

SONI Annual Performance Report 2022 - 23

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Introduction

As part of its Final Determination of the SONI Price Control 2020-25 the Utility Regulator (UR) introduced an Evaluative Performance Framework¹, with the aim of

- SONI taking an open, flexible and collaborative approach to responding to stakeholders and considering new innovative ideas.
- SONI developing greater transparency and accountability to its operations in both its planning and performance reporting.
- Bringing additional skills, insights and knowledge to the UR's review of SONI's performance using independent experts, and
- Encouraging action from SONI that contributes to the positive outcomes for NI Consumers (SONI Outcomes)

The framework includes the publication of a Forward Work Plan, a stakeholder discussion on the plan, an interim performance update and this annual performance report. The UR has established an expert independent panel to assess these documents and will use the output from the process to inform its assessment of SONI's performance.

SONI's Performance Report 2022-23 is a backward-looking assessment of how SONI has delivered against the Forward Work Plan 2022-23². This plan covers the period from October 2022 to September 2023. The UR has asked that we structure our plan around four roles that we deliver. Therefore, this Performance Report 2022-2023 is supplemented by six appendices:

- Appendix 1: SONI Deliverables Role 1 System Operation and Adequacy
- Appendix 2: SONI Deliverables Role 2 Independent Expert
- Appendix 3: SONI Deliverables Role 3 System Planning
- Appendix 4: SONI Deliverables Role 4 Commercial Interface
- Appendix 5: Performance Measures
- Appendix 6: SONI Self-Assessment

The diagram below highlights the key areas of focus for each role over the period.

¹ [epf-guidance.pdf \(ureg.gov.uk\)](https://www.ureg.gov.uk/epf-guidance.pdf)

² [SONI Forward Work Plan for 2022/23](#)

Role 1



System Operations

- FWP23-01: Future Arrangements System Services (FASS) ✓
- FWP23-02: Scheduling and Dispatch ✓
- FWP23-04: Operational Roadmap to 2030 ✓
- FWP23-05: TSO Demand Side Strategy ✓
- FWP23-05: Control Centre Tools ✓
- FWP23-11: Control Centre of the Future ✓
- FWP013: End of Life Assets - EMS Upgrade ✓



KEY

Areas of Focus

Role 2



Independent Expert

- FWP018: Shaping Our Electricity Future Version 1.1 ✓
- FWP23-12: Stakeholder Needs Assessment ✓
- FWP23-14: Support the NI Energy Strategy ✓
- FWP019: Annual Innovation Report ✓

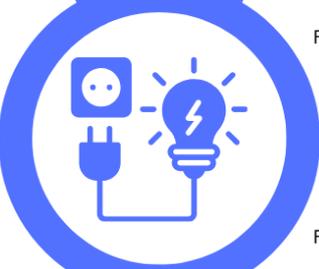
Role 3



System Planning

- FWP027: Energising Belfast ✓
- FWP034: Mid-Antrim Upgrade ✓
- FWP026: North South Interconnector ✓
- Progression of Several TNPP Submissions to progress Pre Construction activities ✓

Role 4



Commercial Interface

- FWP001: Low Carbon Inertia Services ✓
- FWP23-29: Transmission Connection Charging Methodology Statement (TCCMS) Update ✓
- FWP23-28: Connection Offer Applications ✓
- FWP23-27: Connection of Customer Projects ✓

Figure 1 Key Strategic Areas of Focus

One significant area that SONI have demonstrated great adaptability on was **Security of Supply**. In addition to the work that we foresaw in this area, SONI has delivered considerable additional value in our role as trusted advisor to DfE and UR around Security of Supply. To assist them in their statutory roles, SONI undertook considerable modelling to assess the implications of delays to new generation and the impact of operational constraints within their permits. We investigated all potential solutions to the scenarios identified that are within our licensed activities. This work included undertaking a procurement exercise to explore the potential to secure additional short term sources of system services at economic cost and initiating technical studies to inform work on possible medium term solutions.

Assessment Criteria

SONI's performance will be assessed by an independent panel and the UR on the following criteria:

01	Delivery	The extent to which SONI deliver against: (a) the specified deliverables and/or performance commitments from its Forward Plan, and (b) the specified price control outputs (or deliverables) set by the Utility Regulator for new initiatives, and the justification for this delivery
02	Stakeholder Satisfaction	The extent to which stakeholders are satisfied with the performance of SONI, taking its performance in 2019/20, as supplemented by its Forward Plan, as its Baseline
03	Adaptability	The extent to which SONI has shown successful adaptation and agility, to the benefit of the SONI outcomes, in responding to opportunities not anticipated in the Forward plan

Figure 2 Assessment Criteria

SONI has applied the above criteria to the SONI Performance Report 2022-2023 and supplementing appendices³.

³ How SONI has performed against this criteria is covered in detail in Appendix 6: SONI Self-Assessment.

Overview of Roles

The Forward Work Plan was presented across four TSO roles as demonstrated in the diagram below.

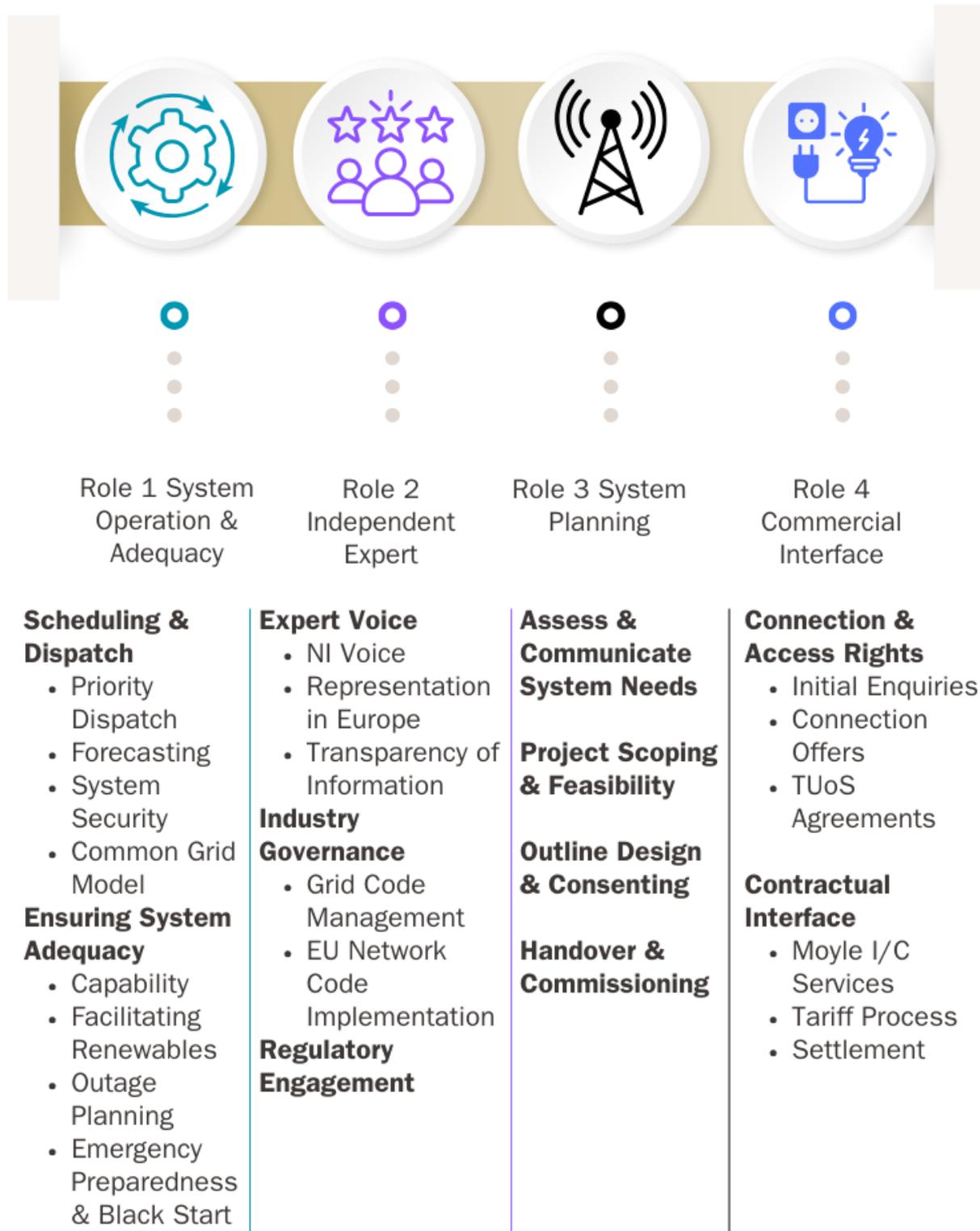


Figure 3 Overview of Roles

Role 1 System Operation and Adequacy

Overview of Role

Role 1 captures the associated deliverables linked to System Operation and Ensuring System Adequacy.

