TSO PR5 Strategic Objectives Incentives

Multi-Year Plan

2024-2028

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EirGrid

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1. Introduction and Purpose

CRU/20/154[1] Decision Paper contains direction and guidance to EirGrid as the Transmission System Operator (TSO) on Incentives and Reporting arrangements for the Price Review 5 (PR5) period, 2021-2025. The objective of the Commission for Regulation of Utilities (CRU)'s PR5 reporting and incentives, as per the Executive Summary of CRU/20/154, is to ensure that network companies are focused on:

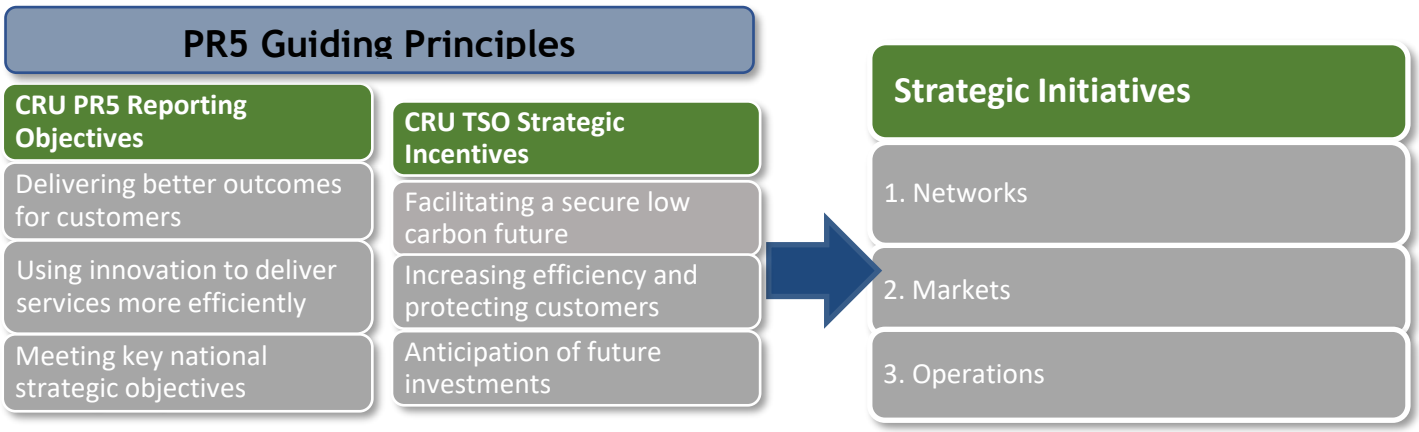
- Delivering better outcomes for customers.
- Using innovation to deliver services more efficiently; and
- Meeting key national strategic objectives.

Further to this, as per Section 7.10 and Annex 11 of CRU/20/154, the CRU has identified three key areas for consideration when proposing the TSO Strategic Incentives:

- Facilitating a secure low carbon future.
- Increasing efficiency and protecting customers; and
- Anticipation of future investments.

Guided by these incentives, and at the same time being aware of the incentives that are being reported separately under PR5 to the CRU, we are executing three initiatives which are delivered under the multi-year plan. These three initiatives, namely Networks, Markets and Operations, are also closely aligned with:

- EirGrid's Shaping our Electricity Future (SOEF) Roadmap V1.1 (published July 2023).
- EirGrid's Operational Policy Roadmap for 2023-2030 (published December 2022); and
- The Climate Action Plan 2023 (CAP23) (published December 2022 and updated June 2023).



The guiding principles in PR5 have informed the three strategic initiatives that are reported in our multi-year plan for strategic objectives.

In this multi-year plan, we have revised the programme to align to the strategic outlook and objectives for the years 2024-2028.

