Northern Ireland Energy Strategy. However, being a generation connection, an offshore generator would not appear in TDPNI as an explicit project. Rather, any offshore generator would form part of the overall generation portfolio that we use to assess the capability of the transmission network. Any needs arising from that assessment will help inform where we require new network projects.

Network analysis carried out in Tomorrows Energy Scenarios Northern Ireland System Need Assessment[9] formed part of the assessment process for transmission projects included in this TDPNI. It should be noted that two of the scenarios considered in that analysis included offshore wind generation by 2030.

In Shaping Our Electricity Future, we consulted on a number of approaches for delivering an (at the time anticipated) target of 70% RES-E in Northern Ireland by 2030. All of the approaches included at least 350 MW of offshore wind in Northern Ireland. A significant number of consultation responses stressed that offshore wind generation was unlikely to develop at scale in Northern Ireland by 2030 and so for the final roadmap we reduced the offshore wind capacity in Northern Ireland, with an expectation that offshore wind would subsequently develop further beyond 2030. We assumed it developed off the east coast of Northern Ireland, as this site was previously identified as being suitable for offshore wind development[10].

We are aware that in 2022, two offshore wind developers have announced their intentions to develop offshore wind projects for Northern Ireland, both of which are proposed to use floating platform technology and can therefore potentially be located in areas not previously identified as suitable for offshore wind. We will be updating Shaping Our Electricity Future this year, incorporating updated assumptions on generation and demand,

[9] https://www.soni.ltd.uk/media/documents/TESNI-SNA-2020.pdf

[10] https://www.economy-ni.gov.uk/sites/default/files/publications/deti/RLG%20Final%20Version%20Sept%202011.PDF

including assumptions regarding offshore generation. We will also be updating future iterations of Tomorrow's Energy Scenarios Northern Ireland accordingly.

In addition, SONI is supporting the NI Energy Strategy Action plan for 2022 which includes the development an action plan to deliver 1GW of offshore wind from 2030.[11]

SONI Resourcing

Renewable NI

RNI appreciates that to deliver development of the transmission system at a pace needed to meet the 80 by 30 target, that SONI must be sufficiently resourced. We are concerned that SONI do not currently have sufficient resources to complete the required modelling studies and provide the timely connection offers and studies needed to meet the very pressing timescales for the noted transmission system upgrades and new connections. NIE Networks Networks for Net Zero study shows that the due to downward pressure increased renewable generation has on the wholesale price of electricity, that there will be a net consumer saving of 1% after taking account of all the necessary grid investments. RNI's Achieving Zero study estimates that going from 70% to 80% will result in an additional consumer saving of £50m.

It is important that the Utility Regulator (UR) recognises that the investments needed to incorporate a greater penetration will save the consumer money. RNI is concerned that the UR takes a narrow view of network costs when in reality the earlier we can make these investments, the better the return will be for the consumer. RNI is keen to work with SONI to help make this case. RNI notes the commitment in SOEF to the establishment of an Advisory Council, this is something that we would be keen to see progress and will happily contribute to.

Our Response

[11] https://www.economy-ni.gov.uk/sites/default/files/publications/economy/energy-strategy-path-to-net-zero-action-plan.pdf

SONI acknowledges that the programme of network development described in the TDPNI will be very challenging for SONI and welcome that this is recognised by key stakeholders. The network development portion of our price control submission to the Utility Regulator for the period 2020- 2025 was based on the TDPNI 2019-2028, and we believe that our submission makes provision for the resources we will need to deliver on the Plan.

SONI considers the full suite of benefits and impacts of projects when selecting the option to bring forward for funding approval along with the timing required for delivery[12]. We prioritise projects to ensure that needs are addressed at the appropriate time, in line with our duties to develop the system in an efficient, economic and coordinated manner. To date the UR has not asked SONI to defer any investment, instead all projects that have a valid case of need have been progressed through the subsequent stages.

Project Timelines

Renewable NI

RNI notes that the draft TDPNI indicates that 11 new transmission development projects have been added and 2 existing projects have been cancelled. Whilst this may be positive, the pace with which the projects are being developed and progressed to completion appears to be stationary, if not slowing down…

…We recognise that there can be inevitable delays to projects e.g. relating to planning, but we would urge that every effort be made to avoid delays to projects and we would suggest that clear reasons be given to every project that is being delayed in future. The delays in the Mid-Antrim Upgrade, North West of NI 110 kV reinforcement and North-South Interconnector are beginning to impact quite heavily on the forecast grid constraints, and consequently on the viability of renewable energy projects.