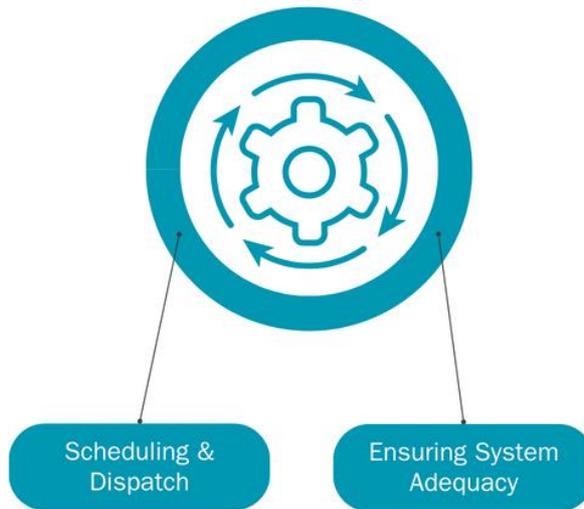


Figure 4 Role 1 Overview

Role 1 primarily relates to our operational and market related activities including scheduling and dispatch, future arrangements for system services, emergency preparedness and contributing to security of supply. Our work to facilitate of renewable generation is also covered here and is key in the context of the Northern Ireland Energy Strategy. This role is fully aligned with the requirements under the Single Electricity Market (SEM).

Summary of Deliverables

The table below provides a full list of the projects and deliverables associated with Role 1 System Operation and Adequacy⁴.

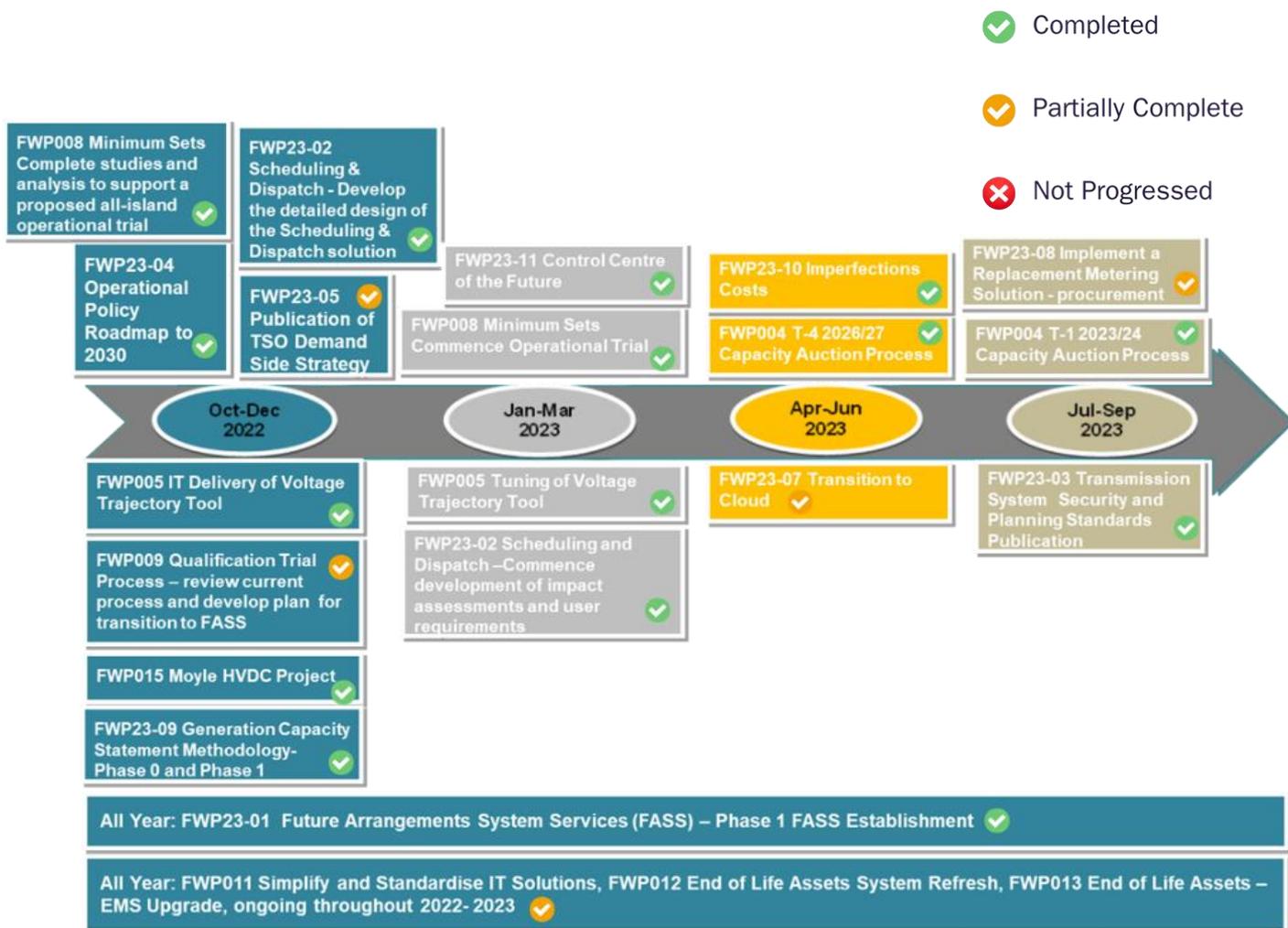


Figure 5 Summary of Role 1 Deliverables

⁴ Additional detail on all projects is provided in the corresponding appendices.

Role 1 Deliverables



Figure 6 Role 1 Pie Chart

26 Milestones:

- **18** Completed ✓
- **8** Partially Completed ✓

Of the 8 remaining milestones which are not complete:

- 5 are **SONI-related delays**
- 2 were delayed for reasons **outside of SONI's control.**
- 1 is postponed to secure **an improved outcome for consumers**

Table 1 Role 1 Deliverables

PROJECT ID	PROJECT NAME	MILESTONE	STATUS
FWP23-02	Scheduling & Dispatch	Develop the detailed design of the Scheduling & Dispatch solution, including requirements for the treatment of new non-priority dispatch renewable generators in the SEM	✓
FWP23-04	Operational Roadmap To 2030	Delivery of Publication	✓
FWP23-05	TSO Demand Side Strategy	Delivery of Publication	✓
FWP005	Control Centre Tools	Voltage Trajectory Tool (VTT) Go Live	✓
FWP008	Minimum Number of Sets	Complete studies and analysis to support a proposed all-island operational trial for operation with a minimum of 7 large synchronous units / 20,000 MWs inertia floor	✓
FWP009	Qualification Trial Process	Review the current QTP Process and develop a plan for the transition to the System Services Future Arrangements	✓
FWP011	Simplify & Standardise IT Solutions	Power System Analysis Tool	✓
FWP015	Moyle HVDC Project - Telecoms	Delivery of activities detailed	✓
FWP23-09	Generation capacity Methodology Statement	Completion Phase 0 and Phase 1	✓
FWP23-02	Scheduling & Dispatch	Develop impact assessments and detailed user requirements based on agreed / approved detailed design;	✓
FWP005	Control Centre Tools	Tuning	✓
FWP23-11	Control Centre of The Future	Development of a delivery plan to 2030	✓
FWP008	Minimum Number of Sets	Commence an the operational trial of this interim policy with of a minimum of 7 large synchronous units / 20,000MW's inertia floor	✓

