

SONI Mid-Year Performance Update

2022 – 23

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Castlereagh House, 12 Manse Road, Belfast BT6 9RT
Telephone: +44 28 9079 4336 • www.soni.ltd.uk

Introduction

SONI is the electricity transmission system operator for Northern Ireland.

This means we plan for the future of the electricity grid and operate it every minute of every day.

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

Investing in and improving the transmission grid is essential to make your supply of electricity more reliable and cost effective. It also supports economic growth, enables competition, and helps to deliver a cleaner energy future.

Evaluative Performance Framework

The Evaluative Performance Framework commenced in 2022. It facilitates the assessment of SONI's performance through two stages, the assessment of SONI's Forward Work Plan (FWP) which is published by the end of September each year, and the assessment of SONI's Annual Performance Report which is published by the end of December the following year.

The purpose of this mid-year performance update is to provide an update on SONI's delivery and performance in the year to date.

We will be presenting this update at a virtual workshop event (via MS Teams) on 17th May 2023 from 10am to 12pm.

Please email info@soni.ltd.uk by Friday 12th May 2023 to register your attendance.

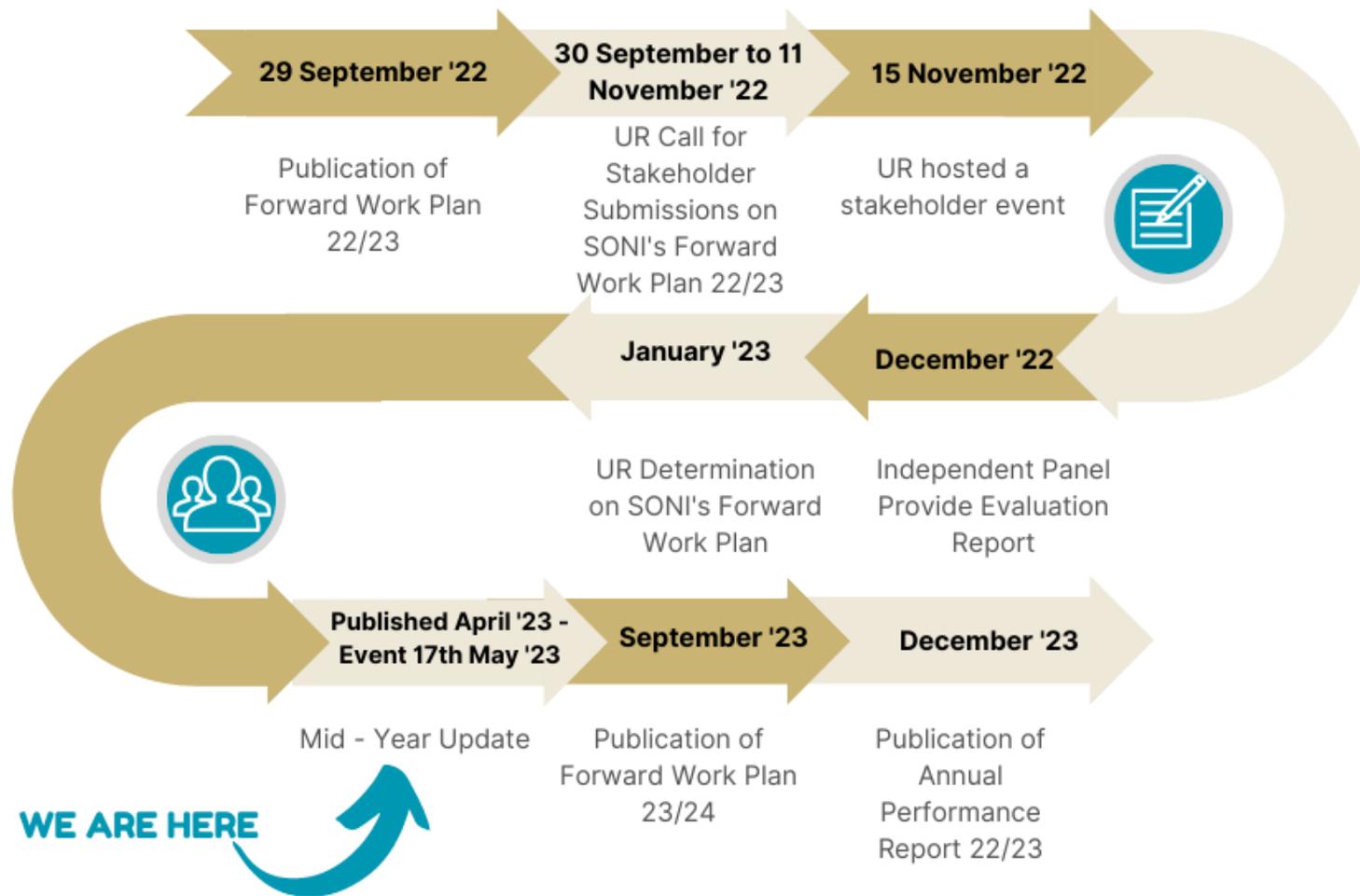


Figure 1 Overview of the Evaluative Performance Framework

Summary of Forward Work Plan

The charts below provide a status of the planned projects over the first 6 months of the year for each of the 4 SONI Roles. Good progress has been made, however SONI has experienced a number of challenges as indicated below, that have impacted on the planned dates for delivery. A more detailed view is provided in tables later in this report.