The PR5 Strategic Objectives Multi-Year Plan does not provide an overall reflection of our pathway to ensure the delivery of the 2030 (and beyond) climate action targets. This reporting incentive was put in place by the CRU in 2020 in the context of twelve other incentives that EirGrid is required to report on, all of which contribute to meeting the climate ambitions of Ireland whilst also fulfilling other aspects of our role as the transmission system operator. This multi-year plan should be considered in the context

[1] CRU/20/154 PR5 Regulatory Framework Incentives and Reporting

of all of the incentives, but it should also be noted that these incentives are specific and are in addition to a range of other workstreams, activities and resulting publications that are undertaken by EirGrid.

In particular, since the PR5 incentives were put in place EirGrid published Shaping Our Electricity Future (SOEF) in 2021. Following this, the Government of Ireland announced commitments to deliver further emissions cuts by 2030 and published associated carbon budgets by sector in July 2022. The Climate Action Plan 2023 (CAP23) was published in December 2022 reflecting these new commitments driving the requirement for the new version of SOEF (Version 1.1). In addition, we have published our Operational Policy Roadmap 2023-2030 and it is also important to highlight the work that EirGrid is doing towards the publication of Tomorrow's Energy Scenarios in 2024.

Please note that EirGrid actions required as per the Security of Supply and Offshore Wind workstreams are being progressed via separate initiatives and as a result are not expressly referred to in this document. Please refer to CRU Security of Electricity Supply - Programme of Actions[2], the Irish Government's Policy Statement on the Framework for Ireland's Offshore Electricity Transmission System[3] and the Policy Statement for Phase Two Offshore Wind[4] for further information.

Shaping Our Electricity Future ((SOEF)

In 2023, EirGrid undertook additional analysis to revise the SOEF Roadmap taking into account CAP23 and, as identified by the CRU, the three key areas for consideration when proposing the TSO Strategic Incentives outlined above. As such an updated version, SOEF V1.1 was published in July 2023 and provides a more holistic view of EirGrid's markets, networks, operations and engagement workstreams that are being progressed to meet our 2030 targets and beyond.

Shaping Our Electricity Future is one of the most visible deliverables for the electricity sector in the CAP23. The purpose of SOEF is to outline a secure transition to deliver Ireland's renewable electricity targets by 2030. In consultation with the Government, regulators, and stakeholders, EirGrid has used scenario-based analysis across the whole electricity system to identify a pathway to deliver on our renewable ambitions in an economic and reliable fashion. The additional analysis and update to SOEF has taken account of the significant additional on-shore wind and solar renewable energy projects.

It is relevant to note that Shaping our Electricity Future also has an engagement stream which is not captured in this paper as it is incentivised under the Networks Stakeholder Engagement Evaluation Panel ('NSEE Panel') incentive.

Tomorrow's Energy Scenarios

Tomorrow's Energy Scenarios explores long-term energy scenarios for Ireland. The scenarios consider how electricity demand and supply might evolve from 2035 to 2050. The report will explain what this could mean for electricity generation, storage and interconnection supported by different technologies. SOEF v1.1 includes a roadmap on what work needs to be done on the transmission system to reach 2030 climate targets. Tomorrow's Energy Scenarios takes this thinking further to consider what our power system might look like over a longer horizon to 2050. This report sets out a range of credible pathways that Ireland could follow to achieve our climate ambitions. Underpinned by EirGrid's technical research and modelling, each scenario considers how much electricity we might need and how it can be provided.

Operational Policy Roadmap

The Operational Policy Roadmap for 2023-2030, is measured and incentivised in the TSO RES – E (Electricity from Renewable Energy Sources) multi-year plan and so it is not covered in this multi-year plan, but it is important to note that it has an impact on achieving our strategic objectives. The roadmap outlines the key actions in the operational policy space that will be required to deliver on the Climate Action Plan targets while continuing to securely operate the electricity system. It plays a key role in setting the overall strategic objectives – particularly in the system operations workstream. The

[2] Security of Electricity Supply - Programme of Actions
[3] Policy Statement on the Framework for Ireland's Offshore Electricity Transmission System
[4] Policy Statement for Phase Two Offshore Wind

Operational Policy Roadmap is essential to setting the overall strategic objectives in the system operations workstream. The output of this update will establish the strategic objectives which may be incorporated into future multi-year plans.

