

# SONI Forward Work Plan

**2022 – 23**

**Appendix 3 SONI Deliverables 2022-2023**

**Role 3 System Planning**

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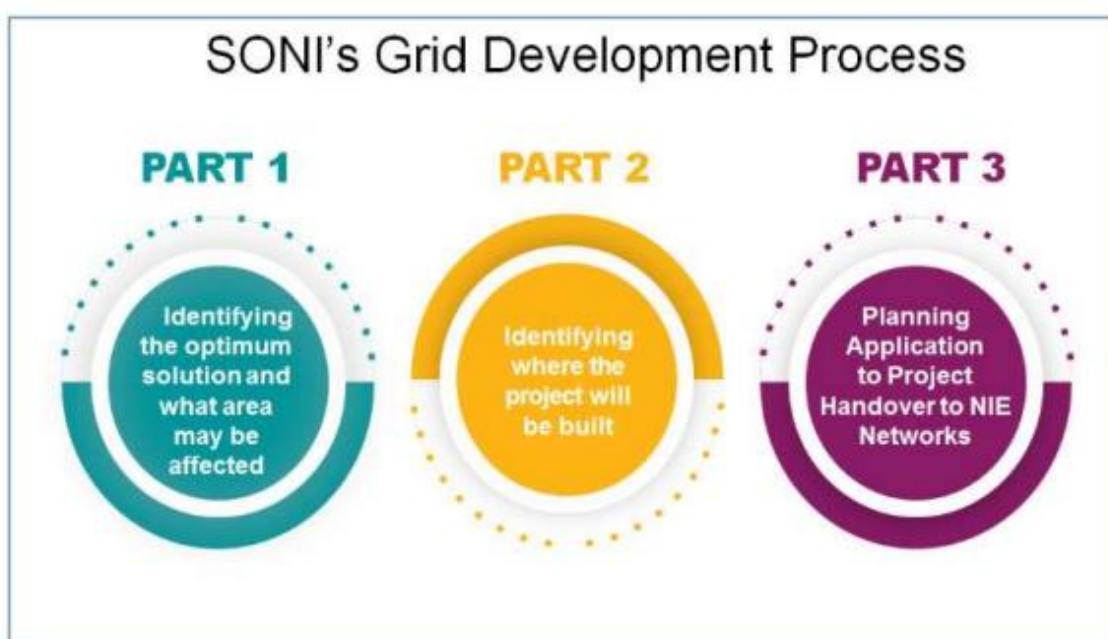
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# SONI Deliverables 2022-2023 – Role 3 System Planning

The SONI Forward Work Plan provides details on the various projects and programmes of work that will be undertaken over the period from October 2022 to September 2023. 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<sup>1</sup> funding request can be prepared and submitted to the UR for approval.

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

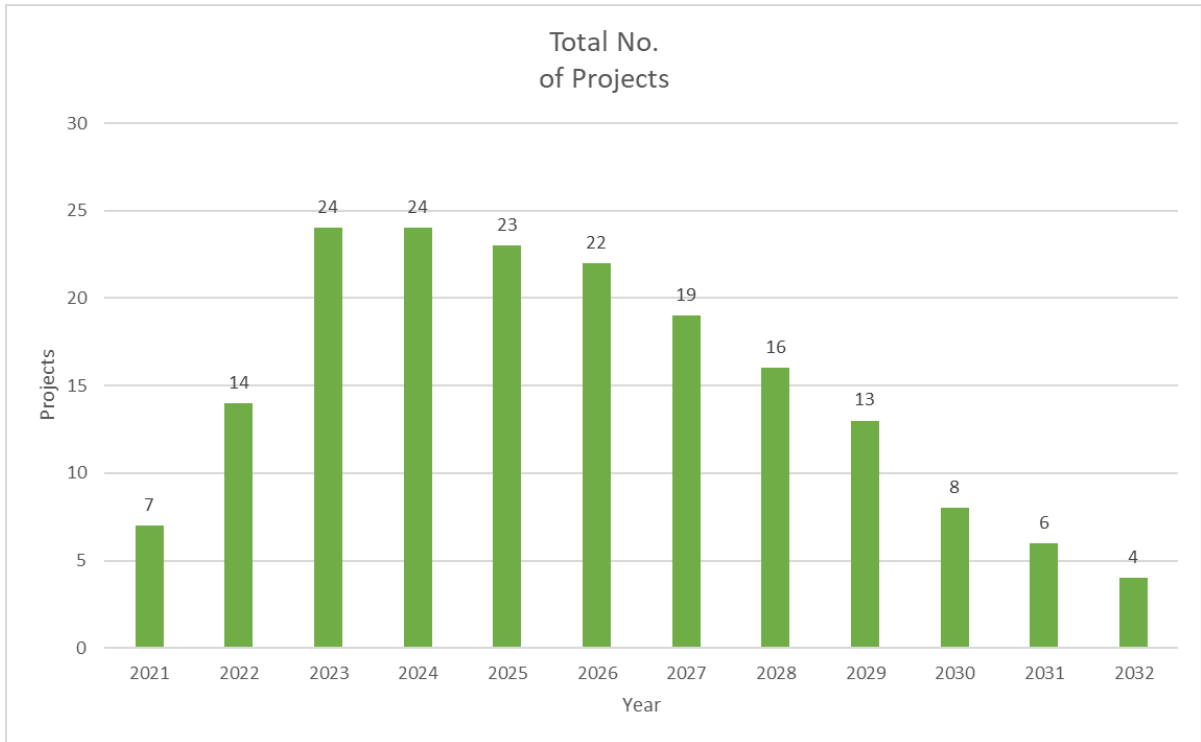
Part 3 is the part of the process where SONI submits—and supports a planning application leading to project handover to NIE Networks.

The graph below provides an overview of the planned projects over the next 10 years. Note that this graph is calendar year and not the year ahead covered under the plan, i.e. not October 2022 to September 2023.

