



SMART GRID IRELAND RESPONSE

TO

***SONI DRAFT TRANSMISSION ***
DEVELOPMENT PLAN
NORTHERN IRELAND
2020-2029



SGI Secretariat
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CONTENTS

Para	Page
1.0 Introduction	3
2.0 Smart Grid Ireland “Some Guiding Principles	3
2.1 Other General Considerations	4
3.0 Integrated Approach to Transmission & Sustainable Development	5
3.1 Energy Efficiency	6
3.2 Economic Development Considerations	6
3.3 Community Clusters	7
4.0 Additional Areas for Consideration	8

1.0 Introduction:

SGL welcomes the opportunity to comment on this draft Plan. SGL welcomes the existence of this Draft Plan 2020-2029 and the work which has gone into preparing it. SGL welcomes the new way of developing the grid through “Tomorrow’s Energy Scenarios Northern Ireland” SGL notes that the Draft Plan references the Strategic Energy Framework 2010, which expires this year, and that it states that nothing is currently in place beyond this date.

We are aware of, and are contributing towards, the development of a new Strategy. We would encourage all concerned to progress this work with all possible speed. We realise this plan will be promulgated before the finalized NI Energy Strategy which is not due to be published until Nov 2021 which means the TDPNI could well need substantial change

2.0 Smart Grid Ireland “Some Guiding Principles - setting a context for our response:

1. Transmission policies and programmes should promote innovative and flexible solutions to meet changing customer needs and maintain and enhance system reliability, security, resilience, and efficiency.
2. The future electric transmission grid should remain flexible and should continue to support key capabilities, such as enabling customer choice; integrating clean utility-scale and distributed energy resources; enhancing decision-making by customers, NIE, and other key stakeholders; and improving overall electric system safety, reliability, security, resilience, efficiency, sustainability, and affordability. Given these guiding principles we would add in reference to the overarching responsibility to produce a plan that directly supports the journey towards a zero carbon Northern Ireland
3. Changes to the transmission system needs to be supported by business model, rate structure, and regulatory reforms that enable utilities and third-party providers to offer services and to compete to ensure the safest, most reliable, resilient, and secure grid to meet consumer demands.
4. As the grid is modernized, it should be optimized to maintain and enhance system reliability, resilience, security, and more, and should meet changing consumer demands. Utilities in both jurisdictions can achieve such ends by employing varying business models and regulatory strategies.
5. A modernized transmission grid should create or enhance value by increasing its functionality, expanding and maximizing the benefits realized, and making this

critical platform available to customers, service providers, and market participants to pursue their individual and collective goals.

6. Workforce development activities are necessary to meet the needs of a rapidly-changing electric grid and while this is primarily a focus area for NIE Networks, it is important to support and promote public and private partnership efforts pertaining to academic institutional, apprenticeship and other educational programmes to train and develop a skilled existing and future workforce that is sufficiently flexible to address the needs of the changing electric system and respond to extreme events.
7. *Consumer focus:* Local planning efforts should ensure at the front end as well as throughout relevant processes that grid modernization infrastructure measures account for consumers' needs and desires to manage their electricity usage and choices, to the extent feasible and appropriate. We envisage that the scope of the Regulators mandates will be enhanced and therefore SONI's role as active players should be incorporated in supporting investments that facilitate green economy growth. Smart Grid Ireland will be supporting an expansion of the regulator's powers

2.1 Other General Considerations

The integration of the Draft Transmission Development Plan for the next ten years incorporating the key grid-related infrastructure elements will be arranged through close co-operation between SONI and NIE Networks. These arrangements are essential to satisfactory implementation of the plan and should include as appropriate the following:

1. Cross-sectoral approaches to addressing critical infrastructure sectors;
2. Infrastructure planning;
3. Grid resilience;
4. Cybersecurity and physical security;
5. Transmission and distribution systems;
6. Electrification;
7. Telecommunications – spectrum and broadband issues;
8. Data and data privacy; and,
9. Other grid modernization provisions: Grid architecture, scenario modeling and analysis, voluntary model pathways, performance metrics, and technical assistance and training.