PROJECT ID	PROJECT NAME	MILESTONE	STATUS
FWP23-10	Imperfection Costs	Annual review the list of Transmission Constraint Groups (TCGs)	
FWP23-10	Imperfection Costs	Improved modelling	
FWP004	Capacity Auctions	T-4 Auction	
FWP23-07	Transition to Cloud	Delivery of all activities	
FWP23-03	TSSPS Refresh	Delivery of Publication	
FWP004	Capacity Auctions	T-1 Auction	
FWP011	Simplify & Standardise IT Solutions	Capacity Market Platform	
FWP23-01	FASS	Progression of Phase 1	
FWP011	Simplify & Standardise IT Solutions	Application Rationalisation	
FWP012	End of Life Assets - System Refresh	Delivery of all activities	
FWP013	End of Life Assets- EMS Upgrade	Delivery of all activities	
FWP23-08	Implement a Replacement Energy Metering Solution	Procurement and supplier selection	
FWP009	Qualification Trial Process	Conduct Annual QTP Process to facilitate the integration of new technologies	

FWP009: Qualification Trial Process

Due to a **SONI-Related delay**. The Qualification Trial Process is still in progress as it kicked off in May and is expected to take between 12-18 months to complete. The trial is planned to take place during 2024 (this is dependent on there being a successful outcome to the procurement process i.e. that potential participants bid proposals into the process).

FWP011: Simplify & Standardise IT Solutions

Due to a **SONI-Related Delay**. While some **Application rationalisation** has taken place additional work will continue into 2023-24.

FWP012: End of Life Assets - System Refresh

All elements of the work planned for FY23 have commenced and most of them have concluded during that year. Some were not concluded and have rolled in to FY24, due to a **SONI-Related delay**.

Resources were prioritised onto a number of key operational matters to support business activities. As a result a number of the planned deliverables were rescheduled.

FWP013: End of Life Assets- EMS Upgrade

The completion of the milestones within this project were delayed for reasons **outside of SONI's control**. The primary reason for the delay on this work was due to delays on the delivery of critical network hardware equipment (all of which has now been delivered).

FWP23-03: Transmission System Security and Planning Standards (TSSPS) Refresh

The full review and update of the TSSPS is not yet complete due to a **SONI-related delay**. An urgent need to update voltage requirements meant this area was prioritised initially and a short consultation and update to the TSSPS was carried out in Q2 2023. The wider review of the TSSPS is progressing, however, the process had a number of dependencies including:

- Engagement with DfE on the connection arrangements for offshore generation
- Consider recently published updates to Engineering Recommendations.
- Align the update of some aspects of the TSSPS with NIE Networks, who are currently reviewing the DSSPS.

FWP23-07: Transition to Cloud

The design work associated with this transition was concluded before June 2023. In most cases the cloud-based capability has been established but due to a **SONI-related delay**, SONI are still working through migrating the process and data associated with these solutions the respective cloud solutions.

FWP23-05: TSO Demand Side Strategy

The development of the strategy was delayed in order to enable further engagement with the relevant internal and external stakeholders, incorporating the feedback, and enabling the process for approving the document, to create an **improved outcome for consumers** by having a more considered and holistic approach to considering the potential roles and required changes for demand response meeting TSO requirements.

What was intended by the strategy, and the document to publish the strategy, has been reframed a number of times based on this feedback. Since this is an all-island initiative, it also needed to take into account the Energy Demand Strategy from the CRU in Ireland, where a call for evidence was published in June 2023. The drafting of the call for input document which is the primary output of this milestone is largely complete, with the final review and approval step yet to be completed prior to publication and completion of this milestone.

FWP23-08: Implement a Replacement Energy Metering Solution

The first stage, Analysis and Solution Specification, Solution Tender Development was completed in FY23. However, the second stage, Supplier Selection, was complete as of **December 2023**. The delay was **outside of SONI's control** and the result of the scale and complexity of the tender requirements, and the time necessary firstly to shortlist candidate responses and then to evaluate these thoroughly in order to arrive at the decision as to the successful vendor.

SONI ensured that a robust procurement process was undertaken. The duration required for an evaluation process is dependent on the volume of responses and the complexity of each, therefore on this occasion additional time was needed to complete this process, due to a large number of returns

Role 2 Independent Expert

Overview of Role

The Independent Expert role covers our engagement activities and involves providing an expert voice for stakeholders and actively listening to their views and concerns. This role also includes activities such as our Annual Innovation Report, preparations for the next SONI Price Control, a Stakeholder Management Strategy and other publications.

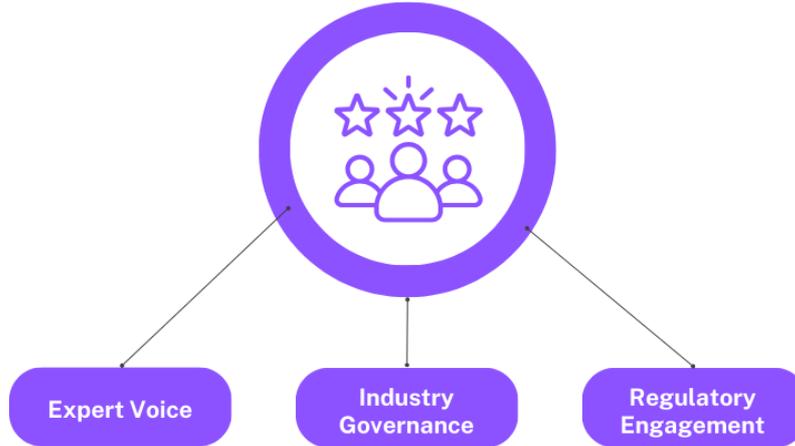


Figure 7 Role 2 Overview

Summary of Deliverables

The table below provides a full list of the projects and deliverables associated with Role 2 Independent Expert.