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<sup>1</sup> Transmission Network Preconstruction Project

<sup>2</sup> Examples of this engagement are highlighted throughout the document

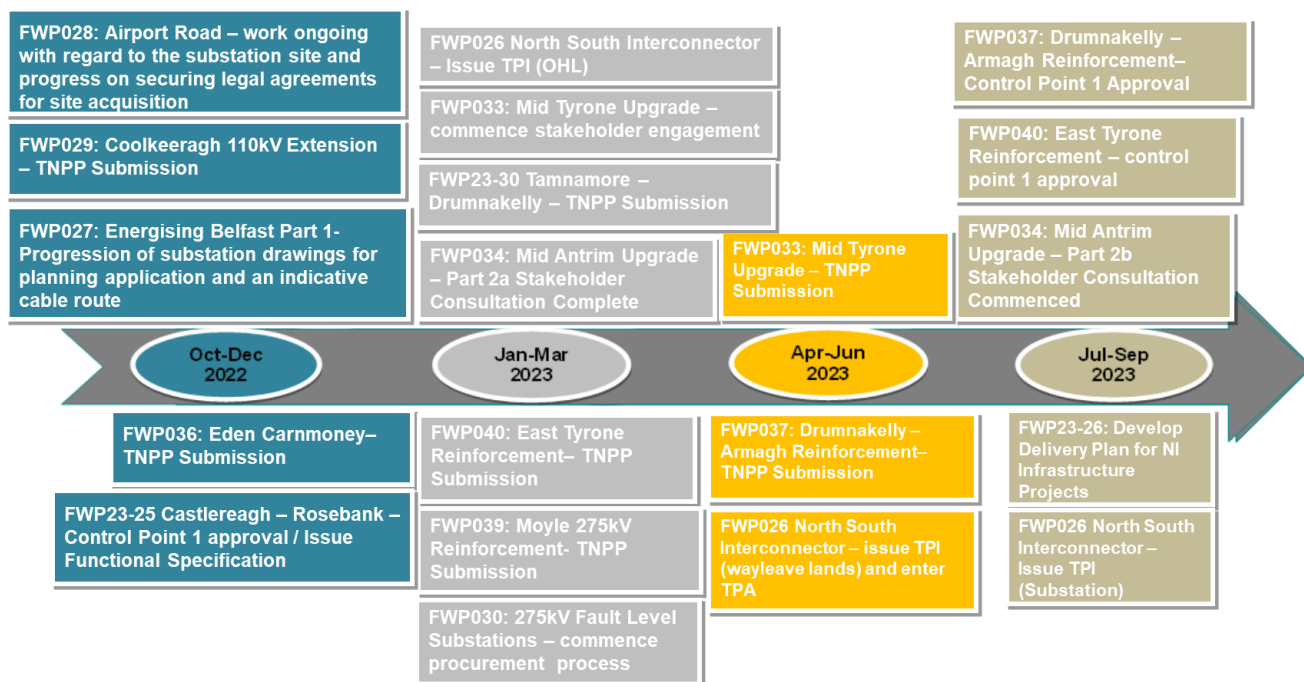


System Planning plays an integral role in the preparation and publication of the Transmission Development Plan for Northern Ireland<sup>3</sup> (TDPNI). The projects detailed in the TDPNI are progressed by SONI in collaboration with NIE Networks as Transmission Owner, as some projects are linked to asset upgrades or replacements. SONI has detailed the projects within role 3 up to the project handover to NIE Networks for construction, commissioning and energisation, which are also provided in the TDPNI. Any detailed engagement activities have a detailed description provided in our Powering the Future: SONI's Grid Development Process brochure<sup>4</sup> where we refer to part 1 or part 2 engagement activities.

The diagram below demonstrates the associated project timeline of those projects which are being progressed over the period of the Forward Work Plan.

<sup>3</sup> [https://www.soni.ltd.uk/media/documents/TDP-NI-2021-\(draft\)-for-SONI-public-consultation.pdf](https://www.soni.ltd.uk/media/documents/TDP-NI-2021-(draft)-for-SONI-public-consultation.pdf)

<sup>4</sup> [https://www.soni.ltd.uk/\\_uid/eddbfb33-2c82-441e-b7e1-77d529df4ac1/SONI's-Powering-The-Future-Grid-Development-Process-brochure-20-8-21.pdf](https://www.soni.ltd.uk/_uid/eddbfb33-2c82-441e-b7e1-77d529df4ac1/SONI's-Powering-The-Future-Grid-Development-Process-brochure-20-8-21.pdf)



## Overview of the projects

The table below provides a complete view of the projects being undertaken across Role 3 System Planning. Additional detail is provided around these deliverables throughout this document.

SONI would emphasize that any TNPP submissions are also dependent on timely receipt of information from NIE Networks.

Project	Milestone	Performance Measure	Timescale
FWP027 Energising Belfast Part 1: Castlereagh – Hannahstown	Review and approve NIE Networks Design Specification for the works at Finaghy Main.	Progression of set of substation drawings for the planning application and an indicative cable route  Note: this is dependent on site specifications and third parties.	October 2022
	Review and approve NIE Networks Design Specification for the transformer works at Castlereagh Main.		November 2022
	Issue partial Transmission Project Instructions to NIE Networks and enter into a Transmission Project Agreement with NIE Networks for the works associated with Castlereagh Main and Finaghy Main.		December 2022

	Commence development of the set of substation drawings for the planning application and an indicative cable route		
<b>FWP026: North South 400kV Interconnector</b>	Currently in Part 3 Issue Transmission Project Instruction (OHL)  Issue Transmission Project Instruction (wayleave lands)  Issue Transmission Project Instruction (substation)  SONI to enter into a TPA	Transmission Project Instruction Issued    Transmission Project Agreement	March 2023  June 2023  September 2023  June 2023
<b>FWP028: Airport Road Main 110/33 kV Substation</b>	Currently in Part 3 SONI work ongoing with regard to the substation site and progress on securing legal agreements for site acquisition	Finalise Landowner Agreements	Commence November 2022
<b>FWP034: Mid Antrim Upgrade</b>	Part 2a Stakeholder Consultation  Part 2b Stakeholder Consultation	Part 2a Stakeholder Consultation – Completed  Part 2b Stakeholder Consultation – Commenced	January 2023  September 2023
<b>FWP036: Eden – Carnmoney</b>	Prepare and submit TNPP for UR approval	TNPP Submission	November 2022
<b>FWP037: Drumnakelly and Armagh Reinforcement</b>	TNPP Submission  Control Point 1 Approval	TNPP Submission	April 2023  August 2023
<b>FWP040 East Tyrone Reinforcement</b>	TNPP Submission  Control Point 1 Approval	TNPP Submission	February 2023  September 2023
<b>FWP033 Mid Tyrone Upgrade</b>	Commence Part 1 Stakeholder Engagement	Part 1 Stakeholder Engagement commenced	March 2023

<b>FWP039: Moyle 275kV Reinforcement</b>	TNPP Submission	TNPP Submission	January 2023
<b>FWP029 Coolkeeragh 110kV Extension</b>	TNPP Submission	TNPP Submission	November 2022
<b>FWP23-30 Tamnamore – Drumnakelly Restrung</b>	TNPP Submission	TNPP Submission	February 2023
<b>FWP030: 275kV Substation Fault Level Solutions</b>	Commence progression of procurement and award of contract with substation design consultant	Procurement and award of contract with substation design consultant	Commence from January 2023
<b>FWP23-25 Castlereaugh – Rosebank</b>	Control Point 1 approval / Issue Functional Specification	Timely Issue of Functional Specification	November 2022
<b>FWP23-26 Delivery Plan for NI Infrastructure Projects</b>	Development of a delivery plan for all NI Infrastructure Projects and communicate externally	Timely delivery of a plan for NI Infrastructure Projects	September 2023