2. Summary of Initiatives

Under each of these strategic initiatives we outline a multi-year programme. Transitioning to an agile environment, deliverables in each of the subsequent years after 2024 are understood, adapted, and aligned with the focus of ensuring the strategic objectives, and all regulatory requirements are met. With the PR5 guiding principles in mind and the main strategic incentives at hand the table in Section 4 describes the actions to facilitate a secure low-carbon future, increase efficiency/protect customers and to ensure the anticipation of future investments.

- The *Networks* activities seek to maximise the effectiveness and efficiency of the transmission system through the use of innovative and flexible solutions. This will maintain and extend the current network in anticipation of future investments reducing the cost burden on end customers.
- Many of the activities listed under *Markets* are specifically related to the encouragement of renewables onto the system in support of the national targets of 80% renewable electricity by 2030. These market activities are an important way of stimulating further investment by market participants.
- The *Operations* activities are focused on enabling the system to operate in a way that promote a lower carbon future to deliver on the Climate Action Plan targets while continuing to securely operate the electricity system.

Put together, the Network, Market and Operations activities address all of the key strategic incentives in a balanced manner.

3. Feedback from CRU and Industry Consultation

Taking account of the Balance Scorecard for 2023, feedback received from the consultation on the Strategic Objectives Multi-Year Plan 2023-2024 and additional engagement with the CRU, the TSO reviewed and assessed feedback as well as additional considerations noted by CRU.

EirGrid published a response to the feedback received from the Strategic Objective Multi-Year Plan 2023-2028 consultation on its website and this document should be referred to in the context of this section.

We have also considered the following in the development of this multi-year plan:

- Taking account of feedback from the 2023 Balanced Scorecard, we have included details in the incentive summary table on how the milestones are linked to the strategic incentive areas as outlined in Section 1
- A commentary on the benefits to customers and market participants of each milestone identified has been included.
- In lieu of identifying workstreams as a multi-year deliverables, we have broken those down into tangible milestones, actions, and deliverables where possible and removed the 'Multi-Year Deliverables'. For some workstreams (Integration of SEM (Single Electricity Market) into GB and EU Markets and EU Integration Design), it was not possible to provide specific milestones as we do not have confirmed funding from the Regulatory Authorities and therefore these are not covered in this plan. We are currently preparing our funding submissions and expect that more detail will follow in our Multi-Year Plan 2025-2029.

- We have also clearly linked the proposed actions and deliverables required to achieve the delivery milestones and have created a separate table for this purpose in Section 5.
- Noting the requirements of CRU to avoid duplication, the TSO has removed minimum conventional units online as this is captured under the Imperfection & Constraint incentive where this policy change can make a substantial impact. We have also removed our workstreams associated with the technology toolbox and flexible networks as these workstreams are covered under the joint TSO/TAO (Transmission System Operator/Transmission Asset Owner) incentives.
- We have included our workstreams on Long Duration Energy Storage

We note that some feedback from industry extended beyond the scope of this incentive.

3.1. Price Review 6

The Price Review 6 period commences in 2026 and concludes at the end of 2030. The TSO will prepare and make a detailed submission to the CRU during 2024, therefore the development of this multi-year incentive plan takes place within the context of the development of the broader PR6 programme and submission process. It is therefore not considered prudent to make specific programmatic commitments without firstly considering the alignment with the strategic elements of the future PR6 submission. Further detailed information is expected to be available for the 2025 incentive plan development. For the avoidance of doubt, the TSO will continue to progress existing plans (including existing project milestones) to promote the wider aims of this incentive and to deliver the efficiencies expected by consumers and industry.

4. Multi-Year Plan

4.1. Networks

The workstreams included below should not be considered as a complete reflection of our incentive proposals associated with Networks. There are a number of other PR5 incentives associated with Networks that the TSO are required to report on to CRU and are included in other incentive reports.

