SONI Forward Work Plan 2024-25

Appendix 3
System Planning

Northern Ireland
September 2024

SONI Deliverables 2024-25 Role 3 System Planning

The SONI Forward Work Plan provides details on the various projects and programmes of work that will be undertaken over the period from October 2024 to September 2025. This appendix provides further detail on those deliverables for Role 3 System Planning and should be read in conjunction with the main document..

The SONI three-part Grid Development Process is the approach SONI takes to the programme of work associated with System Planning. For this plan we have included the projects associated with Part 1, Part 2, and Part 3.

Part 1 involves identifying the optimum solution and what area may be affected. This includes appraisal of the options, the preparation of an environmental report and Part 1 Stakeholder Engagement. Once complete the TNPP funding request can be prepared and submitted to the UR for approval.

Part 2 of the Grid Development Process commences, following the approval of funding, with identifying an outline design, engaging with stakeholders, and identifying where the project will be built. This includes all appropriate work in the approach to making a planning application submission.

Part 3 is the part of the process where SONI submits and supports a planning application leading to project handover to NIE Networks.

The number of projects is expected to increase significantly in the coming years.

System Planning plays an integral role in the preparation and publication of the Transmission Development Plan for Northern Ireland (TDPNI). The system development projects detailed in the TDPNI are progressed by SONI in collaboration with NIE Networks as Transmission Owner. The asset replacement projects are progressed by NIE Networks.

SONI has detailed a number of the projects within Role 3 up to the project handover to NIE Networks for construction, commissioning and energisation, which are provided in the TDPNI. Details of our Part 1 or Part 2 engagement activities for the projects are described in our Powering the Future: SONIs Grid Development Process brochure.

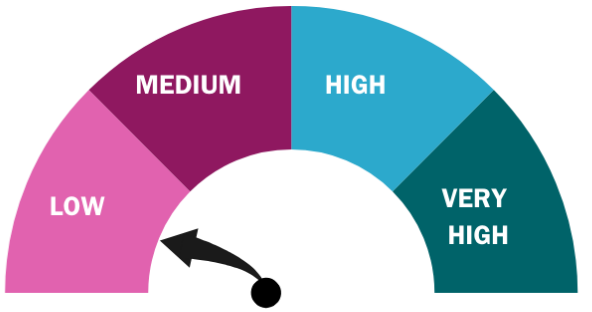
Cost Scale

SONI have created a Cost Scale in order to assist the audience in understanding the scale and/or importance of a project, and detailed where on this scale each project lies. The costs indicated are SONI related costs and do not cover any costs accrued by any stakeholder SONI may be collaborating with on said project.

This scale applied is detailed in the table below, the gauge icon will be used in the detailed project information for each deliverable.

LOW	£0-£500K
MEDIUM	£500K-£1M
HIGH	£1M-£5M
VERY HIGH	£5M+

Cost Scale Table



Cost Scale Gauge

Project Overview

Further details about these projects and their associated deliverables are provided after the deliverables summary below.