Postponed to Secure an Improved Outcome for Consumers
10

SONI has completed 16 out of the 33 milestones planned for this 6-month period.

Of the 17 remaining milestones which are not complete, 1 is a SONI-related delays, 6 were delayed outside of SONI's control, and 10 have been postponed in order to deliver an improved outcome for consumers.

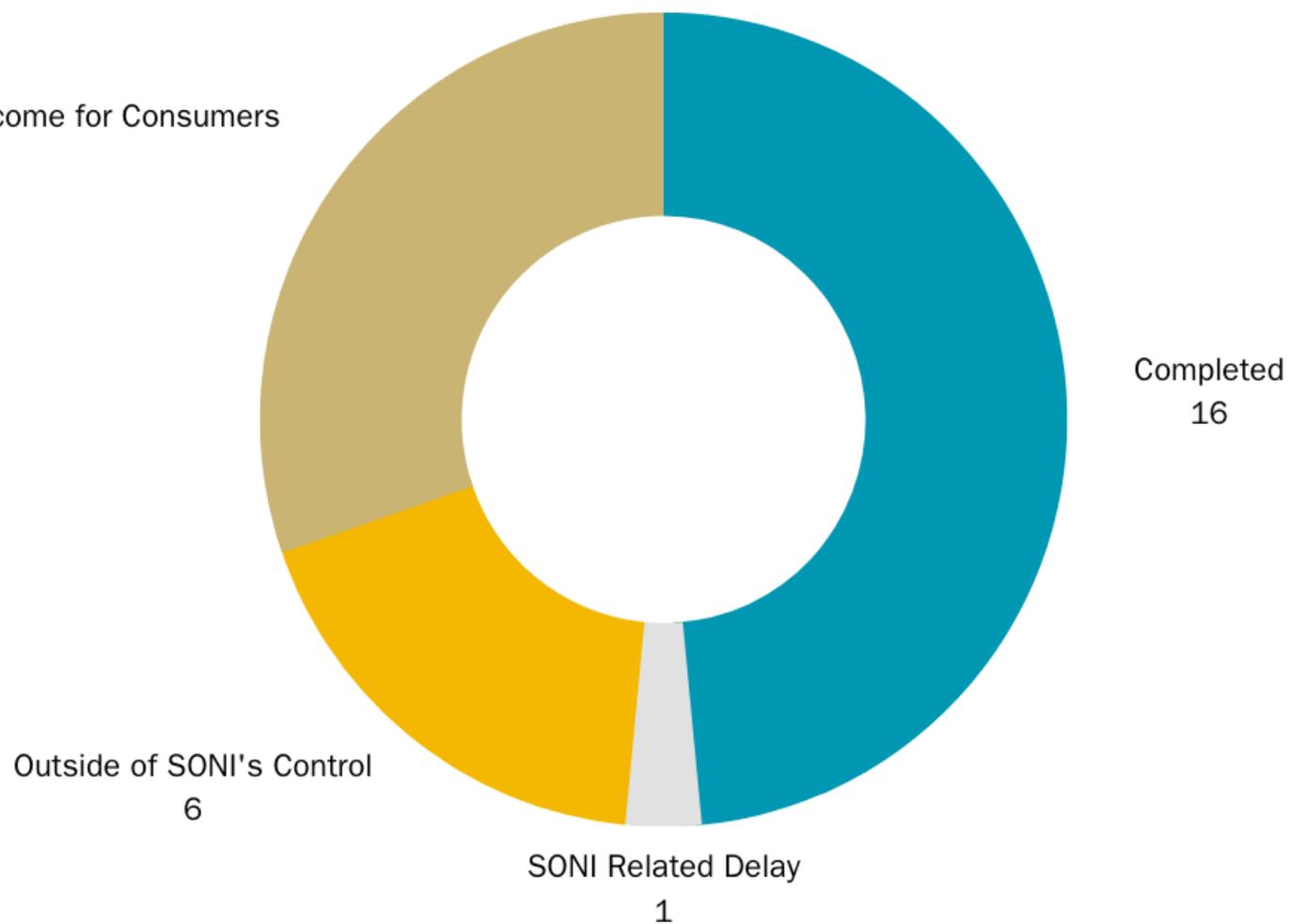
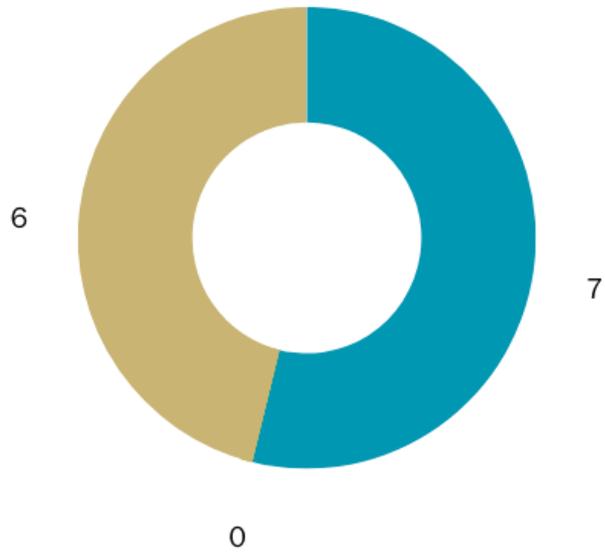
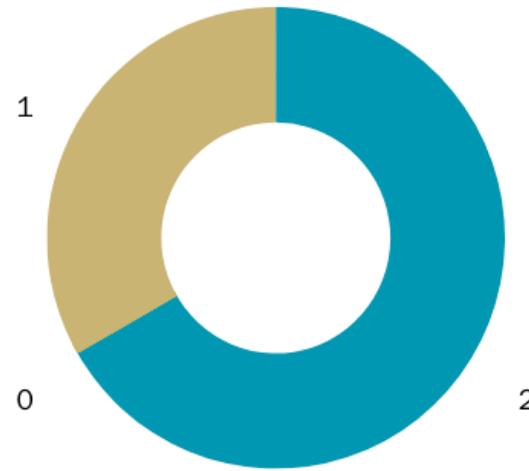