Networks				
Year	**Milestone Title and Timeline**	**PR5 Incentive(s) (Facilitating a Low Carbon Future, Increasing Efficiencies for Customers and Anticipation of Future Investments)**	**Outline how this milestone is linked to the PR5 incentive(s) identified**	**Benefits/Outcomes of Identified Milestone for customers and market participants.**
2024	Publish Tomorrow's Energy Scenarios **Q1 2024**	Facilitating a Low Carbon Future	Tomorrow's Energy Scenarios (TES) outlines a number of long term energy scenarios for Ireland and Northern Ireland considering how electricity demand and supply might evolve from 2035 to 2050. The report will explain what this could mean for electricity generation, storage and interconnection supported by different technologies. The findings of this study will be used to plan future developments of the electricity system	Tomorrow's Energy Scenarios is a significant body of work in terms of planning for the future of the electricity system. This study will be a key enabler to the long term planning of the electricity system. Each scenario considers a different pathway to decarbonise our power system, as well as the pace of change and how we might achieve the energy transition in terms of energy demand, transmission, and supply. The overall effective long-term planning of the electricity system and the approach to TES will deliver long-term benefits to customers and market participants by analysing the future scenarios and identifying what are the most optimum paths/approaches we should take in order to decarbonise the power system as well as delivering value for money and the most cost effectives approaches.
	Outage Transformation – commence the implementation of the Outage Transformation Roadmap Optimise the Network Delivery Programme (NDP) and integrate outage constraints **Q4 2024**	Facilitating a low carbon future Increasing Efficiency for Customers and Anticipation of Future Investments	A successful outage programme is critical to meeting our 2030 targets as it allows the connection of new renewables and other critical technologies to the electricity system as well as facilitating the essential upgrades of transmission network required by 2030 to accommodate them. Delivery of this milestone will also facilitate greater efficiency for customers and consumers by the optimisation of the NDP overall by providing an increasing level of certainty for project completion dates in the NDP and the annual transmission outage programme. It also assists in the anticipation of future investments in the context of new transmission projects and new renewables connecting to the grid	This workstream will result in an optimised overall joint delivery approach between EirGrid and ESBN. It will minimise the requirement for outages and ensure delivery of the outage programme and in turn the NDP as effectively and efficiently as possible.
	Complete Asset Reliability Study **Q4 2024**	Increasing Efficiency for Customers and	Delivery of this milestone will facilitate more focussed System and Asset Management Planning	Comprehensive data from these studies will be used for system planning, for developing maintenance plans,

Networks				
Year	**Milestone Title and Timeline**	**PR5 Incentive(s) (Facilitating a Low Carbon Future, Increasing Efficiencies for Customers and Anticipation of Future Investments)**	**Outline how this milestone is linked to the PR5 incentive(s) identified**	**Benefits/Outcomes of Identified Milestone for customers and market participants.**
		anticipation of Future Investments	creating efficiencies for customers and consumers. The study will provide valuable data for system planning, for developing maintenance plans, identifying trends and asset management decision making.	identifying trends and asset management decision making. This will assist in optimising these workstreams and our transmission assets and ensuring they are planned and utilised in the most optimum way ultimately creating efficiencies for customers and ensuring best value for market participants
	Participate in an International Transmission Asset Management Survey (ITAMS **Q4 2024**	Increasing Efficiency for Customers and anticipation of Future Investments	Delivery of this milestone will assist with continuous improvement for Asset Management. It will ensure that our transmission infrastructure asset based is managed to the appropriate standards which will provide best value to customers and consumers as well as ensuring that our assets are best placed for the incorporation of new investment on the transmission system	International benchmarking exercise will provide a valuable comparator against other TSO's and identify improvement opportunities.
2025	Q4 Implement the Outage Transformation roadmap coupled with the optimised NDP **Q4 2025**	Increasing Efficiency and Protecting Customers	Delivery of this milestone will facilitate greater efficiency for customers and consumers by optimising the delivery of projects within the NDP. It is anticipated that it will enable the improvement of availability and utilisation of transmission outages as well as improving the management and prioritisation of the portfolio of projects required to deliver the future investments and network enhancements over the coming years.	This workstream will result in an optimised overall joint delivery approach between EirGrid and ESBN. It will minimise the requirement for outages during construction and ensure delivery of the outage programme and in turn the grid delivery programme as effectively and efficiently as possible.