# Role 3: Detailed Programme of Deliverables

## Energising Belfast Project Part 1

Deliverable	<b>FWP027: Energising Belfast Project Part 1: Castlereagh – Hannahstown</b>
<b>Description of Activities</b>	<p>This 'Energising Belfast' project, 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 this the project has entered into Part 2 of the Grid Development Process.</p> <p>Planned activities for the future include:</p> <ol style="list-style-type: none"> <li>1. SONI to review and approve NIE Networks Design specification for the Castlereagh Tx4 works in October 2022. This should progress to construction in December 2022 with an estimate for completion of energisation and commissioning of Tx4 in June/July 2024;</li> <li>2. SONI to review and approve NIE Networks Design Specification for the works at Finaghy Main (SONI issued the Functional Specification to NIE Networks in March 2022). This is expected to complete by November 2022;</li> <li>3. SONI to issue Transmission Project Instructions to NIE Networks and enter into a Transmission Project Agreement with NIE Networks for the works associated with Castlereagh Main and Finaghy Main. This is expected by December 2022.</li> <li>4. SONI to agree an outage plan with NIE Networks in order to carry out the works required across the entire project. This will be completed from 2023 to 2026, with energisation targeted by Jun/July 2027.</li> </ol> <p>The above detail provides an estimated timeline for the project overall. Over the period of this plan the main activity will be the progression of set of substation drawings for the planning application and an indicative cable route.</p>
<b>Key Benefits</b>	<p>The driver for this project (also detailed in the Draft TDPNI 2021-2030) is Security of Supply.</p> <p>The existing Castlereagh – Carnmoney 110 kV double circuit tower line is due for refurbishment or recovery due to the condition of the assets. The preliminary preferred option is to install a 4th interbus transformer at Castlereagh, establish two new switching stations and establish a new 110 kV cable connection between Belfast North Main and Belfast Central Main substations through Belfast city centre. The project also includes the replacement of the existing Donegall to Belfast North Main cable circuits. This will enable removal of the existing 110 kV double circuit between Carnmoney and Castlereagh.</p> <p>As a result of this project there will be improved grid security.</p>



<b>Strategic Theme</b>	<p><b>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</b></p> <p>Engagement with stakeholders and industry is important and considered as part of our Options Reports. SONI have engaged with NIE Networks throughout the development of the Options Report. NIE Networks were supportive of the conclusions reached in this report and have worked with SONI to develop the cost estimates, scoping and project timelines discussed therein.</p> <p>SONI regularly meets with the Utility Regulator at the monthly SONI-UR meetings and will continue to provide regular monthly updates. SONI has progressed stakeholder engagement with the local authorities and elected representatives of areas affected by the project at an early stage. The full list of these stakeholders which SONI will contact over the coming months can be found in Appendix J of the Options Report<sup>5</sup>. Wider stakeholder engagement will take place as the project progresses in accordance with SONI’s Grid Development Process<sup>6</sup>.</p>
<b>Engagement</b>	<p>The Energising Belfast project launch was due to take place on 19 September at Belfast City Hall. Following the death of Queen Elizabeth II, the project launch has been delayed until Tuesday 11 October. The launch event will kick start Part 2a of our engagement for the project and the public will have up until the end of November to provide feedback and comments. During this period we will be hosting a couple of consultation events and continuing to engage with key stakeholders across the proposed project area. In 2023 (dates TBC), we will move to part 2c of our engagement process before we submit our planning application to Belfast City Council.</p> <p>Including the above engagement activities, SONI will undertake full stakeholder engagement as part of our work to finalise the choice of preferred solution and subsequent process to obtain any consents that are required. We anticipate that this will be a phased project and that elements will be completed before the final completion of the project. More information is also provided in the Appendix 6: SONI Stakeholder Engagement.</p>
<b>Performance Measure</b>	<p>Progression of set of substation drawings for the planning application and an indicative cable route.</p> <p>Partial Transmission Project Instructions to NIE Networks and entered into Transmission Project Agreements with NIE Networks for the works associated with Castlereagh Main and Finaghy Main.</p> <p>Note: this is dependent on site specifications and third parties.</p>
<b>Timescale</b>	<p>Review and approve NIE Networks Design specification for the Castlereagh Tx4 works in October 2022</p> <p>Review and approve NIE Networks Design Specification for the works at Finaghy Main in November 2022</p> <p>Partial TPI and TPA in December 2022 as indicated above.</p>

<sup>5</sup> [Carnmoney - Castlereagh Options Report \(soni.ltd.uk\)](https://www.soni.ltd.uk/Carnmoney-Castlereagh-Options-Report)

<sup>6</sup> [SONIs-Powering-The-Future-Grid-Development-Process-brochure-20-8-21.pdf](#)

	Total Project Estimated Completion: Jun/July 2027			
<b>SONI Outcome</b>	<b>Decarbonisation</b>	<b>Grid Security</b>	System Wide Costs	<b>Stakeholder Satisfaction</b>

## Eden-Carmoney

Deliverable	FWP036 Eden – Carmoney			
Description of Activities	<p>This project (Eden – Carmoney 110kV Circuit Uprate / Reconfiguration) forms part 2 of the previously named Belfast Metropolitan Project. The existing tower line is due for refurbishment due to the condition of the assets.</p> <p>Upcoming activities over the period include the preparation and submission of a TNPP for the UR's approval</p>			
Key Benefits	The driver for this project is security of supply. The existing tower line is due for refurbishment due to the condition of the assets.			
Strategic Theme	<p><b>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</b></p> <p>SONI continue to discuss this project with the Utility Regulator at the monthly SONI-UR meetings and continue to provide regular monthly updates. SONI has progressed stakeholder engagement with the local authorities and elected representatives of areas affected by the project at an early stage. Wider stakeholder engagement will take place as the project progresses in accordance with SONI's Grid Development Process<sup>7</sup>. The full list of these stakeholders can be found in Appendix J of the Options Report<sup>8</sup>.</p>			
Engagement	<p>SONI are continuing to engage and collaborate with NIE Networks as the TNPP request is prepared and share information which assists both parties in our roles. Subject to this funding approval, SONI will commence Part 2 stakeholder engagement activities during this year.</p> <p>SONI will continue to engage with the UR as the TNPP submission is prepared and welcome any discussions once the submission has been made to the UR.</p>			
Performance Measure	TNPP submission			
Timescale	November 2022 for TNPP submission Total Project Estimated Completion: Spring 2027			
SONI Outcome	<b>Decarbonisation</b>	<b>Grid Security</b>	System Wide Costs	<b>Stakeholder Satisfaction</b>