Appendix 3 details the timeline to date of the Mid Antrim Upgrade. This vital improvement has been continually delayed without a clear explanation as to why this has been the case. With only eight years to deliver against the new 80% target we need to see an urgency in

[12] https://www.soni.ltd.uk/media/documents/Mid-Antrim-Upgrade-Preliminary-Preferred-Options-Report.pdf

developing the grid. RNI is consistently including transmission infrastructure in its calls for a streamlined planning process for green infrastructure projects.

DW Consultancy

Whilst the Draft TDPNI improves on the delivery date of some work items, e.g. the North West Voltage Support, the Coolkeeragh - Killymallaght - Strabane 110kV Uprate, Part 1 of the Castlereagh – Hannahstown 110kV Reinforcement, & the Tamnamore – Drumnakelly 110kV uprate, all of which have improved estimated completion dates, it is somewhat disappointing to see so many work items with revised estimated completion dates many slipping by 2 to 4 years since the last iteration of the TDPNI…

*…As an example, we have seen the **Omagh Main – Dromore Third Circuit** which is described by SONI as being required for 'security of supply and RES integration' but the draft TDPNI now revises the estimated completion date from 2029 to 2031 due to 'reprioritisation of projects'. This seems counter intuitive in the face of the need for accelerated ambition.*

SONI has and continues to deliver an unparalleled system in terms of renewable integration, and the ambition and understanding of the TESNI 2020 and SOEF reports are very laudable. However, we believe that this ambition and desire to decarbonise must be better reflected within the TDPNI.

Our response

We agree with both respondents that the programme of network development described in the TDPNI will be challenging for both SONI and NIE Networks and welcome that this is recognised by key stakeholders.

The delays to projects are due to multiple reasons including re-prioritisation, planning, updated project assumptions and outage availability. SONI and NIE Networks are working in collaboration to review the Transmission Interface Agreement with a view to streamlining the process where practical.

Many of the projects with the larger scopes, for example the Mid-Antrim Upgrade, are delayed due to updated project assumptions, as these projects would have originally had multiple possible options for the works that would meet the transmission system need. With regards to the Omagh Main – Dromore Third Circuit project, it is anticipated that this project may be necessary but a definitive project need has not yet been confirmed. The needs for this third circuit may be addressed through the North-West and Mid-Tyrone Large-Scale Reinforcement project. Therefore, the Omagh Main – Dromore Third Circuit project may become a lower priority but we are currently assessing this.

Shaping Our Electricity Future

Renewable NI

RNI's Achieving Zero report provides a pathway for zero carbon power and concludes that the technologies needed to achieve this are known to us today. RNI contends that SONI must ultimately plan for zero carbon power and working backwards from this, and therefore should recognise that 2030 is only a staging post and not the end goal…

…RNI is keen to work in partnership with SONI to ensure that the planning and regulatory systems are favourable to renewable developments and decarbonisation of our electricity system.

We note that the TDPNI includes only projects that have received capital approval. It would be useful to include reference to those more strategic plans such as the projects at concept stage (e.g. those identified in SOEF). These are suggested to be pre-2030 projects, yet even those projects with approvals are experiencing delays to 2030. A more complete list would be welcomed and help manage expectations more appropriately.

DW Consultancy

Our query is whether the planned network developments detailed within the current DRAFT TDPNI achieve the 70% or 80% RES-E target by 2030. If it is the former, then can the final TDPNI be amended to consider what additional developments would be required to achieve the 80% target?

We further understand that EirGrid are currently working on amending their work to adjust the RoI target from 70% to 80% by 2030 and would ask that SONI also seek to amend the Shaping our Electricity Future in the coming year to recognise this improved and accelerated target set by the NI Assembly.

Mutual Energy

Due to the timing of its publication, the draft TDPNI is likely to have been substantially developed in the absence of the NI Energy Strategy and therefore may require revision to take account of recent energy policy decisions e.g. commitments on offshore wind from 2030, development of the hydrogen economy, etc. The draft TDPNI is also based on projects considered critical for delivery of a 70% electricity consumption from renewable sources ("RES-E") by 2030 target in Northern Ireland. While consistent with the NI Energy Strategy, the recent Climate Change (No. 2) Bill approved by the NI Assembly (after the publication of the draft TDPNI) has increased this target to at least 80% by 2030. As a general comment, Mutual Energy therefore believe it is necessary to review the draft TDPNI in light of these and other relevant changes in energy policy.