Figure 2 Project Delivery

Role 1 System Operation and Adequacy

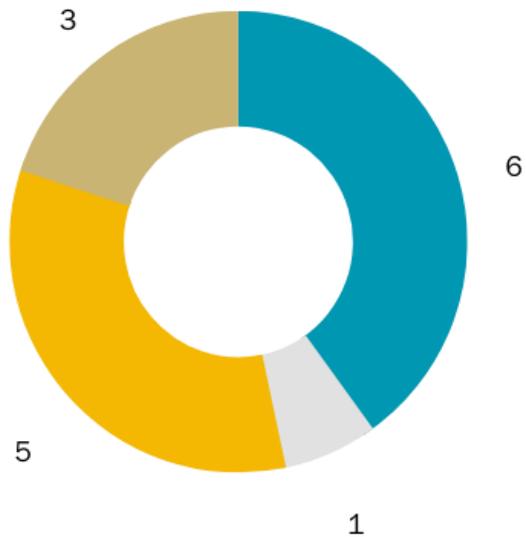


Role 2 Independent Expert



- Completed
- SONI Related Delay
- Outside of SONI's Control
- Postponed for an Improved Outcome

Role 3 System Planning



Role 4 Commercial Interface

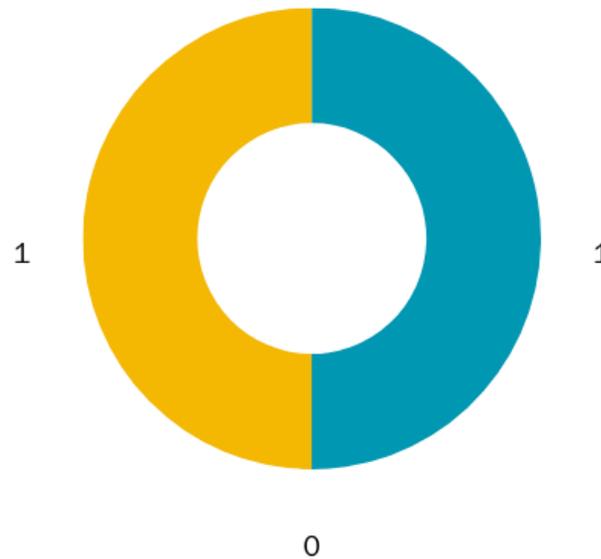


Figure 3 Project Delivery Per Role

New Projects

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 as well as the SONI Governance Programme referenced in the Forward Work Plan. These are described below and will be progressed during the remainder of this year. They will be included 2022/23 Performance Report.

Tomorrow's Energy Scenarios (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'.

SONI intends to consult on TESNI over the summer of 2023.

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 are scheduled for early summer.

SONI Governance

SONI has initiated a programme to fully implement the new licence requirements relating to SONI Governance. The initial focus is on the establishment of a new SONI board and a discovery phase which is considering the organisational structure based on a demerger from EirGrid.