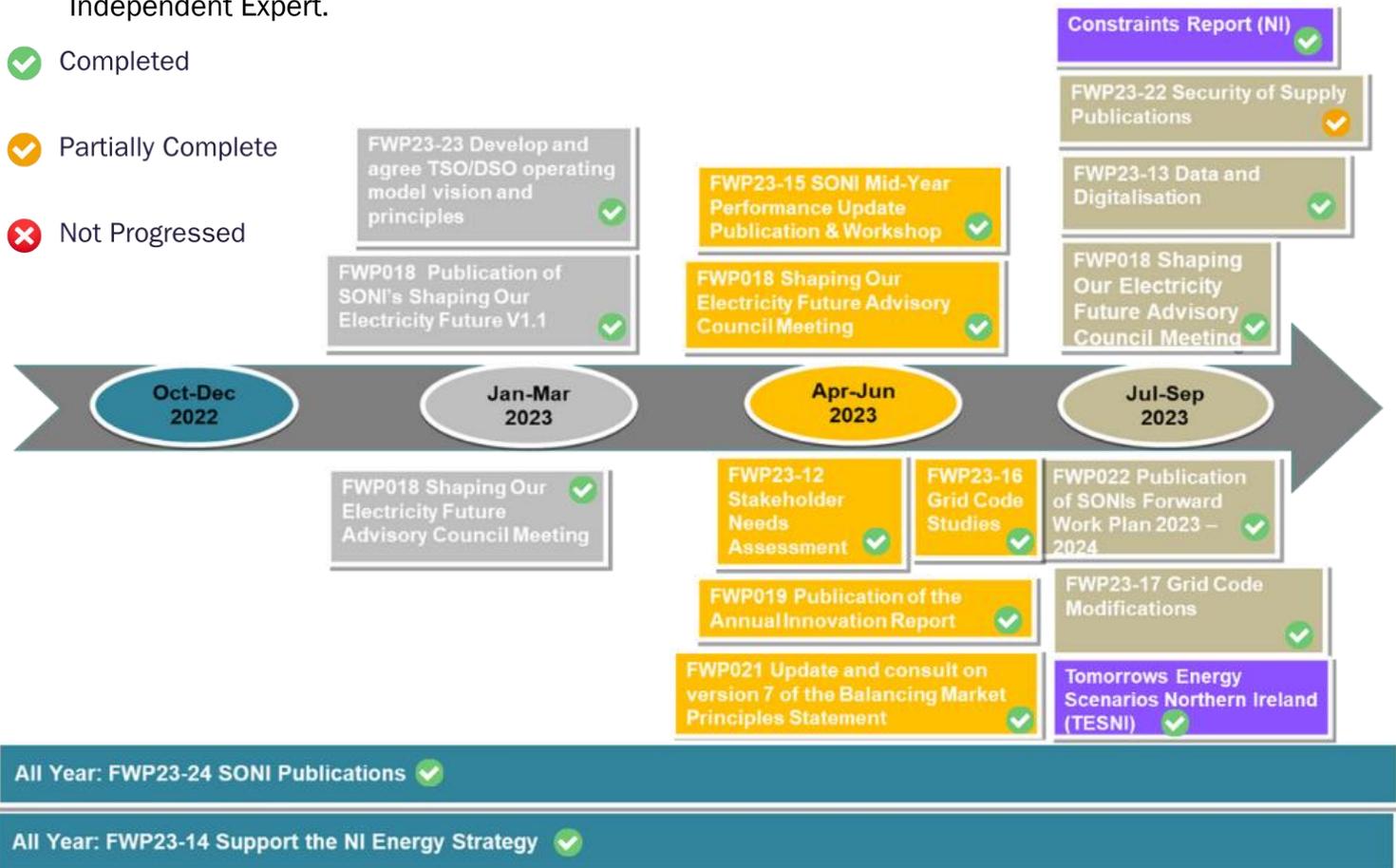
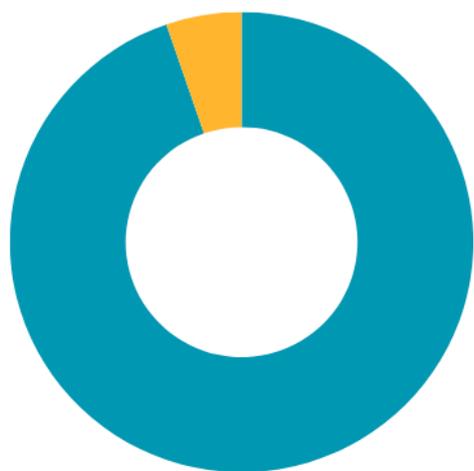


Figure 8 Summary of Role 2 Deliverables

Role 2 Deliverables



19 Milestones:

- **18** Completed ✓
- **1** Partially Completed ✓

The 1 remaining milestone which is not complete is a **delay outside of SONI's Control**

SONI has completed 2 Additional Deliverables in this space.

Figure 9 Role 2 Pie Chart

Table 2 Role 2 Deliverables

PROJECT ID	PROJECT NAME	MILESTONE	STATUS
FWP018	SOEF	Advisory council	✓
FWP018	SOEF	SOEF V1.1 Publication	✓
FWP23-23	SONI TSO-DSO Operating Model	Develop and agree the TSO - DSO operating model vision and principles	✓
FWO018	SOEF	Advisory council	✓
FWP23-12	Stakeholder Needs Assessment	Stakeholder Engagement and the timely provision of the stakeholder needs assessment.	✓
FWP019	Annual Innovation Report	Publication	✓
FWP23-15	SONI Mid Year Performance Review	Publication of short report	✓
FWP23-15	SONI Mid Year Performance Review	Stakeholder workshop	✓
FWP021	Balancing Market Principles Statement	Version 7 publication	✓
FWP23-16	Grid Code Studies	Providing outcome of the studies considering minimum generation parameters for Grid Code to Grid Code Review Panel and UR	✓
FWO018	SOEF	Advisory council	✓

PROJECT ID	PROJECT NAME	MILESTONE	STATUS
FWP23-13	Data & Digitalisation	Agree open data sharing with NIE Networks	
FWP23-14	Support the NI Energy Strategy	Support 5 identified actions in DfE's Path to Net Zero Action Plan Active participation in relevant Working Groups associated with Energy Strategy	
FWP022	SONI Forward Work Plan 2023/24	Publication FY24 FWP	
FWP23-17	Grid Code Modifications	Battery Grid Code Modifications RoCoF Modifications	
FWP23-22	Security of Supply Publications	Publications - GCS & Winter Outlook	
FWP23-24	SONI Publications	Publications over the period to include the All-Island Transmission System Performance Report and the Annual Renewable Energy Curtailment and Constraint Report	

FWP23-22: Security of Supply Publications

In September 2023, SONI submitted the Generation Capacity Statement (GCS) for 2023 – 2032 for approval in line with Condition 35 of our TSO Licence. SONI continues to engage with the UR. The GCS cannot be published until SONI received approval from the UR. Therefore, this is a delay **outside of SONI's control**.

Additional Deliverables

As initially highlighted in the Mid-Year Performance Report⁵, in addition to the extensive suite of projects included in the 2022/23 Forward Work Plan, SONI has been adaptable and has initiated two additional projects based on feedback from stakeholders.

Tomorrows Energy Scenarios Northern Ireland (TESNI)

One of our roles is to plan the development of the electricity transmission grid to meet the future needs of society. Key to this process is considering a range of possible ways that energy usage may change in the future and the impact that this change will have on the electricity grid - we call this scenario planning.

In our Tomorrow's Energy Scenarios (TESNI) publication we will outline credible pathways for Northern Ireland's clean energy transition with specific focus on what this means for the electricity transmission system from 2030 to 2050. This is framed against a backdrop of ambitious targets for decarbonisation of the energy sector and a large increase in electricity generation from renewable sources by 2030. It is planned that this will build on the work already undertaken for 'Shaping our Electricity Future'.

In 2023, SONI undertook:

1. Model development.
2. Pre-consultation engagement with targeted stakeholder groups – government, industry, and academia.
3. Incorporated feedback and published the final consultation report in early October.

⁵ [SONI-Mid-Year-Performance-Update-2022-23.pdf](#)

Constraints Report (NI)

Stakeholder feedback requested a specific Northern Ireland Constraints Report. SONI is producing such a report in order to examine the total dispatch down of renewable generation against a number of future power system scenarios. The scenarios include increasing volumes of renewable generators, network upgrades and changes to operational policies over time. Completion of the studies and publishing of the report was completed in early October 2023.

Role 3 System Planning

Overview of Role

SONI is independent of interests in the generation and supply of electricity, and therefore we are responsible for planning the configuration of the transmission system and obtaining all of the consents necessary for it. Role 3 covers SONI's activities in the System Planning area, our approach is set out in our three-part Grid Development Process.



Figure 10 SONI's Three-Part Grid Development Process

Coordination with NIE Networks underpins this three-part Grid Development Process. We work every day with NIE Networks who own, build and maintain the grid transmission assets. We engage with NIE Networks in relation to the functional specification and design specification documents and on any associated options reports.

As demand and generation change, or as the transmission network becomes more interconnected with neighbouring transmission networks⁶, the flow of electrical energy throughout the transmission network changes. To accommodate these changes in power flows it is necessary to modify or strengthen the transmission network to ensure performance and reliability levels are upheld. SONI and NIE Networks are obliged to develop an economic, efficient, and coordinated transmission system⁷. NIE Networks is responsible for maintaining the transmission network in Northern Ireland, including replacing assets that have reached the end of their useful life.

⁶ The European electric power transmission networks are interconnected, so as to be able to transmit energy from one jurisdiction to others.

⁷ The Electricity (Northern Ireland) Order 1992, Article 12

Summary of Deliverables

The table below provides a full list of the projects and deliverables associated with Role 3 System Planning.