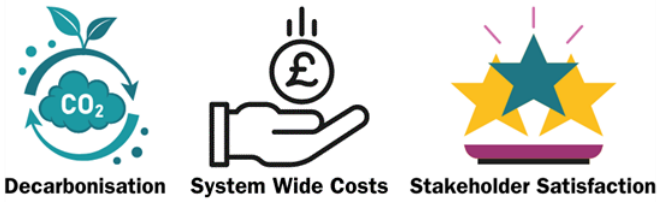
Project	Milestone	Timescale	Performance Measure	Project Carried forward
FWP25-04: Transmission Clusters policy	Develop approach with NIEN and industry and issue for consultation	December 2024	Issuance of Transmission Clusters consultation	No
FWP25-05: **Limavady TNPP**	TNPP Submission	October 2024	TNPP submitted to UR	No
FWP25-06: **Transmission nodes at/ reaching capacity**	1. Complete review of obligations and identify solutions 2. Stakeholder engagement with NIEN/UR & industry on way forward	November 2024 February 2025	Timely engagement with stakeholders to discuss way forward after review and Identification of solutions.	No
FWP25-07: FAQ methodology	Publication of Consultation paper.	March 2025	Timely publication of paper	No
FWP 25-08: Joint SONI-NIEN Project Management Office	Development of joint multi-year delivery programme	June 2025	Delivery programme communicated externally	No
FWP027: Energising Belfast: Castlereagh—Hannahstown	1. Secure options to purchase two sites for substation developments 2. SONI to issue TPI to NIEN for the post connection works	March 2025 July 2025	1. Secure options to purchase substation developments 2. TPI issued to NIEN	Yes
FWP25-08: Airport Road Main 110/33 kV Substation	**Currently in Part 3** 1. Secure legal agreements for substation site acquisition 2. SONI issues Transmission Project Instruction to NIE	October 2024 December 2024	Landowner Agreement secured Transmission Project Instruction issued to NIE Networks	Yes
FWP026: North South 400kV Interconnector	1. Issue Transmission Project Instruction 2. SONI will enter into a Transmission Project Agreement with NIEN	OCtober 2024 November 2024	Transmission Project Instruction Issued	Yes

Detailed Programme of Deliverables

Role 3

Transmissions Clusters Policy

FWP25-04: Transmission Clusters Policy	
Description of Activities	A significant number of transmission-scale renewable generators are expected to seek connections in the coming years to support the transition to a Net Zero energy system. The current connection process does not facilitate synergies between projects through a clustering approach, nor does it allow for the anticipatory delivery of connection infrastructure. This can result in high connection costs for developers, as well as inefficiencies and uncertainties in system development, potentially hindering the achievement of energy strategy targets. In collaboration with NIE Networks and the industry, SONI will develop a policy to enable the efficient anticipatory development of new infrastructure for generation connections. After conducting workshops with NIE Networks, industry stakeholders and engaging with the Utility Regulator, OSNI will consult on the policy and any necessary changes to SONI's Connections Policy and Transmission Connections Charging and Methodology Statement.
Key Benefits	The key benefits of this project are detailed below: ❑ **Faster connection times**: By ensuring infrastructure is delivered as promptly as possible, the project accelerates the connection process for new renewable generators. This will reduce delays in bringing new generation capacity online, supporting the transition to a Net Zero energy system. ❑ **Cost Efficiency**: Miniminsing the total cost of network reinforcement will help reduce the financial burden on developers and consumers. This will encourage more investment in renewable energy projects by lowering overall projects costs, making it more attractive to developers.

	❑ **Improved Grid Reliability:** Providing infrastructure with a high degree of firm access ensures that connected generators have a more reliable and secure connection to the grid. This improves grid stability and helps to balance supply and demand; particularly as more intermittent renewable energy sources are added to the system.
UR Strategic/ Service Priorities	**A culture of effective engagement and collaboration and whole system collaboration and coordination with 3rd parties, and NIE Networks across its various roles as a TO, DNO and DSO.** SONI is actively working with NIE Networks across its roles to address the challenges associated with the Transmission Clusters Policy. This project will involve industry stakeholders, and engaging with the Utility Regulator. Through these collaborative efforts, SONI aims to consult on the necessary policy changes and updates to SONI's Connections Policy and Transmission Connections Charging and Methodology Statement. This approach will ensure effective engagement and coordination, aligning with the objective to streamline system development and support the delivery of energy strategy targets.
Engagement	SONI will engage with NIE Networks in the development of the policy ahead of publication of the policy for industry consultation.
Performance Measure	Issuance of Transmission Clusters consultation
Timescale	December 2024
Cost Scale	
SONI Outcome	