Role 1 System Operation and Adequacy – Plan Delivery

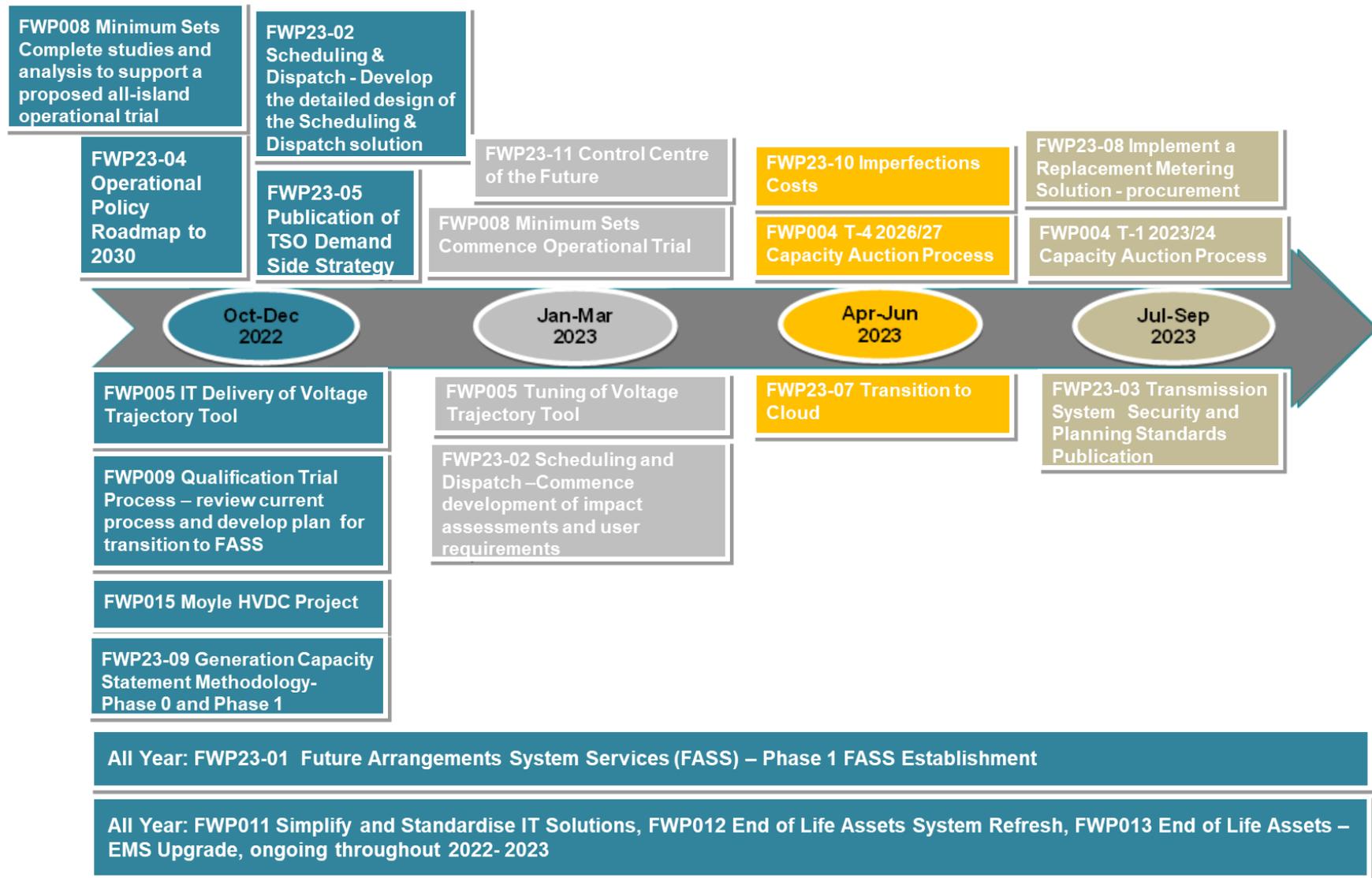


Figure 5 Role 1 Overview of Projects

The table below provides a complete view of the projects presented within the Forward Work Plan across Role 1 System Operation and Adequacy.

PROJECT ID	PROJECT NAME	MILESTONE	FWP DUE DATE	REVISED DUE DATE	STATUS AS AT PUBLICATION
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	Nov-22	-	100%
FWP23-04	Operational Roadmap TO 2030	Delivery of Publication	Dec-22	-	100%
FWP23-05	TSO Demand Side Strategy	Delivery of Publication	Dec-22	Jul-23	85%
FWP005	Control Centre Tools	Voltage Trajectory Tool (VTT) Go Live	Dec-22	Sep-23	95%
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	Dec-22	-	100%
FWP009	Qualification Trial Process	Review the current QTP Process and develop a plan for the transition to the System Services Future Arrangements	Dec-22	-	100%
FWP011	Simplify & Standardise IT Solutions	Power System Analysis Tool	Oct-22	May-23	85%
FWP015	Moyle HVDC Project - Telecoms	Delivery of activities detailed	Nov-22	-	100%
FWP23-09	Generation capacity Methodology Statement	Completion Phase 0 and Phase 1	Dec-22	-	100%
FWP23-02	Scheduling & Dispatch	Develop impact assessments and detailed user requirements based on agreed / approved detailed design;	Commence Jan-23	-	100%
FWP005	Control Centre Tools	Tuning	Mar-23	Sep-23	5%
FWP23-11	Control Centre of The Future	Development of a delivery plan to 2030	Mar-23	Jun-23	95%
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	Mar-23	Jun-23	30%

Table 1 Role 1 Deliverables

FWP23-05: TSO Demand Side Strategy

The date for delivery of the publication has been revised from **December 2022** to **July 2023** for an **Improved Outcome for Consumers**. This change was to enable further engagement with external stakeholders and incorporate feedback before publication.

FWP008: Minimum Number of Sets

The date for commencing the operational trial of this interim policy with of a minimum of 7 large synchronous units / 20,000MW's inertia floor has been revised from **March 2023** to **June 2023** for an **Improved Outcome for Consumers**.

The Minimum Number of Sets project encompasses a wide range of studies, including system strength, ramping margin, PLEXOS analysis, and voltage and dynamic stability. The bulk of the studies were completed on schedule by the end of 2022.

However, the finalisation of the studies was extended due to a number of factors. We encountered some challenges during the early phase, such as the need to update our models and develop a Python-based tool that could handle the high volume of calculations required. Furthermore, a significant amount of time was spent addressing the high volume of observed voltage violations.