<sup>7</sup> [SONIs-Powering-The-Future-Grid-Development-Process-brochure-20-8-21.pdf](#)

<sup>8</sup> [Carmoney - Castlereagh Options Report \(soni.ltd.uk\)](#)

## North South 400kV Interconnector

Deliverable	<b>FWP026: North South 400kV Interconnector</b>			
<b>Description of Activities</b>	<p>In the SONI Forward Work Plan for 2021-2022 SONI was continuing work for land access.</p> <p>The key activities planned for the period include:</p> <ol style="list-style-type: none"> <li>1. SONI to issue a Transmission Project Instruction (TPI) to NIE Networks for construction of Overhead line that have easements secured. This is targeted to complete by March 2023;</li> <li>2. SONI to issue a TPI to NIE Networks for wayleave lands. This is targeted to complete by June 2023.</li> <li>3. SONI to issue TPI for substation by September 2023, this is later than Overhead line and post TPA due to the phasing in procurement for the substation contractor.</li> <li>4. SONI will enter into a Transmission Project Agreement with NIE Networks in June 2023*.</li> </ol> <p>The North South 400kV Interconnector is estimated to be operational in 2026.</p> <p>*Item 4 is also dependent on ESB Networks progressing to Project Agreement in ROI.</p>			
<b>Key Benefits</b>	<p>The drivers of this project include Security of Supply, RES Integration and Market Integration. In accordance with ENTSOE 2020 TYNDP<sup>9</sup>, the project will deliver a combined cost benefit to consumers of €100m per annum by 2030.</p>			
<b>Strategic Theme</b>	<p><b>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.</b></p> <p>Over the period an intensive landowner engagement process will continue, as detailed below. This process will allow SONI to demonstrate our planning processes that support SONI responsiveness to stakeholder and community engagement.</p> <p>The project will create a major reinforcement of the Grid for Ireland and Northern Ireland. The planning for this reinforcement of the Grid highlights SONI's development of the market through stakeholder engagement and collaboration.</p>			
<b>Engagement</b>	<p>Intensive landowner engagement with 180 impacted landowners, supported by political stakeholder and community engagement.</p>			
<b>Performance Measure</b>	<p>Transmission Project Instruction Issued (2 TPI's to be issued) Transmission Project Agreement entered into by June 2023</p>			
<b>Timescale</b>	<p>As indicated above, Transmission Project Agreement by June 2023, construction starting in Q4 2023 and energisation in 2026.</p>			
<b>SONI Outcome</b>	<b>Decarbonisation</b>	<b>Grid Security</b>	System Wide Costs	<b>Stakeholder Satisfaction</b>

<sup>9</sup> <https://tyndp.entsoe.eu/tyndp2020/projects/>

## Airport Road

Deliverable	<b>FWP028: Airport Road Main 110/33 kV Substation</b>			
<b>Description of Activities</b>	<p>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.</p> <p>During the period 2021-2022, SONI continued to progress the substation site and securing legal agreements for the site acquisition.</p> <p>Issues have arisen over the past year corresponding to the legal agreements and as such these have impacted the timeline. SONI has provided the key activities for the period below, which are dependent on securing the legal agreements for the site.</p> <p>SONI will continue towards finalisation of the landowner agreements.</p> <p>The project is planned for energisation estimated in 2024/25.</p>			
<b>Key Benefits</b>	<p>The driver of this project is security of supply. The need for this project arises from the increasing load in the Belfast Harbour and city centre area.</p>			
<b>Strategic Theme</b>	<p><b>A culture of effective engagement and collaboration</b></p> <p>SONI work in coordination and collaboration with NIE Networks throughout this project and we continue to progress in accordance with SONI's Grid Development Process. SONI are working with NIE Networks in order to develop the transmission system at the Belfast Harbour and City Centre area. We are also in discussions with other parties involved in the project throughout.</p>			
<b>Engagement</b>	<p>SONI provides the UR with regular updates on the project during our monthly meetings. We are also actively collaborating with NIE Networks in any joint activities for the project and engaged in discussions with the Belfast Harbour Commission.</p> <p>SONI will be continuing these engagement activities throughout 2022 – 2023.</p>			
<b>Performance Measure</b>	<p>Finalisation of the Landowner Agreements for the site and indicative cable routes (33kV &amp; 110kV)</p>			
<b>Timescale</b>	<p>SONI work ongoing with regard to the substation site and progress on securing legal agreements for site acquisition</p> <p>Overall project estimated to complete by 2024/25</p>			
<b>SONI Outcome</b>	<b>Decarbonisation</b>	<b>Grid Security</b>	System Wide Costs	<b>Stakeholder Satisfaction</b>

## Mid Antrim Upgrade

The Mid Antrim Upgrade is a high-capacity transmission system upgrade between the Kells and Rasharkin Main substations in County Antrim.

Renewable energy is central to delivering a clean, low carbon electricity system, which in turn, will support the delivery of the Northern Ireland Executive's future energy targets. To accommodate the increase in renewable energy generation in the North and West and to transfer it to the East where there is greater demand, the grid in the Mid-Antrim area must be made stronger and more resilient.

Currently, there is a bottleneck on the grid in the Mid-Antrim area and there is an inability to transmit all the renewable energy generated in the North and West, to urban centres such as Ballymena, Antrim, and Greater Belfast. The Mid Antrim Upgrade is a proposed solution to this problem.

This issue identified in the North and West area was highlighted in the Shaping Our Electricity Future Consultation<sup>10</sup>. The Mid-Antrim Upgrade was also updated on at the Shaping Our Electricity Future Advisory Council meeting in May 2022<sup>11</sup>

Deliverable	FWP034: Mid Antrim Upgrade
Description of Activities	<p>SONI carried out an examination of the study area which includes the existing grid between Ballymena, Creagh, Kells and Rasharkin substations. The examination looked at several different options for delivering the project in this area including environmental, technical, and economic factors.</p> <p>In 2020, an Environmental Report was produced which appraised sample corridors where new grid infrastructure associated with each option could be located. SONI looked at existing grid infrastructure and how we could utilise it.</p> <p>'Option 6' from the Option paper was selected, which includes a new substation at Terrygowan, an upgrade of the double circuit between Kells and Terrygowan (one side only) and a new overhead line between Terrygowan and Rasharkin. SONI completed Part 1 stakeholder engagement in 2021 which is where several key stakeholder groups, like the local council and elected representatives were engaged with so they can understand better how the project may affect communities, landowners, and businesses in the proposed area.</p> <p>Since then this project has completed Part 1 of SONI's 3 Part Process for Developing the Grid and has entered Part 2<sup>12</sup>, which identifies where the project will be built.</p> <p>An extensive Pre-Application Community Consultation (PACC) for the Mid Antrim Project will be undertaken within Part 2, before the submission of the planning application in Part 3.</p>