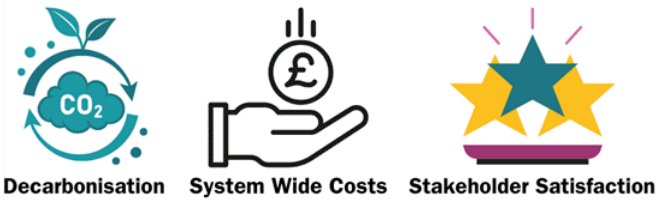
Limavady TNPP

FWP25-05: Limavady TNPP	
Description of Activities	Limavady substation has no available bays. SONI has received a connection application at Limavady which requires a substation extension, which is chargeable to the customer. Additional non chargeable reinforcement is also required. There is also a need to replace the 110/33 kV transformers at Limavady to create more capacity for distribution connections. This project is to extend Limavady Main substation in conjunction with the connection works to enable the further reinforcements required.
Key Benefits	The key benefits related to this project are listed below. ❑ **Increased security of supply:** Upgrading Limavady Main will enhance the reliability of electricity supply to the area reducing the risk of outages and disruptions ❑ **Increased capacity for distribution connections:** The upgraded Limavady main will accommodate a larger number of distribution connections, enabling future growth and development in the area ❑ **Preparation for future infrastructure:** This project will lay the groundwork for future infrastructure development by providing a robust network for connecting new facilities and services.
UR Strategic/ Service Priorities	**A culture of effective engagement and collaboration** SONI are actively engaged in working with NIE Networks and other stakeholders in order to take all views into consideration. SONI's activities across Role 3 are consistently aligned with working with partners (NIE Networks for instance) for positive change and working towards achieving our targets with regards to the NI Energy Strategy as well as enhancing the transmission system, ensuring it is a key enabler for facilitating future renewable generation.
Engagement	This project will see ongoing engagement with both NIE Networks and the customers whose project is directly impacted by these works. This project has limited geographic
Performance Measure	TNPP submitted to UR

Timescale	October 2024
Cost Scale	
SONI Outcome	 **Decarbonisation**  **Grid Security**

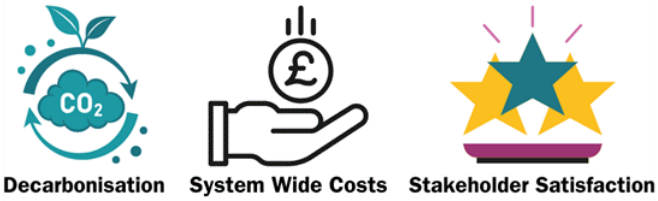
Transmission nodes at reaching/capacity

FWP25-06: Transmission nodes at reaching/capacity	
Description of Activities	Currently a number of 110kB Bulk Supply Points (BSPs) are operating at or nearing their N-1 capacity for generation. This poses a significant challenge to the integration of new generation, especially SSG uncontrollable generation, at these nodes. This bottleneck is primarily linked to the capacity limitation of the 110/33KV transformers and radial circuits in place. To address this issue, a collaborative effort is underway with NIE Networks to pinpoint areas where additional capacity is warranted at BSPs. The goal is to assess the existing infrastructure, identify potential capacity constraints and propose viable options to enhance capacity. Subsequently, a detailed cost analysis will be conducted to evaluate the financial implication of implementing capacity enhancement solutions. **Deliverables**: 1. Complete review of obligations and identify solutions 2. Stakeholder engagement with NIEN/UR & industry on way forward
Key Benefits	The key benefits for this deliverable are listed below. ❑ **Improved Connection Opportunities**: By addressing capacity issues, the plan will enhance the ability of nodes to connect, which can expand the networks reach and efficiency. ❑ **Increased Clarity for Prospective Customers**: SONI believe customers will have a clearer understanding of the available solutions, which helps in making informed decisions. ❑ **Better Network Planning:** The plan will outline viable solutions and timescales aiding in more effective network management and forecasting.
UR Strategic/ Service Priorities	**A culture of effective engagement and collaboration** **Whole system collaboration and coordination with 3rd parties, and NIE Networks across its various roles as a TO, DNO and DSO** **Collaborating and coordinating to promote a holistic, customer-based service approach to digitalisation.** SONI is working closely with NIE Networks to address capacity issues as BSPS. This collaborative effort involves assessing the existing infrastructure, identifying potential capacity constraints, and proposing solutions to enhance capacity. This approach ensures thorough evaluation and coordinated planning, fostering effective collaboration between SONI and NIE Networks