- ✔ Completed
- 🟡 Partially Complete
- ✘ Not Progressed

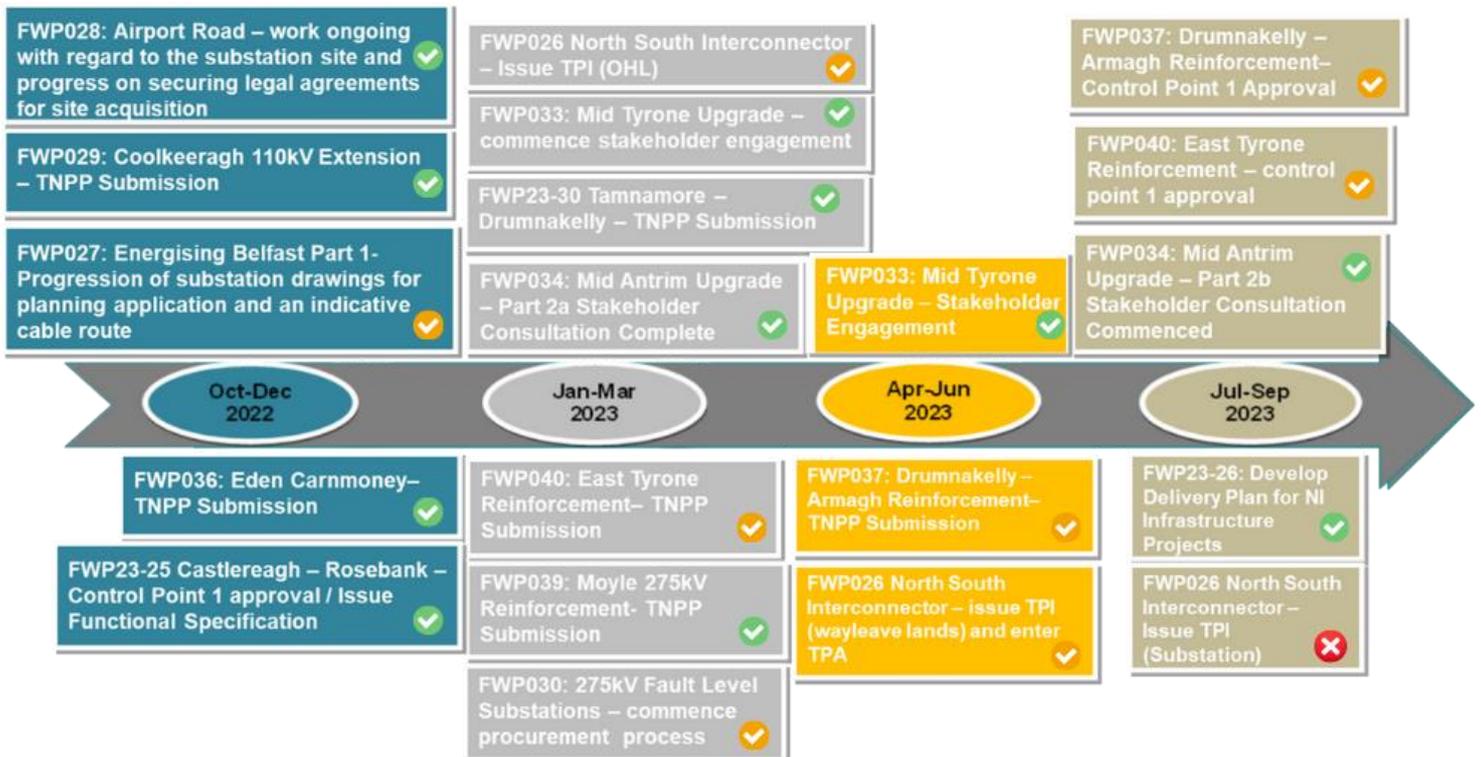


Figure 11 Summary of Role 3 Deliverables

Role 3 Deliverables



23 Milestones:

- **13** Completed ✓
- **7** Partially Completed ✓
- **3** Not Progressed yet ✗

Of the 10 remaining milestones which are not complete:

- 7 are delayed for reasons **outside of SONI's control**
- 3 are postponed to secure an **improved outcome for consumers**

Figure 12 Role 3 Pie Chart

Table 3 Role 3 Deliverables

PROJECT ID	PROJECT NAME	MILESTONE	STATUS
FWP027	Energising Belfast Part 1	Review and approve NIE Networks Design specification for the Castlereagh Tx4 works	✓
FWP027	Energising Belfast Part 1	Review and approve NIE Networks Design Specification for the works at Finaghy Main	✓
FWP027	Energising Belfast Part 1	Partial TPI and TPA	✗
FWP036	Eden Carnmoney	TNPP Submission	✓
FWP028	Airport Road	Commence compulsory Landowner Agreements to finalise site and cable routing	✓
FWP029	Coolkeeragh 110kV extension	TNPP Submission	✓
FWP23-25	Castlereagh - Rosebank	Timely issue of functional specification.	✓
FWP026	North South I/C	Issue Transmission Project Instruction (OHL)	✓
FWP034	Mid Antrim upgrade	Part 2a Stakeholder Consultation	✓
FWP040	East Tyrone Reinforcement	TNPP Submission	✓
FWP033	Mid Tyrone Upgrade	Stakeholder Engagement	✓

PROJECT ID	PROJECT NAME	MILESTONE	STATUS
FWP039	Moyle 275kV Reinforcement	TNPP Submission	
FWP029	Coolkeeragh 110kV extension	Progress to part 2 of the 3 part process - Control point 1 approval	
FWP030	275kV Substation Fault Level Solutions	Commence progression of procurement and award of contract with substation design consultant	
FWP23-30	Tamnamore - Drumnakelly Restrung	TNPP Submission	
FWP026	North South I/C	Issue Transmission Project Instruction (wayleave lands)	
FWP026	North South I/C	SONI to issue enter into a TPA	
FWP037	Drumnakelly - Armagh Reinforcement	TNPP Submission	
FWP026	North South I/C	Issue Transmission Project Instruction (substation)	
FWP034	Mid Antrim upgrade	Part 2b Stakeholder Consultation	
FWP037	Drumnakelly - Armagh Reinforcement	Control Point 1 Approval	
FWP040	East Tyrone Reinforcement	Control Point 1 Approval	
FWP23-26	Delivery Plan for NI Infrastructure Projects	Development of a delivery plan for all NI Infrastructure Projects and communicate externally	

FWP040: East Tyrone Reinforcement

The original date of February 2023 was based on progressing the project into Part 2 with a study area around the affected substation and has been **postponed to secure an improved outcome for consumers**. During stakeholder engagement with elected representatives on this approach the feedback was that SONI, prior to submission of the TNPP should engage with the landowner impacted by the preferred option rather than leaving this uncertain as a study area. This necessitated preparation of outline drawings and an associated environmental report by our consultant which is currently being progressed and expected imminently.

FWP037: Drumnakelly - Armagh Reinforcement

The Drumnakelly and Armagh Reinforcement project is being progressed as a joint project between SONI and NIE Networks. Following completion of an environmental study in 2022 to appraise the shortlisted options, SONI and NIE Networks agreed an update of the project need, analysis and the scope of the options was required to account for the findings of the environmental assessment. These works were carried out in 2023. NIE Networks completed their updates in August 2023. SONI are reviewing these updates, finalising the documents in preparation for Part 1 Stakeholder Engagement.

SONI plans to carry out this Stakeholder Engagement from January 2024. In September 2023 SONI engaged NIE Networks to obtain their preconstruction cost estimates. These works are still being completed. Once obtained they will form part of the TNPP submission.

The update of the project documentation has led to the deliverables set in Forward Work Plan 2022/2023 not being achievable. However, SONI and NIE Networks have completed a robust update of this report to allow it to be progressed for the new date for TNPP submission, therefore this project has been postponed for reasons **Outside of SONI's control**.

FWP030: 275kV Substation Fault Level Solutions

The procurement process has now commenced in respect of Kells substation. The reason for the delay was related to the need to engage further with NIE Networks on the scope of works more generally for the 275kV substations identified as having potential fault level issues and was therefore **postponed to secure an improved outcome for consumers**.

SONI expect to agree option appraisal scope of works required with NIE Networks for Coolkeeragh and Magherafelt by September 2024.

FWP027: Energising Belfast Part 1

The delivery of the milestone for issuing a 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 was postponed due to a delay **Outside of SONI's control**.

There was a delay in receiving the design specifications, therefore SONI has been unable to progress the last of the three milestones related to this project.