Lastly, SONI took the opportunity to hold several discussions with international TSOs and external stakeholders to ensure that our calculation methodologies were in line with best practices. As a result, time was spent developing a new tool to extract results and calculate dynamic stability, which enhanced the study outcomes. We consider that this additional collaboration has been very beneficial.

The commencement of the operational trial is also reliant on the successful completion of the RoCoF trial which was extended and is now scheduled to complete in May 2023. Hence the earliest the Min 7 trial can start in June 2023, and SONI has commenced work on the Trial Plan in anticipation of this.

FWP011: Simplify & Standardise IT Solutions

The date for delivery of the Power System Analysis tool has been revised from **October 2022** to **May 2023** for an **Improved Outcome for Consumers**. The move of Power Factory, a power system analysis tool, to centralised licensing is on track for completion in May 2023. This involves ensuring the commercial arrangements are fully bottomed out.

FWP005: Control Centre Tools

The date for the Voltage Trajectory Tool (VTT) to Go Live has been revised from **December 2023** to **September 2023** and subsequently the operational tuning of the tool has also been amended from **March 2023** to **September 2023** for an **Improved Outcome for Consumers**.

VTT is a very complex solution which is a first of its kind therefore significant development and testing effort is required to ensure it meets the desired outcomes. VTT is currently being tested by Users. Following completion of the User Acceptance Testing phase, VTT will be put into the Control Room for initial tuning and is expected to be live and operational in the Control Room in September 2023.

FWP23-11: Control Centre of the Future

The date for the development of a Delivery Plan to 2030 has been revised from **March 2023** to **June 2023** for an **Improved Outcome for Consumers**.

Following publication of SONI's Operational Policy Roadmap to 2030 in December 2023, we are taking some additional time to ensure that the Control Centre of the Future implementation plan is fully aligned with that roadmap.

Role 2 Independent Expert – Plan Delivery

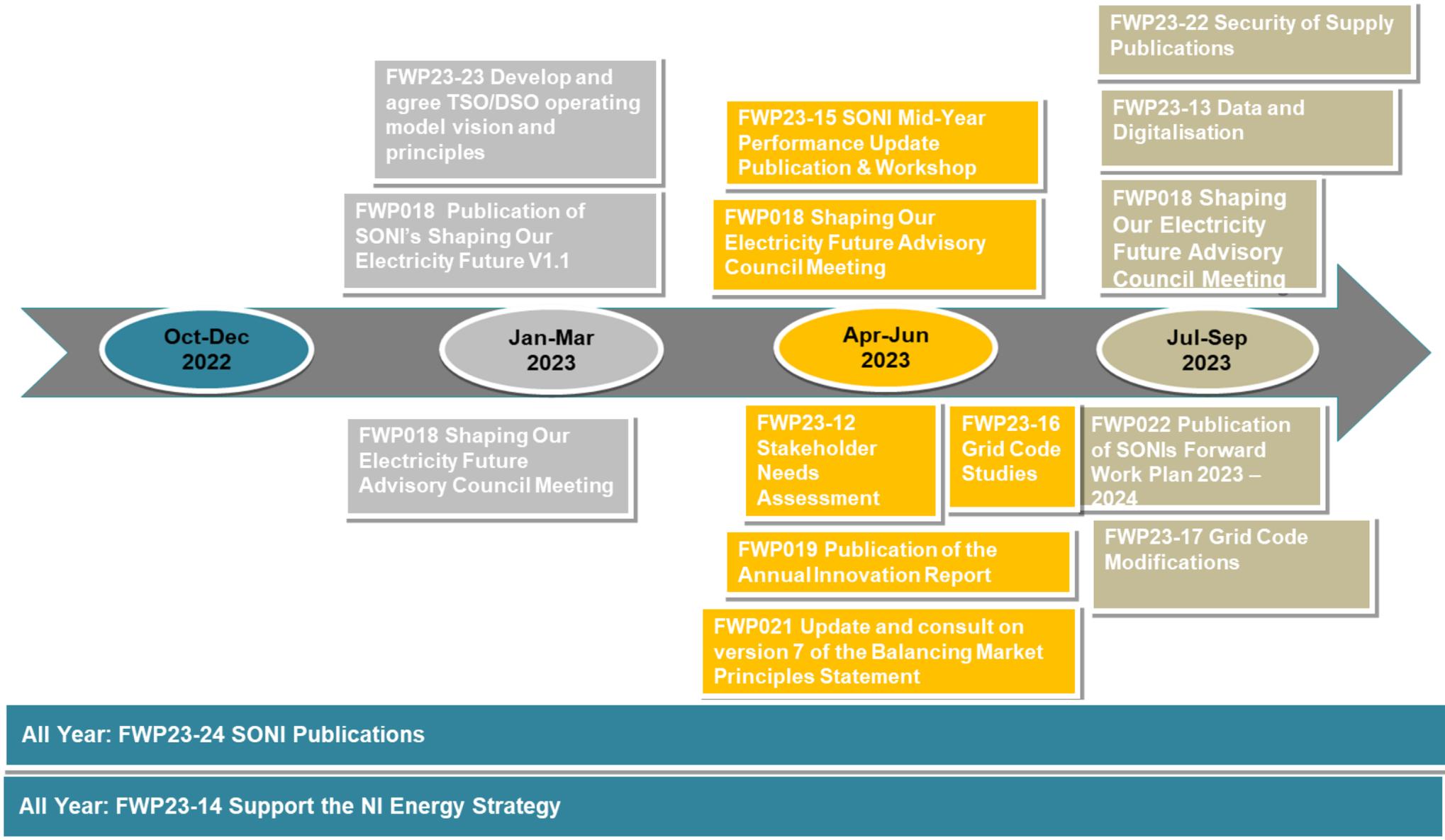


Figure 6 Role 2 Overview of Projects

The table below provides a complete view of the projects presented within the Forward Work Plan across Role 2 Independent Expert.