<sup>10</sup> [Shaping-Our-Electricity-Future-SONI-Plain-English-Consultation-Report.pdf](#) – see pages 19 and 21

<sup>11</sup> [PowerPoint Presentation \(soni.ltd.uk\)](#) see slides 60, 61 and 74

<sup>12</sup> See page 3 of this Appendix for the Grid Development 3 part process

	<p>During the PACC, SONI's proposals will evolve from the point where only a study area will be presented for consultation, to detailed plans including a specific site and technology for the proposed project once stakeholder feedback has been taken into consideration. As we continue to progress the plans for this project, it is aimed to carry out an extensive and best practice public consultation on the proposals in 2022/2023.</p> <p>Section 27 of the Planning Act (Northern Ireland) 2011 places a statutory duty on applicants for planning permission to consult the community in advance of submitting an application, if the development falls within the major category as prescribed in The Planning (Development Management) Regulations (Northern Ireland) 2015.</p> <p>The proposed substation and associated development relevant to SONI's 'Mid Antrim Project' as referenced in this plan exceeds the threshold for major developments prescribed for the purpose of section 25(1) of the Planning Act (Northern Ireland) 2011 in relation to energy infrastructure. Therefore, it requires statutory Pre-Application Community Consultation (PACC) ahead of submission of any planning application.</p> <p>Upon completion of the PACC process, a detailed Pre-Application Community Consultation Report will be compiled and submitted alongside the planning application for the project. This Report provides a thorough assessment of the consultation activity undertaken by SONI, in line with statutory requirements.</p> <p>Following the determination of the planning process SONI will then hand the project over to NIE Networks for construction to commence.</p> <p>Landowner engagement and planning and environmental work began during mid-2022. Initial environmental walkover and surveys are expected to be completed in September 2022.</p>
<b>Key Benefits</b>	<p>This project will ensure renewable energy generated in the North and West of Northern Ireland can be transported to the East where there is the demand.</p> <p>The Mid Antrim Upgrade will reduce bottlenecks on the grid, expected to save consumers an estimated £9 million per year by 2030. The system between Kells and Rasharkin has become a point of congestion due to the level of generation in the North that passes towards the East. This means we cannot readily transfer all the clean energy that is available leading to cost implications for consumers.</p> <p>The Mid Antrim Upgrade will help to improve the efficiency of the electricity system, ensuring a more efficient and secure electricity supply on a sustainable basis. The Mid Antrim Upgrade is a key project to deliver more clean energy throughout the network in Northern Ireland and is crucial to our 2030 energy strategy targets.</p>
<b>Strategic Theme</b>	<p><b>A culture of effective engagement and collaboration</b>  <b>Whole system collaboration and coordination with 3rd parties, and NIE Networks across its various roles as a TO, DNO and DSO</b>  <b>Collaborating and coordinating to promote a holistic, customer-based service approach to digitalisation</b></p>

	<p>SONI work in coordination and collaboration with NIE Networks in order to ensure that the project will improve the efficiency of the electricity system. This joint approach to the project will result in the development of the Transmission System and contribute to the grid security outcome. SONI will also be actively engaged with key stakeholders and we have already carried out extensive engagement and will continue this through so all views are given full consideration and discussed both internally and with the UR per our monthly working meetings.</p> <p>The use of technology throughout the engagement areas of this project also demonstrate our alignment to the UR's priority surrounding a customer based approach to digitalisation, through using a virtual consultation, a virtual meeting room which will suit the needs or residents in communities which may wish to be involved in engagement activities pertaining to the programme.</p>
<p><b>Engagement</b></p>	<p>SONI is fully committed to early engagement and has already carried out an extensive round of Engagement during Part 1. Part 2 will enable key stakeholders an opportunity to have their say on the project, with all views and feedback taken into consideration.</p> <p>This will utilise a range of consultation techniques and includes engagement with various stakeholder audiences. An extensive Pre-Application Community Consultation (PACC) for the Mid Antrim Project will be undertaken within Part 2, before the submission of the planning application in Part 3.</p> <p>During the PACC, SONI's proposals will evolve from the point where only a study area will be presented for consultation, to detailed plans including a specific site and technology for the proposed project once stakeholder feedback has been taken into consideration. As we continue to progress the plans for this project, it is aimed to carry out an extensive and best practice public consultation on the proposals in 2022/2023.</p> <p><b><u>Enhanced Stakeholder and Digital Communications</u></b></p> <p>The project's consultation portal will launch at the end of October 2022 and be promoted by a press release, which will include information regarding the in-person consultation events scheduled in November. In addition, will deliver a Community Forum and Citizen Sounding Board. This Community Forum will include a group made up of 15 local stakeholders from the geographical area impacted by the project and will represent the views of their organisation and community in relation to the project and provide guidance on local needs and priorities. The forum is likely to meet every 8 weeks throughout the life of the engagement process.</p> <p>The Citizen Sounding Board will include a group of approximately 30 residents recruited at random to demographically reflect the population of the areas impacted by the project. Their involvement will address the gap in representation that can result from only hearing from organised civil society and interest group. It will operate as a sounding board for SONI and the Community Forum and provide a broadly representative local response, identify priorities, provide feedback and help develop recommendations that are not already shaped by vested interests. The Citizen Sounding Board would be brought together for at least 3 days during the pre-application stage.</p>



	The project will be promoted to the public at the end of October 2022, with a number of consultation and information events scheduled in November 2022, including a virtual consultation meeting room.			
<b>Performance Measure</b>	Part 2a Stakeholder Consultation Completed Part 2b Stakeholder Consultation Commenced			
<b>Timescale</b>	Part 2a Stakeholder Consultation – Completed January 2023 Part 2b Stakeholder Consultation – Commenced September 2023			
<b>SONI Outcome</b>	<b>Decarbonisation</b>	<b>Grid Security</b>	System Wide Costs	<b>Stakeholder Satisfaction</b>