FWP026: North South I/C

The date for issuing the Transmission Project Instruction (TPI) to NIE Networks for construction of Overhead line that have easements secured, and the 3 following milestones, have been postponed due to a delay **Outside of SONI's control**.

SONI continues to engage extensively with landowners along the route of the new overhead line and is making good progress in securing landowner agreements, however additional time is required in order to obtain the consents required and the Department for Economy are continuing to complete the Necessary Wayleave Process for outstanding landowners.

Role 4 Commercial Interface

Overview of Role

Role 4 covers SONI’s activities as a Commercial Interface. Role 4 primarily focuses on our interactions with customers through the Connection Offer Process, engaging with NIE Networks through associated Construction Offers and Preparation of Connection Agreements and Transmission Use of System Agreements. It also looks at the Moyle Interconnector and the contractual arrangements we facilitate for connectees.

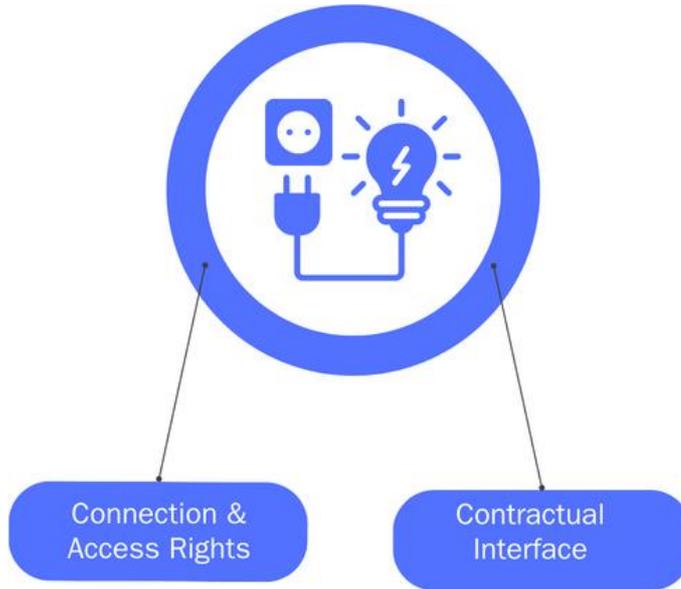


Figure 13 Role 4 Overview

Summary of Deliverables

- ✔ Completed
- ✔ Partially Complete
- ✘ Not Progressed

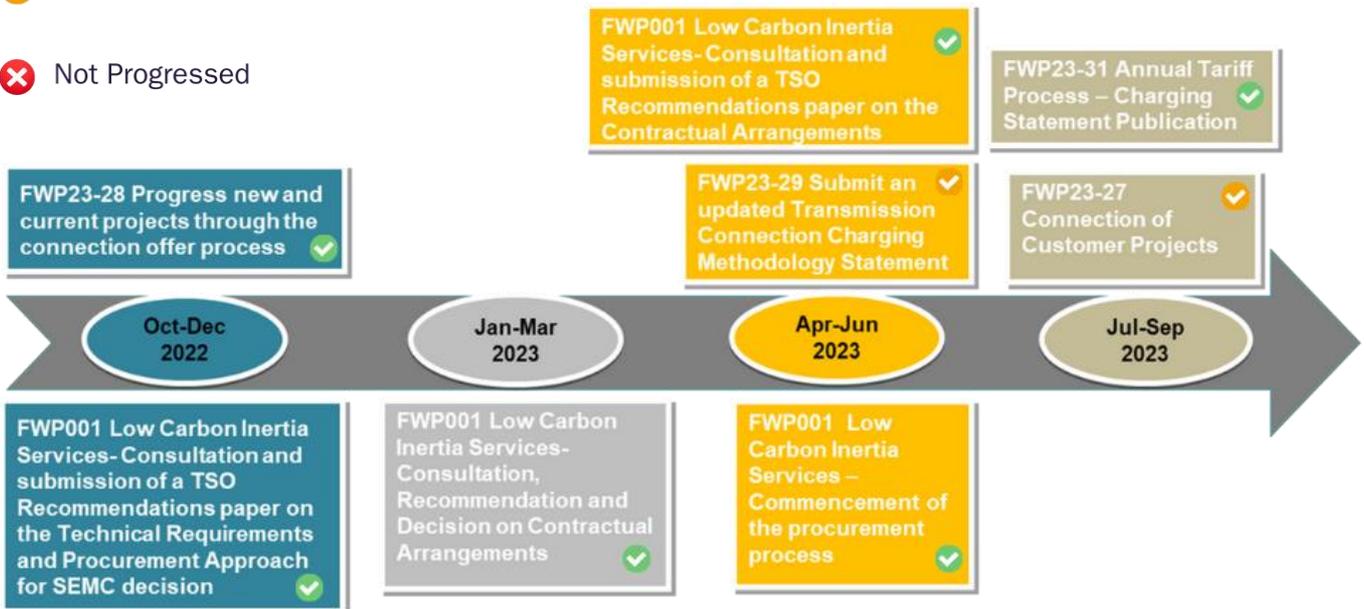


Figure 14 Role 4 Timeline

Role 4 Deliverables



8 Milestones:

- 5 Completed ✓
- 3 Partially Completed 🟡

Of the 3 remaining milestones which are not complete;

- 2 were delayed for reasons **outside of SONI's control**
- 1 is postponed to secure an **improved outcome for consumers**

Figure 15 Role 4 Pie Chart

Table 4 Role 4 Deliverables

PROJECT ID	PROJECT NAME	MILESTONE	STATUS
FWP001	Commercial Arrangements for Low Carbon Inertia	Consultation and submission of a TSO Recommendations paper on the Technical Requirements and Procurement Approach for SEMC decision	✓
FWP001	Commercial Arrangements for Low Carbon Inertia	Consultation and submission of a TSO Recommendations paper on the Contractual Arrangements	✓
FWP23-29	TCCMS Update	Consult on and publish an updated Transmission Connection Charging Methodology Statement	🟡
FWP001	Commercial Arrangements for Low Carbon Inertia	Commencement of the procurement process	✓
FWP23-27	Connection of Customer Projects (two projects)	Execution of associated Connection Agreements and GTUoS Agreements Energisation of Customer Connection	🟡
FWP23-27	Connection of Customer Projects (two projects)	Execution of associated Connection Agreements and GTUoS Agreements Energisation of Customer Connection	🟡
FWP23-28	Connection Offer Applications	Progress new and current connection applications through the connection offer process	✓
FWP23-31	Annual Tariff Process	Commence work under Condition 30 of the TSO Licence, preparation to publish a Charging Statement each year, to be approved by the UR.	✓

FWP23-29 TCCMS Update

SONI undertook a full internal review of all sections of the TCCMS to identify what changes would be needed to reflect support the NI Energy Strategy.

This project was scoped out in summer of 2022. At that point we were unaware of the UR and DfEs plans to consult on the Call for Evidence on Electricity Connection Policy in NI , which was indicated in the UR Draft forward work plan in December 2022.

Based on the scale of the policy review, SONI considered it prudent to reduce the scale of the TCCMS review until the policy changes were better understood (in order to avoid potential nugatory work) and therefore secure an **improved outcome for consumers**.

FWP23-27: Connection of Customer Projects (two projects)

SONI is liaising closely with the customer to facilitate the connection of two new Gas Turbines, these will replace existing Coal fired generators and therefore are very beneficial to consumers. The connection of these turbines is a complex project involving multiple parties including the connecting customer and its contractors, gas contractors and NIE Networks.

The customer has experienced a number of challenges relating to these connections resulting in declaring a number of updated dates for energisation These are discussed below.

It is clear that these changes are **outside of SONI's control**. SONI has continued to work closely with the customer and has regularly updated the UR and DfE on progress of these connections.

Benefit of Deliverables

These deliverables have contributed towards the four SONI outcomes of decarbonisation, grid security, system wide costs and stakeholder satisfaction.