PROJECT ID	PROJECT NAME	MILESTONE	FWP DUE DATE	REVISED DUE DATE	STATUS AS AT PUBLICATION
FWP018	SOEF	Advisory council	Jan-23		100%
FWP018	SOEF	SOEF V1.1 Publication	Feb-23	Jun-23	95%
FWP23-23	SONI TSO-DSO Operating Model	Develop and agree the TSO – DSO operating model vision and principles	Mar-23		100%

Table 2 Role 2 Deliverables

FWP018: Shaping Our Electricity Future Version 1.1

The date for delivery of the publication has been revised from **February 2023** to **June 2023** for an **improved outcome for consumers**.

SONI is engaging with DAERA in relation to Climate Action Plan for NI. We have shared our view on power sector modelling and the impact on carbon emissions, and which is linked to the emerging position based on the technical modelling parameters of SOEF v1.1. SONI is currently collaborating in further knowledge sharing with DAERA. It is important for SONI that this engagement is undertaken prior to publishing SOEF V1.1 and therefore SONI will publish later than anticipated.

Role 3 System Planning – Plan Delivery

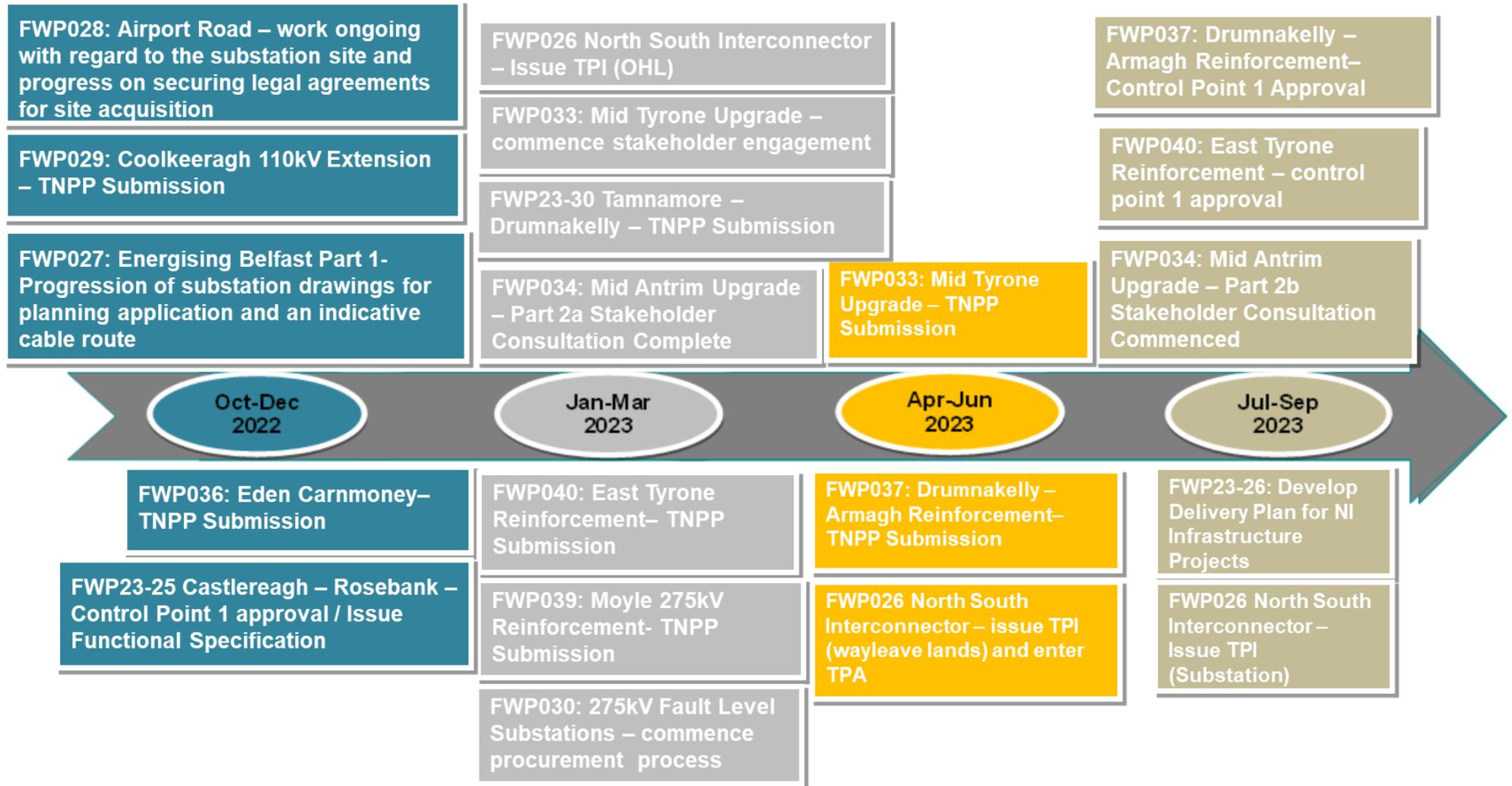


Figure 7 Role 3 Overview of Projects

The table below provides a complete view of the projects presented within the Forward Work Plan across Role 3 System Planning.