Networks				
Year	**Milestone Title and Timeline**	**PR5 Incentive(s) (Facilitating a Low Carbon Future, Increasing Efficiencies for Customers and Anticipation of Future Investments)**	**Outline how this milestone is linked to the PR5 incentive(s) identified**	**Benefits/Outcomes of Identified Milestone for customers and market participants.**
	Review and identify opportunities for changing from Time Based Maintenance to Condition and Risk Based **Q3 2025**		Delivery of this milestone will assist with maintenance optimisation as maintenance will be carried out only when it is deemed necessary from a condition and risk evaluation. This will create greater efficiencies and cost savings for customers and consumers.	Maintenance optimisation and finding a balance between cost, risk and performance will provide better value for customers.
2026-2028	Details to be included in a future MYP (Multi Year Plan) subject to PR6	Details to be included in a future MYP subject to PR6	Details to be included in a future MYP subject to PR6	Details to be included in a future MYP subject to PR6

4.2. Markets

Markets				
Year	**Milestone Title and timeline**	**PR5 Incentive (Facilitating a Low Carbon Future, Increasing Efficiency for Customers or Anticipation of Future Investments)**	**Outline how this milestone is linked to the PR5 incentive identified**	**Benefits/Outcomes for customers and market participants**
	Implement Tranche 1 of the Scheduling & Dispatch Programme which includes Operation of Non-Priority Dispatch Renewables, Energy Storage Power Station, and	Facilitating a Low Carbon Future and Anticipation of Future Investments	For Operation of Non-Priority Dispatch Renewables this will implement aspects of the SEMC decision outlined in SEM-22-009.	The changes associated with Energy Storage Power Stations have been sought by Market Participants. This allows energy arbitrage,

Markets				
Year	**Milestone Title and timeline**	**PR5 Incentive (Facilitating a Low Carbon Future, Increasing Efficiency for Customers or Anticipation of Future Investments)**	**Outline how this milestone is linked to the PR5 incentive identified**	**Benefits/Outcomes for customers and market participants**
2024	Improvements to Wind/Solar Dispatchability[5]		The Energy Storage Power Station enables batteries submit a negative PN and be dispatched more efficiently, thus supporting low carbon future, and allowing future investment in storage. The Wind/Solar Dispatchability improvements ensure more equitable dispatch due to changing weather conditions.	thus helping with investment business cases. It helps support a low carbon power system. The changes associated with Wind/Solar dispatchability improvements have been sought by Market Participants. This will improve the financial business cases of these assets located in certain parts of the network. This will support a low carbon power system.
	Publish a recommendations paper to the CRU around a Long Duration Energy Storage market mechanism – **Q1 2024**	Facilitating a Low Carbon Future, Increasing Efficiency for Customers or Anticipation of Future Investments	Shaping our Electricity Future 1.1. outlined a clear need for Long Duration Energy Storage. The Governments Climate Action Plan also calls for a market mechanism for Long Duration Storage. This recommendation will outline the market signal needed for investment in this technology which our analysis has demonstrated reduces costs for customers and reduces carbon emissions.	Long Duration Storage has been evidenced to reduce overall production costs on the power system. It helps to utilise surplus renewables and facilitates congestion management. Our studies have indicated that this allows us to reduce the carbon emissions on the power system.