Decarbonisation

The activities carried out over this period collectively combine to move Northern Ireland towards its decarbonisation targets. Examples include:

- The commercial arrangements and level playing field for essential new technologies on the system which will facilitate an increase in electricity from renewable sources, have been further developed through our Future Arrangements for System Services project. Our work on Scheduling and Dispatch will have helped to ensure that we are on the path to enable the requirements set out in the Clean Energy Package. These projects, along with other **Key Areas of Focus**, such as Control Centre Tools and the Operational Roadmap to 2030 are important to set us on course to achieve the targets of 80% electricity from renewable sources by 2030.
- SONI has progressed projects which support the NI Energy Strategy and the update to Shaping our Electricity Future has set out a road map towards Northern Ireland obtaining 80% of its electricity from renewable sources.
- The mitigation of risk around facilitating the connection of increased renewable generation to the Transmission System is integral to allowing a smoother connection offer process and reduces the challenges SONI, NIE Networks and potential developers face during the construction process. Many of the grid development projects progressed within this period are essential to meet our renewable targets. In particular the Mid Antrim Upgrade Project will increase the output of renewable generation. 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.
- In order to achieve targets as set by the Department for the Economy in the Northern Ireland Energy Strategy, we need to make sure that our policies and procedures, in particular in the connection process, remain fit for purpose. The scale of and range of connections applications processed by SONI is significant and we expect that trend to continue.

Grid Security



- Grid Security is important for security of supply for Northern Ireland. Our work to update our IT systems and control centre tools are key to operating a safe, secure and reliable Transmission System. The environment in which we are operating in is increasingly complex and challenging with the amount of electricity sourced from weather dependent non-synchronous sources. SONI is required to be a prudent operator and a number of our activities carried out over this period, including the operational policies we have implemented, will facilitate greater grid security. Our activities under Capacity Auctions and Generation Capacity Statement Methodology

have considered our activities associated with Security of Supply and aided in strengthening the Grid Security outcome.

- Grid Security is important to consumers and our stakeholders. SONI's Shaping Our Electricity Future V1.1 is focused on continuing grid security for future generations. The Grid Code Studies and any subsequent modifications are designed to ensure grid security with an evolving generation portfolio.
- Increased interconnection between transmission networks results in a larger energy market. With increased market integration there is greater competition and the potential for prices to be reduced. The Moyle 275kV Reinforcement project will enable higher flows out of Northern Ireland, increasing options for system stability at high levels of renewable generation. In addition, the Energising Belfast project that has progressed, is essential for long term stable and secure supplies of electricity in the greater Belfast area.

System Wide Costs



- System Wide Costs are important for SONI, even more so in the current economic climate. When implemented, the Future Arrangements for System Services will increase competition between providers, ensuring that costs are minimised across all markets. Our work on Scheduling and Dispatch will ensure that we are able to make best use of the technologies available on the grid, putting downward pressure on prices. These initiatives will take more than one year to deliver, but the progress made during 2022/23 has provided a foundation for future years. We will continue to take steps to minimise dispatch balancing costs and will report on the outturn of those when the assessment is completed.
- Our Shaping Our Electricity Future V1.1 has captured the Markets Pillar and provided updated programmes of work which will contribute to this outcome, alongside information published by SONI which supports efficient decision making by third parties.



SONI Service Quality

- Extensive stakeholder engagement took place over this period to inform the development of the Stakeholder Needs Assessment. Over 90 SONI stakeholders were identified across different areas of the organisations and different stakeholder groups and approached to participate in a mixture of in-depth interviews or a quantitative survey.
- The stakeholder research considered areas such as perceptions of SONI, the areas SONI should be prioritising, SONI's strengths and areas which require improvement and views in relation to how SONI engages, which will have significantly contributed to this outcome.
- The deliberative model of engagement adapted during 2a and 2b of the Mid-Antrim Upgrade, was shortlisted as a finalist for the Working in Collaboration category at the Business in the Community NI Awards., which demonstrates the quality of engagement that was undertaken,

- Other engagement activities undertaken over the 2022/23 period, such as the Shaping our Electricity Future Advisory Councils, activities associated with the Mid-Tyrone Upgrade the Mid-Year Performance Report Stakeholder Event, will all have contributed aiding in the quality of services provided to participants in the Northern Ireland electricity system and other stakeholders.

Key Performance Indicators

There are four SONI TSO Outcomes in relation to each role across the Forward Work Plan, being Decarbonisation, Grid Security, System Wide Costs and Stakeholder Satisfaction. We have categorised each performance measure against these four outcomes and provided a brief overview below⁸.



Decarbonisation

The decarbonisation of the electricity system is of great importance to customers and a vital component of the energy transition. The KPIs which fall within this SONI outcome are as follows:

Performance Indicator	Description	2022/23 Target	2022/23 Actual
RES-E (%)	To increase the percentage of electricity from renewable sources in Northern Ireland.	-	-
SNSP (%)	To increase the maximum level of Synchronous Non-Synchronous Penetration (SNSP) that SONI will allow on the system at any one point in time	75%	75%
Renewable Dispatch Down (%)	To keep the average level of curtailment and constraint in Northern Ireland below a certain level.	10%	9.4%

Figure 16 Decarbonisation KPIs

RES-E

Purpose of the Metric

The aim of this performance measure is to maximise penetration of electricity generated by RES sources in line with policy. The NI Climate Change Act aims to achieve 80% renewable electricity by 2030 and net zero carbon emissions by 2050.

Many parties across Northern Ireland impact this metric. SONI's influence on the metric include:

- Dispatching renewable generations
- Increasing SNSP to allow for more dispatch.
- Developing grid and connections
- Increasing market for non-carbon providers of system services

⁸ Further information on these KPI's can be accessed in Appendix 5: Performance Measures

We referenced the Shaping Our Electricity Future Roadmap Version 1.1⁹ in the 2022-23 FWP document in relation to RES-E. This document was published in July 2023 and included a forecast of RES-E out to 2030. This is repeated below for ease of reference.

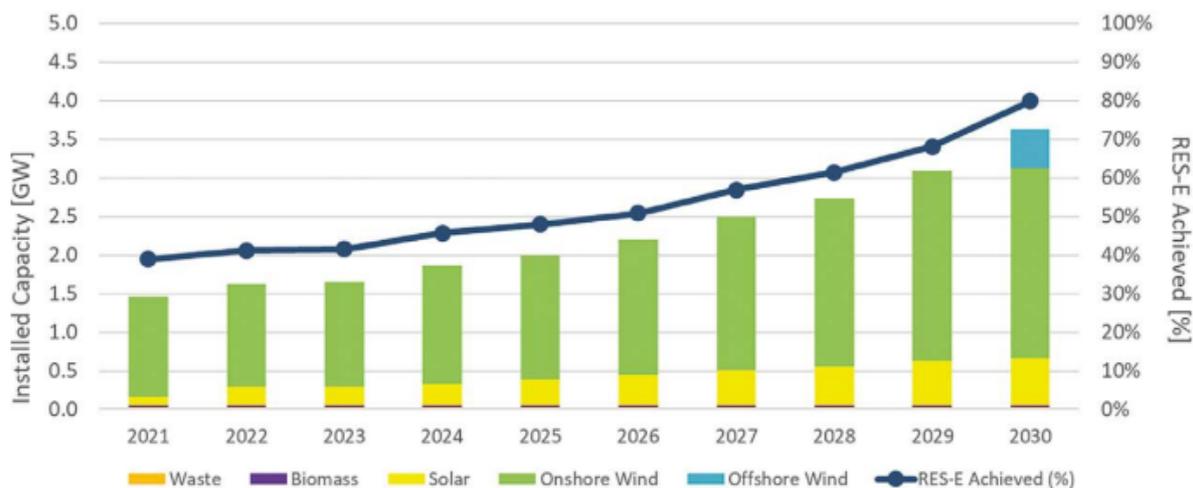


Figure 17 Projection for renewable generation growth and RES-E% levels in Northern Ireland

SNSP

Target for year

In 2022 we successfully concluded our trial of operation with an increase in the SNSP limit from 70% to 75% and this increased limit became operational policy on 31st March 2022. SONI delivered on the target of 75% for 2022/23.

Renewable Dispatch Down

Target for year

Our target for Renewable Dispatch Down for 2022/23 was 10% for wind generation, however, there are a number of factors at play and this target is very challenging.