PROJECT ID	PROJECT NAME	MILESTONE	FWP DUE DATE	REVISED DUE DATE	STATUS AS AT PUBLICATION
FWP027	Energising Belfast Part 1	Review and approve NIE Networks Design specification for the Castlereagh Tx4 works	Oct-22	May-23	0%
FWP027	Energising Belfast Part 1	Review and approve NIE Networks Design Specification for the works at Finaghy Main	Nov-22	Jun-23	0%
FWP027	Energising Belfast Part 1	Partial TPI and TPA	Dec-22	Jun-23	0%
FWP036	Eden Carnmoney	TNPP Submission	Nov-22	-	100%
FWP028	Airport Road	Commence compulsory Landowner Agreements to finalise site and cable routing	Commence Nov-22	Jun-23	0%
FWP029	Coolkeeragh 110kV extension	TNPP Submission	Nov-22	-	100%
FWP23-25	Castlereagh - Rosebank	Timely issue of functional specification.	Nov-22	-	100%
FWP026	North South I/C	Currently in Part 3 Issue Transmission Project Instruction (OHL)	Mar-23	Sep-23	50%
FWP034	Mid Antrim upgrade	Part 2a Stakeholder Consultation	Jan-23	-	100%
FWP040	East Tyrone Reinforcement	TNPP Submission	Feb-23	Jun-23	90%
FWP033	Mid Tyrone Upgrade	Stakeholder Engagement	Mar-23	-	100%
FWP039	Moyle 275kV Reinforcement	TNPP Submission	Jan-23	May-23	98%
FWP029	Coolkeeragh 110kV extension	Progress to part 2 of the 3 part process - Control point 1 approval	Mar-23	-	100%
FWP030	275kV Substation Fault Level Solutions	Commence progression of procurement and award of contract with substation design consultant	Commence Jan-23	May-23	40%
FWP23-30	Tamnamore - Drumnakelly Restring	TNPP Submission	Feb-23	May-23	80%

Table 3 Role 3 Deliverables

FWP027: Energising Belfast Project Part 1: Castlereagh – Hannahstown

The date for delivery of reviewing and approving the NIE Networks Design specification for the Castlereagh Tx4 works has been revised from **October 2022** to **May 2023** due to a delay **Outside of SONI's control**.

A design specification has not yet been received, therefore SONI has been unable to progress the three milestones related to this project.

FWP028: Airport Road Main 110/33 kV Substation

The date for commencing compulsory Landowner Agreements to finalise site and cable routing has been revised from **November 2022** to **June 2023** due to a delay **Outside of SONI's control**.

There are ongoing discussions with two third parties to ensure each are aligned and happy to proceed with the compulsory route for the two remaining 'issues' onsite.

FWP030: 275kV Substation Fault Level Solutions

The date for commencing progression of procurement and award of contract with substation design consultant has been revised from **January 2023** to **May 2023** for an **Improved Outcome for Consumers**.

The scope of this project is more complex than originally anticipated, with the original scope of works amended to better suit system needs. It has therefore taken longer to commence the procurement.

FWP026: North South 400kV Interconnector

The date for issuing the Transmission Project Instruction (TPI) to NIE Networks for construction of Overhead line that have easements secured, has been revised from **March 2023** to **September 2023** 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. SONI also continues to liaise closely with NIE Networks on the completion of tendering process for the construction.

FWP040: East Tyrone Reinforcement

The date for providing a TNPP submission to the UR has been revised from **February 2023** to **June 2023** for an **Improved Outcome for Consumers**. This is due more optimal solutions being identified during the optioneering exercise and stakeholder engagement.

FWP039: Moyle 275kV Reinforcement

The date for providing a TNPP submission to the UR has been revised from **January 2023** to **May 2023** due to **SONI Related Delay**.

SONI is currently conducting the final review of the options report and TNPP document required for this submission.

FWP23-30: Tamnamore – Drumnakelly Restrung

The date for providing a TNPP submission to the UR has been revised from **February 2023** to **May 2023** for an **Improved Outcome for Consumers**.

Discussions with NIE Networks on a previously preferred option have resulted in a revision to our optioneering which has identified a new preferred option.