Engagement	SONI will maintain ongoing engagement with NIE Networks and their impacted customers as necessary. Once all viable options have been assessed and analysed for cost benefits, they will be submitted to the Utility Regulator for funding consideration. Following this, SONI and NIE Networks will continue to engage with affected customers to discuss the outcomes and outline the next steps
Performance Measure	Timely engagement with stakeholders to discuss way forward after review and Identification of solutions.
Timescale	❑ Complete review of obligations and identify solutions – **November 2024** ❑ Stakeholder engagement with NIEN/UR & industry on way forward – **February 2025**
Cost Scale	
SONI Outcome	

Firm Access Quantity (FAQ) Methodology

FWP25-07: Firm Access Quantity (FAQ) methodology	
Description of Activities	The Firm Access Quantity (FAQ) methodology is currently based on the 2013 decision paper; however it requires updating to reflect changes in legislation and technology mix. The new methodology needs to incorporate more realistic dispatches, consider a broader technology mix, including PV and battery storage, and assess how different technologies interact. The FAQ methodology review will address these updates while evaluating their impact on both encouraging investment in generations and protecting consumers from high constraint costs. This update requires both software and methodology/policy redesign. The goal is to develop a new firm access policy and methodology that better aligns with current policies and technologies, accurately reflecting the modern power system. Additionally, this work will provide greater clarity for large-scale generation projects regarding their pathways and timelines to achieve full access. Effective engagement, collaboration, and co-ordination with third parties and NIE Networks, in their roles as Transmission Operator, Distribution Network Operator and Distribution System Operator, are essential for this process.
Key Benefits	The key benefits for this deliverable are detailed below. ❑ **Updated Policy and Methodology:** The new policy will reflect current policies and technologies, ensuring it is aligned with the modern power system ❑ **Enhanced Clarity:** Large-scale generation projects will gain clearer insights into their pathways and timelines for achieving full access, improving planning and decision making
UR Strategic/ Service Priorities	**A culture of effective engagement and collaboration and whole system collaboration and coordination with 3rd parties, and NIE Networks across its various roles as a TO, DNO and DSO** Reviewing the FAQ Methodology fosters open and transparent communication between stakeholders, which will allow for the exchange of ideas and information. This will facilitate ongoing collaboration with stakeholders. SONI are committed to whole system collaboration and coordination and by updating the methodology to incorporate a wider range of technologies we are reflecting the evolving nature of the electricity system in Northern Ireland. The revised methodology will take in to account the interactions

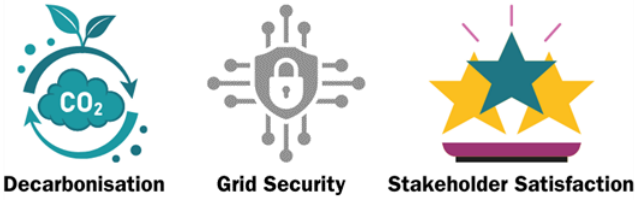
Engagement	SONI have been actively engaging with Renewables NI on this issue. Engagement will include pre-consultation workshops with industry and regulators, the development of a consultation paper, consultation workshops, and the creation of a decision paper based on the feedback received.
Performance Measure	Timely publication of paper
Timescale	March 2025
Cost Scale	
SONI Outcome	

Joint SONI-NIEN Project Management Office

FWP 25-08: Joint SONI-NIEN Project Management Office	

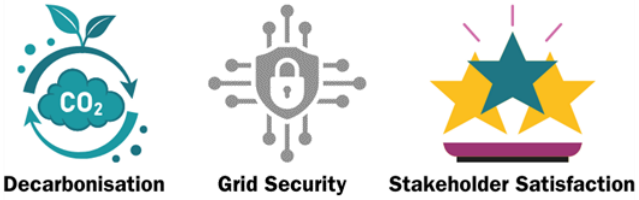
Description of Activities	To meet the 2030 and 2050 government targets, a transformative change in the delivery of all aspects of transmission infrastructure is required. This change involves implementing new methods across projects, organisations and the entire industry to manage the unprecedented scale of work needed. A key aspect of successful delivery is adopting a holistic approach that considers the totality of works to enable optimisation and timely completion.
	