The latest published figures available for Renewable Dispatch Down for calendar year 2022, is 9.4%. The figure for 2023 will be available in SONI's Annual Renewable Constraint and Curtailment Report 2023¹⁰, which will be published in April 2024.

⁹ [Shaping Our Electricity Future Roadmap Version 1.1, Page 110, Section 6.7.2](#)

¹⁰ [Annual Renewable Constraint and Curtailment Report 2022](#)



Grid Security

A secure and reliable electricity network that is fit for the future of the electricity systems needs is critical to customers and market participants. The KPI which falls within this SONI outcome is as follows:

Performance Indicator	Description	2022/23 Target	2022/23 Actual
System Frequency (%)	To ensure that SONI manages the system frequency within Grid Code requirements which states that target frequency is that Frequency determined by the TSO, in its reasonable opinion, as the desired operating Frequency of the Total System. This will normally be 50.00Hz plus or minus 0.05Hz, except in exceptional circumstances as determined by the TSO, in its reasonable opinion when this may be 49.90 or 50.10Hz.	98%	98.6% 
Transmission Network Pre-Construction Project (TNPP) Submissions Approval Time	Timeliness of UR Approvals regarding a TNPP submission	-	-

Figure 18 Grid Security KPIs

System Frequency

Target for Year

Our current target for 2022/23 was operating within the detailed parameters indicated above for 98% of the time. Our System Frequency percentage for this period was 98.52%

Transmission Network Pre-Construction Project (TNPP) Submissions

In the Forward Work Plan 2022-2023, SONI introduced a new performance measure for our activities associated with Role 3 – System Planning, the TNPP Submissions.

Due to feedback received from Stakeholders, deeming this to have too many dependencies and not wholly within SONI's control, we are no longer considering this metric.



System-Wide Costs

Ensuring customers get value for money and benefit from cost efficiency should be paramount. However, the costs for customers should be viewed holistically. The KPI which falls within this SONI outcome is as follows:

Performance Indicator	Description	2022/23 Target	2022/23 Actual
Imperfection Cost Savings (€)	This performance measure is to minimise constraints costs.	-	€10.2m

Figure 19 System-Wide Costs KPIs

Imperfections Costs

Imperfections costs are levied through an all-island tariff; therefore, modelling is performed on an all-island basis. This performance measure assesses our work to minimise constraints costs (which arise due to the difference between the ex-ante market schedule and the real-time dispatch). These costs are passed onto the end electricity consumer.

SONI produces 4 Quarterly Imperfections Cost Reports which are published on the SEM-O website (TSO Responsibilities), which will provide clear evidence of the imperfections reductions actions, progress on the plan and the future improvements that SONI will make to remove or reduce the cost of each constraint in the next period. In addition, for the first time in 2023, the TSOs published a Mid-Year Imperfections¹¹ report.

TSO actions regarding the list of transmission constraint groups, gave rise to imperfections cost savings of €10.2m in the 2021/22 tariff year. As such, three Transmission Constraint Groups were changed / removed that provide all-island benefit:

- Removing Ireland Negative Reserve - this was removed part way through the previous reporting period, and this is the first full year of implementation.
- Dynamic Primary Reserve Requirement Reduction.
- Reducing conventional requirement from all reserve categories

The removal/easing of these three TCGs was facilitated by the following system services: operating reserve contracts with batteries and Demand Side Units (DSUs) and Steady State Reactive Power (SSRP) contracts.

¹¹ [Imperfections Mid-Year Report 2022/23](#)



SONI Service Quality

Whilst delivering on decarbonisation, grid security and cost, SONI will also need to meet the expectations of its stakeholders. Creating a transparent information sharing environment accompanied by the timely completion of our tasks will create positive and efficient working relationships between the parties acting in the market.

The KPIs which contribute to this SONI outcome are as follows:

Performance Indicator	Description
Timely Delivery of Publications	All Publications and materials are published according to the timelines set throughout the Forward Work Plan, with dependencies detailed as, and when, appropriate
Quality & Quantity of Feedback	Where appropriate, feedback will be reviewed in both qualitative and quantitative terms and then used to inform SONI on our performance for each relevant area as detailed throughout the Forward Work Plan

Figure 20 SONI Service Quality KPIs

Timely Delivery of Publications

Across the four SONI roles, **19** project milestones were detailed to have the performance measured by Timely Delivery.

17 of these **19** milestones were completed. **2** were partially completed within the year.

Out of the **17** completed:

- **12** were delivered on time (in the month specified or earlier)
- **3** were delayed, however they were delivered within the Quarter (3 months of the specified delivery date),
 - **1** was a **SONI-related delay**.
 - **2** for reasons **outside of SONI's control**
- **2** were delayed and they were delivered outside of the Quarter (3+ months of the specified delivery date)
 - **1** for reasons **outside of SONI's control**
 - **1** was postponed to secure an **improved outcome for consumers**.

Quality and Quantity of Feedback

In 2022/2023, SONI undertook a comprehensive Stakeholder Needs Assessment. This assessment was undertaken by an independently commissioned research company and involved a mixture of qualitative and quantitative research methods. The Assessment has provided crucial insights and research that will form the basis of a new Stakeholder Management Strategy and Evaluation Framework.

As part of the initial research, initial thematic benchmarking was undertaken in relation to stakeholder satisfaction and favourability. The results are summarised below.

Satisfaction Metric Showing %	Stakeholders
Very satisfied	36%
Somewhat satisfied	50%
Somewhat dissatisfied	14%
Very dissatisfied	0%

Figure 21 Satisfaction Metric

In addition, as part of the Stakeholder Needs Assessment, the general poll was taken with a representative sample of the general public.

Key Demographics Showing %	Total	Urban	Non-Urban	21-34	35-54	55-64	65+
Net favourable Very and somewhat favourably	65%	66%	65%	73%	83%	52%	53%
Very favourably	31%	44%	21%	73%	17%	26%	19%
Very unfavourably	-	-	-	-	-	-	-
Net unfavourable Very or somewhat unfavourably	23%	34%	15%	27%	9%	25%	30%

● 10+ points higher than total
 ● 10+ points lower than total

**Only asked to those who knew SONI operates the Northern Ireland electricity grid (n=29).*

Figure 22 Poll Results

Amongst those members of the public who could correctly identify SONI as the Transmission System Operator, SONI had a net favourability score of 65%.

SONI Governance

As highlighted in the SONI Mid-Year Performance Update 2022 – 23¹² (published April 2023), SONI initiated a programme to fully implement the new licence requirements relating to SONI Governance. The initial focus was on the establishment of a new SONI board and a discovery phase which is considering the organisational structure based on a demerger from EirGrid.

SONI has progressed these activities in parallel with the projects and deliverables detailed in the 2022-23 Forward Work Plan. The new SONI Ltd Board was appointed on 1 October 2023. The outputs of the discovery activities are now under consideration by the new SONI Board.

SONI has been adaptable by ensuring this work was completed in parallel with the other deliverables. The nature of the work required a significant portion of senior management involvement.

¹² [SONI-Mid-Year-Performance-Update-2022-23.pdf](#)

Lessons Learned

This Performance Report signals the end of the Evaluative Performance Framework cycle for 2022/23.

Although SONI considers this to be a successful first cycle, there are some lessons that can be learned from this process and implemented into future iterations of the SONI Forward Work Plan. These are summarised below:

- **External Dependencies** – SONI put new internal processes in place for the progress tracking of all the projects listed within the Forward Work Plan. It is evident that many of the areas within the plan that were not progressed at the rate we anticipated were due to external dependencies and outside of SONI's control.

In future iterations of the Forward Work Plan, SONI must consider how to better manage these dependencies and mitigate these risks. Stakeholder engagement and Stakeholder management are becoming ever more important, such that the dates that SONI are committing to throughout this process reflect the many external factors across all four roles.

- **Internal Communications** – SONI implemented new internal processes for the completion of all publications within this framework. These processes should be further enhanced in order to accomplish the continuous improvement that this framework requires.
- **SONI Governance** – This cycle has been completed alongside the progression of SONI Governance. SONI will have to factor in the requirements under those obligations into future Forward Work Plans.