Role 4 Commercial Interface – Plan Delivery

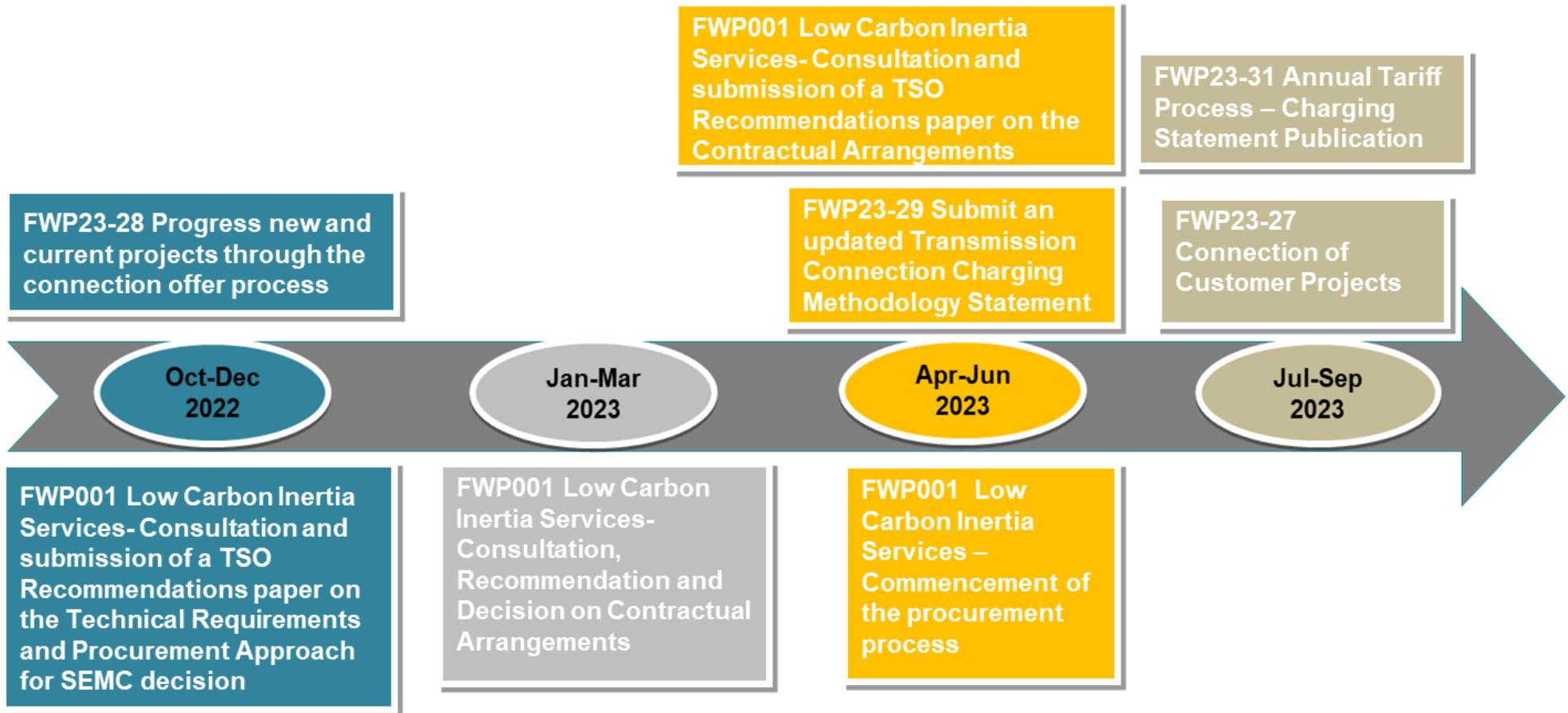


Figure 8 Role 4 Overview of Projects

The table below provides a complete view of the projects presented within the Forward Work Plan across Role 4 Commercial Interface

PROJECT ID	PROJECT NAME	MILESTONE	FWP DUE DATE	REVISED DUE DATE	STATUS AS AT PUBLICATION
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	Oct-22	-	100%
FWP001	Commercial Arrangements for Low Carbon Inertia	Consultation and submission of a TSO Recommendations paper on the Contractual Arrangements	Mar-23	Jul-23	50%

Table 4 Role 4 Deliverables

FWP001: Low Carbon Inertia Services

The date for Consultation and submission of a TSO Recommendations paper on the Contractual Arrangements has been revised from **March 2023** to **July 2023** due to a delay **Outside of SONI's control**.

The start of this consultation was awaiting the SEMC Decision on the Technical Requirements and Procurement approach. This decision required the TSOs to propose and consult on a price cap which required further developments. In the meantime, some risks have been identified and needed to be addressed. Therefore, we are now aiming to consult on the Contractual Arrangements in **April 2023** and submit a Recommendations paper to the SEMC in **July 2023**.

Stakeholder Engagement

Please see detailed below a snapshot of the stakeholder engagement SONI has both organised and participated in between October 2022 and April 2023.¹



Figure 9 Stakeholder Engagement

¹ This stakeholder engagement analysis was informed by a survey of the different teams across SONI on engagement activity between 1 October 2022 – 31 March 2023. Due to differences in audience segmentation and reporting methodology, the survey results do not reflect to totality of engagement in SONI during this period but rather a snapshot in time. As such, the figures represented should be treated as approximates for the purposes of this update. As part of the Forward Work Plan, SONI is undertaking a new Stakeholder Needs Assessment to inform a new Stakeholder Management Plan. This Plan will outline a new monitoring methodology to inform future reporting of engagement activity. It should be noted the figures represent engagement activity as opposed to the number of people involved in that engagement. In addition to the overall figure of 625 engagements, we have sought to highlight components which we feel will be of particular interest. As such, the figures provided in the breakdowns may not equate to the overall total.