There is also the need to ensure deliverability of the plan, in terms of resources, system limitations (e.g. outages to complete the work), the approval process (planning permission and UR funding) and design. The timescale for delivering many of the projects have slipped since the previous plan. Both SONI and NIE Networks should be accountable for delivering the plan, with key milestones set out for each project to get through the various stages to completion.

The plan is very ambitious in terms of what has to be delivered over the next 10 years but there is very little progress on actual delivery and very few projects are at the construction stage. SONI should be given more resources, if needed, to get the delivery of this plan moving urgently, otherwise Northern Ireland will not meet the target of at least 70% renewable electricity by 2030.

In section 5.1.3 “Integrating Renewables” it is stated that “Significant challenges will arise in extending and reinforcing the network to connect new RES”. SGI believes that there should be some statement of intent to achieve same.

There are many asset replacement projects referenced which are due to be completed by 2024. SGI has some concern that these all fall due in the same period of time, and that this may cause resource constraint limitations and potential short-term lowering of security of supply parameters. We would support any representation to the Utility Regulator for allowing extra resources to be applied to this work.

SGI notes with concern that, on page 94, no preferred option has yet been selected for the East Tyrone Reinforcement Project and urges that this work gets priority. SGI welcomes the recent planning approval for the second North/South Interconnector project portion in Northern Ireland and the SONI response to this, with a winter 2023 completion date stated in section 7.4.6. The plan references the North South interconnector being commissioned by 2023. SGI would question if this is realistic? The Moyle 275 kV reinforcement work is now urgent. SGI welcomes the reprioritisation of this work and the bringing forward of the completion date from 2028 to 2024.

5

Smart Grid Ireland welcomes the direction of SONI in changing the way it develops the grid through the production of “Tomorrow’s Energy Scenarios Northern Ireland” (TESNI), a new approach which involves developing a range of possible energy scenarios dealing with renewables and the electrification of heat and transport etc. However, we would add our views on realizing this opportunity and enabling and protecting energy consumers. We suggest three areas for consideration in the context of refining the plan.

3.0 Integrated approach to Transmission and Sustainable Development

The strengthening of the Electricity grid by connecting multiple green energy projects and technology innovations for managing electricity from renewables schemes. The Transmission Development Plan has the opportunity to make a significant contribution to Northern Ireland meeting the 70% renewable target by 2030 and net zero carbon by 2050 providing a strong, resilient and flexible transmission grid.

We believe that it is essential that the SONI TDPNI articulate an accelerated ambition with a pragmatic pathway of how the Northern Ireland Transmission network can evolve in such a way that guarantees the security and the quality of electricity supply while supporting the critical electricity transmission-related Sustainable Development Goals. Starting with outcomes and working back to what would be needed to deliver these goals in a realistic and cost-effective way from recovery from Covid-19. The investments during

the 2020-2029 period should be aligned to a Northern Ireland sustainable recovery plan and policies and the NIE Strategic Network development plan for Northern Ireland.

3.1 *Energy Efficiency*

In articulating phased investment it may be worth considering the amount of resources being dedicated to energy efficiency as an indicator when appraising the level of investment targeted and spread across different sectors and regions. There are also the behaviour changes sparked by the pandemic – such as more teleworking, more walking and cycling, and fewer long-haul business trips affecting energy intensity. Energy efficiency plays an essential role in accelerating clean energy transitions towards achieving the regional climate goals

3.2 *Economic Development Considerations*

While we recognize that SONI's work is not limited to supporting economic benefit for Northern Ireland and that the environment and our society are at the heart of what SONI seeks to achieve. The TDPNI should seek to articulate SONI's environmental objectives for society as a whole in delivering a clean energy system in response to the climate crisis. However, SONI is also responsible for delivering a competitive energy supply and ensuring long-term sustainability of the electricity supply. The impact of the Covid-19 pandemic has decimated some industries facing significant job cuts and revenue losses with some of these expected to be long-term and in some cases transformative in the emergence of new business replacing the old to new digitally enabled businesses or for existing infrastructures pivoting from old dependencies towards new enabling technologies and markets.