Our Response

The TDPNI is a ten-year development plan. Its scope only covers the projects for the next ten years and as defined in our license. The TDPNI does not only include projects that have achieved capital approval. The TDPNI consists of projects that are between stage 1 – 3 of the 3-stage grid development process. Only projects at stage 3 have capital approval allocated to them.

The TDPNI presents projects that are expected to meet the operational needs of the transmission network. Once the next versions of the Transmission Investment Plan (TIP) and Tomorrows Energy Scenarios Northern Ireland (TESNI) have been compiled to show the projects necessary to reach a review, the necessary iteration of TDPNI will then be updated accordingly.

The TDPNI 2021-2030 was compiled based on assumed Energy Strategy targets. Future versions of TDPNI (2022 onwards) will be reviewed and assessed in accordance with the Energy Strategy.

Ballykelly Network Capacity

MJM Renewables

We would recommend that SONI seek to increase capacity on the network in the Ballykelly/Limavady area to allow renewable energy to be exported to the grid.

Our Response

SONI welcomes the response from MJM Renewables and their intentions to transform the former Shackleton site into a renewable energy park. A number of projects in the TDPNI 2021-2030 outline increases that SONI is intending to make to the network capacity of the Ballykelly/Limavady area to allow further integration of renewable energy sources to the grid.

DTNI

Derry City and Strabane District Council

Rising living costs and global drivers on energy provision are a particular concern for council. Council would urge SONI to use the DTNI to help mitigate any risks associated with the security and affordability of energy supply.

Our Response

SONI will always consider costs as part of their assessment of the need and options for each project. We only bring forward investments where there are confirmed needs and will re-check these needs at a number of checkpoints through the development process to ensure that any changes that render a project unnecessary or uneconomic are caught before they

progress to the next stage. SONI strives to undertake this work as transparently as possible and examples of these assessments can be found[13] on the SONI website.

Environmental Impact

Derry City and Strabane District Council

Council would seek assurance that any development is carefully planned and in accordance with the rights of nature ensuring that developments protect our rich biodiversity, mitigate climate change impacts, reduce noise, protect our rich landscape and cultural heritage, water and air quality and improve our tourism offering.

Our Response

Environmental considerations are integrated into the SONI grid development at both the plan (strategic environmental assessment) and project level (environmental impact assessment).

A SEA is prepared in respect of the transmission development plan. The purpose of the SEA is to ensure that environmental considerations are integrated into the development plan and that to anticipate and avoid, where possible, potential adverse environmental impacts arising from the TDPNI. The SEA has a five year lifespan, with review and drafting processes for the next SEA beginning in the final year. A SEA was carried out on in 2018. However, as the preparation of a TDPNI is an annual rolling process, each TDPNI prepared is accompanied by an Environmental Appraisal Report (EAR) which assesses the plan against the provisions of the adopted SEA statement. This process ensures consistency of approach in environmental issues of each TDPNI across the lifespan of the SEA. SONI are due to commence a new SEA in the coming year.

All SONI projects are subject to a comprehensive and consistent Grid Development Process which includes provision for multi criteria analysis (MCA). This ensure a balanced

[13] https://www.soni.ltd.uk/media/documents/Mid-Antrim-Upgrade-Needs-Report.pdf

consideration of the technical, economic, environmental and deliverability aspects of a development project. SONI also considers the requirements for Environmental Impact Assessment (EIA) and Appropriate Assessment (AA) as part of the grid development process to ensure all topics such as biodiversity, climate change, noise, landscape, cultural heritage, water, air and tourism among others are fully considered.

Abbreviations

ATR	Associated Transmission Reinforcement
DSO	Distribution System Operator
EC	European Commission
FAQ	Firm Access Quantity
SONI	System Operator Northern Ireland
TAO	Transmission Asset Owner
TDPNI	Transmission Development Plan Northern Ireland
TIA	Transmission Interface Arrangements
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 line and busbar upratings, new stations and new lines.
EirGrid	The Transmission System Operator in the Republic of Ireland.
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 up or down, it is eligible for compensation in the manner set out in the Trading and Settlement code.
NIE Networks	Northern Ireland Electricity Networks, the Transmission Asset Owner, Distribution Asset Owner and Distribution System Operator in Northern Ireland.