## Drumnakelly and Armagh Reinforcement

<b>Deliverable</b>	<b>FWP037: Drumnakelly and Armagh Reinforcement</b>			
<b>Description of Activities</b>	<p>There is a need to reinforce the distribution system supplying Armagh city and the surrounding area due to increasing demand. It is also forecast that demand will exceed capacity at the existing Drumnakelly 110/33 kV substation. Options being considered include:</p> <ul style="list-style-type: none"> <li>• Establishing a new 110/33 kV substation adjacent to the existing Drumnakelly Main along with associated 33 kV reinforcements to the Armagh area; and</li> <li>• Establishing a new 110/33 kV substation at Armagh with new 110 kV circuits from Tandragee and/or Drumnakelly.</li> </ul> <p>NIE Networks and SONI are jointly working on their respective areas of this project.</p> <p>As part of Forward Work Plan 2022-2023 the following activities are required:</p> <ol style="list-style-type: none"> <li>1. Finalising option appraisal and joint reports with NIE Networks, including the outcome of the environmental study;</li> <li>2. Carry out Part 1 Stakeholder engagement with elected representatives in the project area and key stakeholders;</li> <li>3. Finalise and submit a TNPP submission. This is currently expected to be complete by April 2023, subject to stakeholder engagement commencing in November 2022.</li> <li>4. Progress Part 1 internal approval once the TNPP submission has been approved by the Utility Regulator.</li> </ol>			
<b>Key Benefits</b>	The project is expected to bring enhancements to security of supply.			
<b>Strategic Theme</b>	<p><b>A culture of effective engagement and collaboration</b></p> <p>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.</p>			
<b>Engagement</b>	Carry out Part 1 Stakeholder engagement with elected representatives in the project area and key stakeholders with stakeholder engagement commencing in September 2022 and ongoing throughout the period.			
<b>Performance Measure</b>	TNPP Submission			
<b>Timescale</b>	TNPP Submission – April 2023 Control Point 1 Approval – estimated August 2023 (subject to funding approval)			
<b>SONI Outcome</b>	<b>Decarbonisation</b>	<b>Grid Security</b>	System Wide Costs	<b>Stakeholder Satisfaction</b>

## East Tyrone Reinforcement

Deliverable	<b>FWP040: East Tyrone Reinforcement</b>			
<b>Description of Activities</b>	<p>NIE Networks and SONI are jointly assessing the level of security of supply 110/33kV substation at Dungannon. It is forecast that demand will exceed capacity at the existing Dungannon 110/33kV substation. In addition, there is a particular risk to supplies following a second circuit outage. The options being considered that better address the objectives of this project include:</p> <ul style="list-style-type: none"> <li>• Expand Dungannon Main’s compound, build a new bulk supply point with the full capacity installed and divert load/generation from existing Dungannon Main to the new bulk supply point.</li> <li>• Build a new bulk supply point in Cookstown and connect it through two single 110kV circuit coming from Dungannon Main.</li> <li>• Build new bulk supply point in Cookstown and connect it from the Dungannon – Tremoge 110kV circuits through a new marshalling substation.</li> </ul> <p>For this period, SONI intends to provide a TNPP submission to the UR in February 2023 followed by Control Point 1 approval estimated in September 2023.</p>			
<b>Key Benefits</b>	<ul style="list-style-type: none"> <li>• Maintain the security of supply in both transmission and distribution networks.</li> <li>• Minimise any loss of load due to contingencies in Dungannon Main.</li> <li>• Guarantee that Energy Networks Association’s recommendations on capacity transfer are in place.</li> </ul>			
<b>Strategic Theme</b>	<p><b>A culture of effective engagement and collaboration</b></p> <p>As NIE Networks and SONI are jointly assessing the level of security of supply 110/33kV substation at Dungannon effective engagement, communication and collaboration is an important theme. A coordinated approach is required in the development of this project and as stakeholder engagement commences it will be important to communicate effectively to ensure stakeholders are informed on the programme so they can provide clear feedback.</p>			
<b>Engagement</b>	<p>Part 1 engagement to commence October 2022 Part 2 engagement to commence Q2 2023 (subject to UR approval of the project).</p>			
<b>Performance Measure</b>	<p>Submission of TNPP to the UR and Control Point 1 Approval.</p>			
<b>Timescale</b>	<p>TNPP submission in February 2023 Control Point 1 Approval estimated at September 2023 Overall Project completion Q4 2026</p>			
<b>SONI Outcome</b>	<b>Decarbonisation</b>	<b>Grid Security</b>	System Wide Costs	<b>Stakeholder Satisfaction</b>

## Mid Tyrone Upgrade

Deliverable	<b>FWP033: Mid Tyrone Upgrade</b>			
<b>Description of Activities</b>	<p>The key activity over the last period was the extensive constraint mapping required to progress the project.</p> <p>The 110 kV circuit between Omagh and Tamnamore is subject to high levels of constraint under high RES conditions. This project will increase network capacity in this area.</p> <p>Options analysis is ongoing. Stakeholder engagement is expected to commence in early 2023 and a TNPP submission made in late 2023 which falls out of scope of this year's plan.</p>			
<b>Key Benefits</b>	Increased network capacity in the Mid-Tyrone area.			
<b>Strategic Theme</b>	<p><b>A culture of effective engagement and collaboration</b></p> <p>SONI will be engaging with stakeholders for better outcomes for all, taking on board stakeholder views and listening to our partners as we progress the Mid-Tyrone Upgrade. Ultimately the project is to increase network capacity in the area and therefore enhance the Transmission System.</p>			
<b>Engagement</b>	<p>SONI will be commencing stakeholder engagement in January 2023 and using stakeholder feedback as per our appendix document Stakeholder Engagement.</p> <p>SONI will also be engaging with UR to provide regular updates as the project progresses in the approach to the submission of the TNPP request.</p>			
<b>Performance Measure</b>	Commence part 1 stakeholder engagement			
<b>Timescale</b>	Part 1 Stakeholder engagement – March 2023			
<b>SONI Outcome</b>	<b>Decarbonisation</b>	<b>Grid Security</b>	System Wide Costs	<b>Stakeholder Satisfaction</b>