Smart Grid Ireland would suggest a sectoral impact assessment be carried out across industry that may show a significant drop in electricity demand from current retail establishments, hospitality and Tourism, arts and heritage, maritime industries, ferries and cruise ships and sport. The automotive industries are also going through a major transformation towards volume production of electric transportation by 2030. To support this major upgrade in transportation reinforcement of the LV and MV transmission system will be needed as well as the grid. At the same time while some vehicles may be charged using domestic generated renewable energy thus requiring a balanced view on the level of investment. As self-generation and usage grows in domestic housing there will also be a shift in demand cycles with less investment needed for an expensive retrofitting of older buildings.

It is clear that if the Transmission Development Plan addresses the critical infrastructure sectors to promote a holistic, integrative, and cross-sectoral approach to transmission (along the lines of “Smart Cities”) such as the upgrading parts of the grid in the Belfast Metropolitan area so that it can support long-term economic growth in the city centre, that is to be welcomed.

Such an approach should include: relevant “smart” technologies, as well as data analytics, cyber security. Digitalization and communications are vital components of such an approach. Cross-sectoral approaches (or interconnectedness of various critical infrastructure sectors) include:

- the nexus between transmission, communications, and information technology (IT);
- between renewable energy and water;
- the growing nexus and interdependencies between transportation electrification, district heating, storage, renewable energy, communications, and IT

It has been recognized for some time now that there is a need to strengthen the grid in the North West as a key area for upgrade investment and we note this is included in the plan. The grid will need to be strengthened to support economic development and to facilitate decarbonisation of Northern Ireland’s electricity supply as does the mid-to-north area of County Antrim to increase the flow of electricity from renewable sources as these develop over time.

3.3 Community Clusters

While community clustering is primarily the responsibility of NIE, we would suggest that the new TDPNI could enhance its plan by promoting of new and smarter ways of generating and using renewable energy technologies while protecting those who are not able or willing to embrace the future energy system or changes.

7

In alignment with energy policy SONI may wish to identify the most cost-effective pathways for consumer groups ranging from affordability, usage types (ie: heat & light) as this would strengthen investment proposals. An emerging area of interest is that of community microgrids which Smart Grid Ireland expects to promote over the next five to ten years and this would change the operational relationship between those communities and with NIE & SONI and an intermittent interface with the grid.

The System Operator (TSO) has a key role in the electricity system. We recognize the responsibility of the TSO is to manage and operate the systems that access the power grid and monitor and operate current converters while at the same time controlling the flow of electricity through transmission lines and monitor circuits etc., the System operators role needs to evolve, to ensure it is well placed to both respond to and help facilitate the transformation of the electricity system over the coming decades. This would be in the interest of consumers and underpin competitive economic growth.

4.0 Additional Areas for Consideration

Smart Grid Ireland would encourage SONI to adopt or promote the Accelerated Future Energy Scenario recognising that this is policy dependent but if Northern Ireland is to make rapid progress then all stakeholders need to be proactive. See extract from Tomorrows Energy Scenario NI 1.6.4 & 3.1

4.1 Accelerated Ambition

- 80% of electricity from renewables by 2030
- Modest economic growth over the next decade, increasing towards the end of the period
- A ban on new petrol and diesel cars by 2032
- Adoption of Future Homes Standard to new homes and existing properties from 2025
- Achieves UK net zero emissions reduction contribution for NI set out by the CCC by 2040

Accelerated Ambition anticipates a requirement to meet decarbonisation targets earlier than 2050. In this scenario, a very ambitious target of 80% RES-E by 2030 is met primarily through continued development of onshore wind and a large increase in solar generation. This includes a significant uptake by consumers through the use of rooftop PV, due to favourable economic conditions. Strong government support for offshore development sees both wind and marine technology in place by 2030, and this continues to develop in subsequent years. Decarbonisation of heat and transport is vital to minimise emissions.

In Accelerated Ambition the government brings forward a ban on new petrol and diesel cars to 2032. As in Addressing Climate Change, price parity between electric vehicles and petrol and diesel cars is achieved by 2025. These factors, along with improved economic conditions, drive a significant uptake in electric vehicles from 2025.

Electrification of heating happens earlier and faster than in the other scenarios, as proposed requirements for new builds in the Future Homes Standard are also adopted for existing buildings from 2025, with policy and financial support from the government.

We would also reference the future impact of offshore wind (which SONI support through membership of ENTSO-E)