	The key deliverables for this project are detailed below:
	❑ **Establish a Joint Project Management Office**: SONI, alongside NIE Networks, will develop and manage a joint Project Management Office (PMO) dedicated to infrastructure projects. This office will coordinate a multi-year delivery program for infrastructure development, ensuring the increased volume of work needed to support the energy transition is efficiently managed. The join management approach will allow both parties to stay fully informed of their respective progress on individual projects, take timely action to mitigate potential delays, and prioritise and optimise projects up to 2030 and beyond. The Joint PMO will:
	  ❑ Construct and maintain a credible programme, end-to-end program for transmission investment.
	  ❑ Provide oversight for all streams of transmission network investment, including system reinforcement, refurbishment and customer projects.
	  ❑ Identify and implement iterative improvements to enhance the efficient delivery of a growing volume of works.

Key Benefits	The key benefits of the deliverables in this project are detailed below: ❑ **Comprehensive Programmatic View**: Provides a holistic perspective of the entire suite of projects across their full lifecycle, enabling better decision-making and strategic planning. ❑ **Enhanced Project Priorisation and Optimisation:** Facilitates the prioritisation and optimisation of individual projects and tasks, ensuring alignment with overall objectives and efficient resource allocation up to 2030 and beyond. ❑ **Improved Efficiency in Planning and Execution:** This will support efficient and effective planning of work, which is critical given the increasing volume of projects and ambitious timelines.

	❑ **Achievement of Long-Term Goals:** This will help in ensuring that infrastructure projects are delivered on time and within scope, supporting the achievement of the 2030 and 2050 government targets for transmission infrastructure development.
UR Strategic/ Service Priorities	**A culture of effective engagement and collaboration** **A culture of open and collaborative innovation** Ultimately 2030 and 2050 targets require a transformative change in the delivery of all aspects of transmission infrastructure. The scale of delivery required has not previously been implemented in Northern Ireland. A key aspect of delivery success is viewing the totality of works to enable optimisation and delivery.
Engagement	The success of the joint programme of works requires extensive internal stakeholder engagement across SONI and NIE. As well as extensive engagement and collaboration between the SONI and NIE to establish a plan. External stakeholder engagement, feedback and support will be required in the development and prioritisation of the joint programme.
Performance Measure	Joint SONI- NIE Networks Delivery Programme for NI Infrastructure projects communicated externally
Timescale	June 2025
Cost Scale	
SONI Outcome	

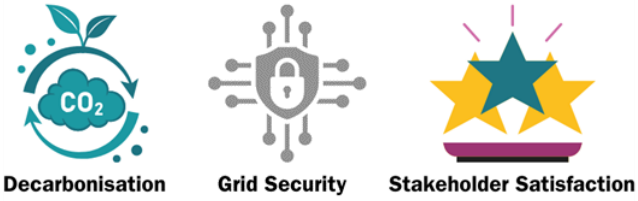
Energising Belfast: Castlereagh—Hannahstown