## Moyle 275kV Reinforcement

Deliverable	<b>FWP039: Moyle 275kV Reinforcement</b>			
<b>Description of Activities</b>	<p>At present, full utilisation of the 500 MW export capability of the Moyle Interconnector is prevented by the potential for network overloads and voltage steps in the event of the loss of the 275 kV double circuit between the Moyle converter station at Ballycronan More and the nearby Ballylumford and Hannahstown substations.</p> <p>This project involves works to allow reconfiguration of the connection to Ballycronan More Converter Station, which then connects to Moyle Interconnector.</p> <p>To address these contingencies, the options being considered that better deliver the objectives of this project are based in connecting directly Ballycronan More Converter Station to Ballylumford Power Station through two or three underground circuits.</p>			
<b>Key Benefits</b>	<p>In a scenario where Moyle Interconnector can work always at its maximum import and export capacities of 500MW, SONI's modelling of potential solutions shows substantial benefits in terms of both electricity production costs and reduced carbon emissions. This is consistent with assessments undertaken by ENTSO-E. The project is also expected to result in increased income for Moyle Interconnector Limited which is operated for the benefit of NI electricity customers and returns surplus revenues to NI customers when available.</p> <p>The numerical results of our modelling are included in the Needs Report for the project which we will publish on our website at the end of the Part One processes.</p>			
<b>Strategic Theme</b>	<p><b>A culture of effective engagement and collaboration</b> SONI works with NIE Networks, Mutual Energy and other key stakeholders to assess the best options for this project. The CO<sub>2</sub> emissions reduction in this project scenario assessment highlights all the considerations that are taken into account when considering a project and the extra steps that can be made in achieving our renewable ambitions.</p>			
<b>Engagement</b>	<p>SONI is engaging with NIE Networks and Mutual Energy Limited as we progress with the project, coordinating and collaborating in activities. Any engagement SONI undertakes not only gives our viewpoints but also engages in actively listening to the views and concerns of other key stakeholders and this information is used as detailed in Appendix: SONI Stakeholder Engagement.</p>			
<b>Performance Measure</b>	<p>TNPP Submission</p>			
<b>Timescale</b>	<p>TNPP Submission by January 2023 Commence Part 2 of the 3 part process from March 2023 (subject to TNPP approval)</p>			
<b>SONI Outcome</b>	<b>Decarbonisation</b>	<b>Grid Security</b>	System Wide Costs	<b>Stakeholder Satisfaction</b>

## Coolkeeragh 110kV Extension

Deliverable	<b>FWP029: Coolkeeragh 110kV Extension</b>			
<b>Description of Activities</b>	<p>This project will facilitate the future connection of a third interbus transformer, the restoration of the second busbar coupler and section switches and other improvements.</p> <p>The main activity over 2021-2022 for this project was focused around the options report preparation and TNPP submission to the Utility Regulator. This was dependent on information being provided from NIE Networks.</p> <p>An Options Report identifying options for extension of the substation is currently being revised to take account of a new option proposed following stakeholder engagement. This is planned to complete in October 2022.</p> <p>SONI will also progress the preparation and submission of the TNPP to the Utility Regulator seeking approval of the preconstruction costs required to get consents for the project.</p> <p>TNPP submission is expected by November 2022 and will progress to part 2 of the 3 part grid development process in March 2023.</p>			
<b>Key Benefits</b>	The driver for this project is renewable integration and security of supply.			
<b>Strategic Theme</b>	<p><b>A culture of effective engagement and collaboration</b></p> <p>SONI will be working in collaboration with NIE Networks as the programme of activities develops in order to make improvements to the Transmission System which will enhance grid security.</p>			
<b>Engagement</b>	SONI is engaged with the UR in our regular monthly meetings where we provide updates on the project and use the opportunity to enter into discussion on any challenges that we may face or mitigations we are taking on projects. SONI will continue to engage with the UR as we prepare to submit the TNPP for their review.			
<b>Performance Measure</b>	TNPP Submission			
<b>Timescale</b>	<p>TNPP Submission – November 2022</p> <p>Progress to Part 2 of SONI's 3 part process – March 2023 (subject to project funding approval)</p>			
<b>SONI Outcome</b>	<b>Decarbonisation</b>	<b>Grid Security</b>	System Wide Costs	<b>Stakeholder Satisfaction</b>

## Tamnamore - Drumnakelly Restrung

<b>Deliverable</b>	<b>FWP23-30: Tamnamore – Drumnakelly Restrung</b>			
<b>Description of Activities</b>	<p>Over the period SONI plans to progress the project to a TNPP submission to the UR.</p> <p>These circuits may be subject to overload under high wind generation conditions and are operated out of service. This project is to replace the conductor on these circuits with higher capacity conductor. This will allow these circuits to fully return to service.</p>			
<b>Key Benefits</b>	The driver for this project is renewable integration and security of supply.			
<b>Strategic Theme</b>	<p><b>A culture of effective engagement and collaboration</b></p> <p>SONI will be working in collaboration with NIE Networks as the programme of activities develops in order to make improvements to the Transmission System which will enhance grid security.</p>			
<b>Engagement</b>	SONI is engaged with the UR in our regular monthly meetings where we provide updates on the project and use the opportunity to enter into discussion on any challenges that we may face or mitigations we are taking on projects. SONI will continue to engage with the UR as we prepare to submit the TNPP for their review.			
<b>Performance Measure</b>	TNPP Submission			
<b>Timescale</b>	TNPP Submission – February 2023			
<b>SONI Outcome</b>	<b>Decarbonisation</b>	<b>Grid Security</b>	System Wide Costs	<b>Stakeholder Satisfaction</b>

## 275kV Substation Fault Level Solutions

Deliverable	FWP030: 275kV Substation Fault Level Solutions
Description of Activities	<p>This project covers five substations which require a redevelopment (detailed below).</p> <p><b>Magherafelt 275kV Redevelopment</b>            A re-appraisal of the original design using modern standards has found that the concrete structures at Magherafelt are not sufficient to meet expected mechanical loading under a fault. This is being managed through a risk assessment and risk mitigation process by SONI and NIE Networks. SONI and NIE Networks are considering the impact on the feasibility of additional connections at Magherafelt 275 kV. This project will address this issue through redevelopment of the existing substation or replacement.</p> <p><b>Castlereagh 275kV Redevelopment</b>            A re-appraisal of the original design using modern standards has found that the concrete structures at Castlereagh are not sufficient to meet expected mechanical loading under a fault. This is being managed through a risk assessment and risk mitigation process by SONI and NIE Networks. SONI and NIE Networks are considering the impact on the feasibility of additional connections at these sites. This project will address this issue through redevelopment of the existing substation or replacement.</p> <p><b>Tandragee 275kV Redevelopment</b>            A re-appraisal of the original design using modern methods has found that the concrete structures at Tandragee are not sufficient to meet expected mechanical loading under a fault. This is being managed through a risk assessment and risk mitigation process by SONI and NIE Networks. SONI and NIE Networks are considering the impact on the feasibility of additional connections at affected sites. This project will address this issue through redevelopment of the existing substation or replacement.</p> <p><b>Kells 275kV Redevelopment</b>            A re-appraisal of the original design using modern methods has found that the concrete structures at Kells are not sufficient to meet expected mechanical loading under a fault. This is being managed through a risk assessment and risk mitigation process by SONI and NIE Networks. SONI and NIE Networks are considering the impact on the feasibility of additional connections at affected sites. This project will address this issue through redevelopment of the existing substation or replacement.</p> <p><b>Coolkeeragh 275kV Redevelopment</b>            A re-appraisal of the original design using modern methods has found that the concrete structures at Coolkeeragh are not sufficient meet expected mechanical loading under a fault. This is being managed through a risk assessment and risk mitigation process by SONI and NIE Networks but it is currently not possible to facilitate additional connections at Coolkeeragh 275 kV. This project will address this issue through redevelopment of the existing substation or replacement.</p> <p>The key activities over the period will be:</p> <ul style="list-style-type: none"> <li>• Coolkeeragh 275kV Redevelopment</li> </ul>



	<ul style="list-style-type: none"> <li>• Tandragee 275kV Redevelopment</li> <li>• Kells 275kV Redevelopment</li> </ul> <p>Commence the progression of procurement and award of contract with the substation design consultant</p>				
<b>Key Benefits</b>	The driver for this project is security of supply				
<b>Strategic Theme</b>	<p><b>Whole system collaboration and coordination with 3rd parties, and NIE Networks across its various roles as a TO, DNO and DSO</b></p> <p>SONI was engaged in a risk assessment, prepared in collaboration with NIE Networks as Transmission Owner, in order to provide further information on the project need. SONI will use that information in order to progress the project and address issues in order to enhance the Transmission System and continue collaboration and coordination of activities with NIE Networks.</p>				
<b>Engagement</b>	<p>SONI is engaged with NIE Networks as a key stakeholder given their role as Transmission Owner with regards to these projects. SONI will continue to engage with NIE Networks in the development of the programme of activities across the substations and coordinate activities to ensure the safety of others is a key priority. SONI will also be engaging with other affected parties such as Coolkeeragh ESB and parties hoping to connect at these substations.</p> <p>SONI will also be engaged with the UR in our monthly meetings where we provide updates on our projects to the UR and any mitigating actions that we may be required to take.</p>				
<b>Performance Measure</b>	Procurement and award of contract with substation design consultant				
<b>Timescale</b>	Commence from January 2023				
<b>SONI Outcome</b>	<table border="1"> <tr> <td><b>Decarbonisation</b></td> <td><b>Grid Security</b></td> <td>System Wide Costs</td> <td><b>Stakeholder Satisfaction</b></td> </tr> </table>	<b>Decarbonisation</b>	<b>Grid Security</b>	System Wide Costs	<b>Stakeholder Satisfaction</b>
<b>Decarbonisation</b>	<b>Grid Security</b>	System Wide Costs	<b>Stakeholder Satisfaction</b>		

## Castlereagh - Rosebank

Deliverable	FWP23-25: Castlereagh – Rosebank			
Description of Activities	<p>This line is not currently in service however the condition of the assets requires that action be taken to either refurbish the line or remove it. SONI are assessing whether the line is needed in the long term.</p> <p>During the period 21/22, SONI has been engaged with residents and prepared a draft Options Report.</p> <p>SONI will be commencing stakeholder engagement in October 2022 and preparing a functional specification in November 2022.</p>			
Key Benefits	Improved grid security and stakeholder satisfaction.			
Strategic Theme	<p><b>A culture of effective engagement and collaboration</b> SONI has been engaged with residents and other key stakeholders and will continue this to ensure the best outcome for all is progressed.</p> <p>Ultimately the main driver is to ensure that appropriate action is taken to ensure the issue is addressed appropriately and as such engagement is a key role, to listen to stakeholders and partners views and use that information to ensure the best outcome for all.</p> <p>This will result in SONI working with others to develop and improve the Transmission System.</p>			
Engagement	<p>SONI has been engaged with residents over the period and will continue our engagement activities. How SONI uses engagement is detailed further in our Appendix: SONI Stakeholder Engagement.</p> <p>SONI will also be engaged with the UR through our regular monthly working meetings where we provide updates and will keep them informed as to the progress of the TNPP Submission.</p>			
Performance Measure	Preparation of Functional Specification			
Timescale	Part 1 Stakeholder engagement – October 22 Functional Specification – November 22			
SONI Outcome	<b>Decarbonisation</b>	<b>Grid Security</b>	System Wide Costs	<b>Stakeholder Satisfaction</b>

## Delivery Plan for NI Infrastructure Projects

Deliverable	<b>FWP23-26: Delivery Plan for NI Infrastructure Projects</b>
<b>Description of Activities</b>	<p>Development of a delivery plan for all Transmission Reinforcement Projects and communicate externally.</p> <p>In light of recent developments such as the NI Energy Strategy publication, Path to Net Zero Action Plan and the revised target of 80% by 2030, SONI considers a prudent activity over the next period is to use the Transmission Development Plan for Northern Ireland Joint Working Group as a forum to discuss the delivery plan for system planning projects in order to further develop these plans in a holistic approach with NIE Networks and agree a plan together.</p> <p><b>Key Actions &amp; Deliverables</b></p> <ul style="list-style-type: none"> <li>• Transmission Development Plan for Northern Ireland Joint Working Group to be used as a conduit for discussion and agreement of project plan with NIE Networks</li> <li>• Formalised project plan to be developed and implemented</li> <li>• Communicated Externally</li> </ul>
<b>Key Benefits</b>	<p>Transparent plan in place for all NI Infrastructure Projects and increased stakeholder confidence that SONI are reviewing our delivery plan in light of the NI Energy Strategy and Security of Supply.</p>
<b>Strategic Theme</b>	<p><b>A culture of effective engagement and collaboration</b>  <b>Whole system collaboration and coordination with 3rd parties, and NIE Networks across its various roles as a TO, DNO and DSO</b>  <b>A culture of organisational learning, accountability and planning that supports SONI agility and responsiveness in meeting policy, regulatory and market development</b></p> <p>The important themes for this project are around engagement to develop the Transmission System by having a fully reviewed plan in light of the changes with the evolving NI Energy Strategy Action Plan and Security of Supply.</p> <p>SONI will collaborate with NIE Networks through the joint working group to discuss the needs of the electricity transmission system, challenge our ways of working and revise the delivery plan to provide an accurate and transparent update to stakeholders.</p>
<b>Engagement</b>	<p>The Transmission Development Plan for Northern Ireland joint working group with NIE Networks will be used to facilitate discussion with our colleagues at NIE Networks on the plan out to 2030 for all Northern Ireland infrastructure projects.</p> <p>This will include looking at our ways of working, challenging our timeframes for project delivery and agreement on a final delivery plan which will be fully aligned with NIE Networks.</p>
<b>Performance Measure</b>	<p>Timely development of delivery plan and awareness provided to stakeholders.</p>

<b>Timescale</b>	September 2023			
<b>SONI Outcome</b>	<b>Decarbonisation</b>	<b>Grid Security</b>	System Wide Costs	<b>Stakeholder Satisfaction</b>