FWP027: Energising Belfast: Castlereagh—Hannahstown	
Description of Activities	This 'Energising Belfast' project is formerly known as Part 1 of the Belfast Metropolitan Redevelopment Project (Castlereagh – Hannahstown 110kV reinforcement). SONI received approval for the Transmission Network Preconstruction Project (TNPP) submission in June 2021. Since then, the project has entered into Part 2 of the Grid Development Process. Following a review of this project, a further TPI is now planned for the post-connection works at Finaghy and Castlereagh substations. Submission date for the TPI is planned for July 2025. This will lead to an estimated completion date of September 2026. However the site will not be energised until the City Centre works are completed. SONI is continuing ongoing engagement to secure options to purchase two substation sites which is expected to be completed by March 2025. Estimated timelines for completion of this project are listed below: ❑ SONI issue City Centre TPI to NIE Networks March 2027 ❑ Castlereagh and Finaghy Works Completed January 2028 Upon project completion of this project, SONI will be looking to acquire Maldon Street as a site to house series reactors. . Please note this is reliant upon third parties completing a remedial clean-up of site pre-securing of options.
Key Benefits	The key benefits associated with the deliverables for this project are detailed below: ❑ **Enhanced Security of Supply:** The refurbishment or recovery of the Castlereagh-Carnmoney 110kv double circuit line, alongside the installation of a 4th interbus transformer and new infrastructure will significantly improve grid security. ❑ **Infrastructure upgrade:** The installation of 2 new switching stations and a new 110 kV cable connection between Belfast North Main and Belfast Central Main substation will strengthen the networks reliability. ❑ **Replacement of outdated assets**: Replacing the existing Donegal to Belfast North Main cable circuits will ensure that older infrastructure is modernised, thus enhancing overall system performance.

	❑ **Increased Grid Security:** SONI consider that by removing the outdated 110kV double circuit between Carnmoney and Castlereagh, the project will reduce vulnerability and improve the stability of the electricity grid in Northern Ireland.
UR Strategic/ Service Priorities	**A culture of effective engagement and collaboration and whole system collaboration and coordination with 3rd parties, and NIE Networks across its various roles as a TO, DNO and DSO** Engagement with key stakeholder is crucial to our options reports. SONI has collaborated closely with NIE Networks throughout the development of the Options Report. NIE Networks supported the report's conclusions and contributed to the development of cost estimates, scoping, and project timelines. The collaboration with NIE Network ensures that their expertise and perspectives were integrated into the conclusions, cost estimates, scoping and project timelines, reflecting a shared commitment to effective engagement and accurate project planning. SONI maintains a culture of transparency and accountability through monthly meeting with the Utility Regulator, providing regular updates to keep the UR informed and involved in the projects progress.. Additionally, SONI has engaged early with local authorities and elected representative from the areas impacted by the project. Broader stakeholder will continue as the project advance, in line with SONI's Grid Development Process. .
Engagement	SONI will identify vacant land for substation development and engage with key local stakeholders on the utilisation of those sites.
Performance Measure	1. Secure options to purchase substation developments 2. TPI issued to NIEN
Timescale	1. SONI aim to secure options to purchase two substation sites.—March 2025 2. TPI issued to NIEN— July 2025
Cost Scale	
SONI Outcome	

Airport Road Main 110/33 kV Substation

FWP25-08: Airport Road Main 110/33 kV Substation	
Description of Activities	It is planned to construct a new 110/33 kV substation in the Belfast Harbour Estate, close to the existing Airport Road 33/6.6 kV substation. The substation will be connected to the existing Rosebank substation via the existing 110 kV tower line (currently operated at 33 kV) from Rosebank to Sydenham Road. During the period 2023-2024, SONI continued to progress the substation site and securing legal agreements for the site acquisition. Issues have arisen over the past year in relation to the legal agreements and as such these have impacted the timeline. These issues have eased, and legal agreement security recommenced in Summer 2024. SONI will continue towards finalisation of the landowner agreements. The project is planned for estimated energisation in 2026.
Key Benefits	The key benefits associated with the deliverables for this project are detailed below: ❑ Enhanced Security of Supply This project addresses the growing demand for electricity in the Belfast Harbour and city centre area, ensuring a reliable power supply. ❑ Capacity Expansion: By responding to the increasing load in these high-demand area, the project will help to prevent potential supply issues and will support future growth.
UR Service Priorities	**A culture of effective engagement and collaboration** SONI is committed to working closely with NIE Networks throughout the project, aligning with SONI's Grid Development Process. This collaboration focuses on the development of the transmission system in the Belfast Harbour and City Centre area, ensuring that both organisations coordinate their efforts and integrate their expertise. Additionally, SONI maintain ongoing discussion with other involved parties, fostering a collaborative environment that supports comprehensive and coordinated project advancement. This approach not only enhances the effectiveness of the project but also ensures that all relevant stakeholders contribute and benefits from the collaborative process.
Engagement	SONI provides the Utility Regulator with regular project updates during our monthly meetings. SONI collaborate closely with NIE Networks on all joint activities related to this project and maintain ongoing discussions with the Belfast Harbour Commission to ensure comprehensive stakeholder involvement. SONI will be continuing these engagement activities throughout 2024-2025.

Performance Measure	1. Finalisation of the Landowner Agreements for the site and indicative cable routes (33kV & 110kV) 2. Transmission Project instruction issued to NIE Networks
Timescale	1. Finalisation of the Landowner Agreements for the site and indicative cable routes (33kV & 110kV) **October 2024** 2. Transmission Project instruction issued to NIE Networks **October 2024**
Cost Scale	
SONI Outcome	

North South 400 kV Interconnector

FWP026: North South 400kV Interconnector	
Description of Activities	In In the SONI Forward Work Plan for 2023-2024 SONI was continuing work for land access, due to delays with DfE issuing Wayleaves, the initial delivery dates were pushed out. In August SONI achieved 70% access following the issues of the first batch of Necessary Wayleaves by DfE. SONI anticipate all necessary wayleaves being secured by June 2025. Article 40 allows the commencement of construction of the overlined which will be secured from DfE in September 2024. Construction will commence on the project in November 2025. SONI estimate that the North South 400 kV Interconnector will be operational by Q1 2029. The key deliverables planned for this period are:. 1. SONI to issue a Transmission Project Instruction (TPI) to NIE Networks for construction of Overhead line that have easements and wayleaves secured. This is targeted to be complete by October 2024. 2. SONI will enter into a Transmission Project Agreement with NIE Networks in November 2024 (This is dependent on NIE Networks
Key Benefits	The key benefits of the deliverables in this project are detailed below: • **Enhanced Security of Supply:** The North-South Interconnector project will strengthen the reliability and resilience of the electricity grid, ensuring a stable electricity supply for all consumers in Northern Ireland • **Renewable Electricity System Integration:** The North-South Interconnector project will support the integration of renewable energy sources, which is beneficial in facilitating the transition to a cleaner and more sustainable energy system. • **Market integration:** SONI believe that by improving cross border electricity flows and market efficiency, the North-South interconnector project will enable better access to competitive energy markets, ultimately benefiting consumers. • **Consumer Cost Savings**: The North-South Interconnector project is projected to deliver a combined annual cost benefit of $100 million to consumers by 2030, in line with ENTSO's TYNDP
UR Strategic/ Service Priorities	**A culture of organisational learning, accountability and planning that supports SONI agility and responsiveness in meeting policy, regulatory and market development and Developing markets through competition and stakeholder engagement and collaboration.**

	The North-South Interconnector project will reinforce the grid for both Ireland and Northern Ireland and will not only address critical infrastructure needs but also demonstrate our strategic approach to market development through extensive stakeholder engagement and collaboration. This project demonstrates SONI's commitment to effective planning, responsive adaption and collaborative engagement, reinforcing our dedication to advancing both infrastructure and market development.
Engagement	Intensive landowner engagement with impacted landowners remains ongoing, supported by political stakeholder and community engagement.
Performance Measure	Performance for the period will be measured against the successful progression of deliverables above.
Timescale	1. SONI to issue a Transmission Project Instruction (TPI) to NIE Networks for construction of Overhead line that have easements and wayleaves secured. – **October 2024** 2. SONI will enter into a Transmission Project Agreement with NIE Networks – **November 2024** (This is dependent on NIE Networks
Cost Scale	
SONI Outcome