[5] Specific timelines have not been stated as they remain subject to securing funding on an all-island basis

Markets				
Year	**Milestone Title and timeline**	**PR5 Incentive (Facilitating a Low Carbon Future, Increasing Efficiency for Customers or Anticipation of Future Investments)**	**Outline how this milestone is linked to the PR5 incentive identified**	**Benefits/Outcomes for customers and market participants**
	Future Arrangements for System Services – Layered Procurement Framework – **Q3 2024**[6]	Facilitating a Low Carbon Future, Increasing Efficiency for Customers or Anticipation of Future Investments	This is putting in place the request from the SEMC in relation to Quarterly Auctions for Reserve products. It supports industry in making investment decisions to support a low carbon power system.	The SEMC articulate the benefits of the quarterly reserve auctions as providing investment certainty for market participants and promoting competition in the system services.
	Future Arrangements for System Services – Daily Auctions – **Q3 2024**	Facilitating a Low Carbon Future, Increasing Efficiency for Customers or Anticipation of Future Investments	This sets out the longer term signal for industry around the full suite of System Service products and also identified new services needed to run the power system at world leading levels of renewable penetration.	This will put in place the investment proposition for developers to invest in the right volume and mix of technologies needed to allow operation of the power system at world leading levels of renewable electricity.
2024	Complete RESS (Renewable Energy Support Scheme) 4 Auction – **Q3 2024** Complete ORESS (Offshore Renewable Energy Support Scheme) 2.1 Auction – **Q3 2024**[7]	Facilitation of Low Carbon Future and Anticipation of Future Investments Facilitation of Low Carbon Future and Anticipation of Future Investments	The RESS Scheme ensures that we are on a pathway to meet our ambitious climate targets and lays the foundations of a thriving and cost effective renewable electricity market. This will support the growth of the green economy and also create sustainable work opportunities	RESS Auctions will ultimately benefit the consumer as renewables become more cost effective.

[6] Note dates are dependent on the SEMC publishing a decision paper in October 2023. Any changes from the consultation to the decision (e.g., Secondary Trading) may result in longer times required by EirGrid.

[7] RESS auctions are completed by EirGrid on behalf of DECC and timelines noted here are latest available from DECC

Markets				
Year	**Milestone Title and timeline**	**PR5 Incentive (Facilitating a Low Carbon Future, Increasing Efficiency for Customers or Anticipation of Future Investments)**	**Outline how this milestone is linked to the PR5 incentive identified**	**Benefits/Outcomes for customers and market participants**
2025	Implement Tranche 2 of the Scheduling & Dispatch Programme[8]	Facilitating a Low Carbon Future and Increasing Efficiency for Customers	These services are all needed to allow high levels of non-synchronous penetration on the system and thus support a low carbon power system. They also ensure we schedule the new technologies and unlock savings for customers.	Allowing reserves from new technologies to be scheduled allows for more efficient dispatch of the power system, thus leading to more efficient outcomes for customers and also allowing a higher level of renewable electricity.
	Go-Live of Layered Procurement Framework for Future Arrangements for System Services i.e., quarterly auctions for reserve – **Q2 2025**[9]	Facilitating a Low Carbon Future, Increasing Efficiency for Customers or Anticipation of Future Investments	This is putting in place the requirement from the SEMC (Single Electricity Market Committee) in relation to Quarterly Auctions for Reserve products. It supports industry in making investment decisions to support a low carbon power system.	The SEMC articulate the benefits of the quarterly reserve auctions as providing investment certainty for market participants and promoting competition in the system services.
2025	Complete RESS 5 Auction – **2025**	Facilitation of Low Carbon Future and Anticipation of Future Investments	The RESS Scheme ensures that we are on a pathway to meet our ambitious climate targets and lays the foundations of a thriving and cost effective renewable electricity market. This will support the growth of the green economy and also create sustainable work opportunities	RESS Auctions will ultimately benefit the consumer as renewables become more cost effective.

[8] Note that firm timelines cannot be provided. This is an all -island market programme and is subject to funding approval from the Utility Regulator

[9] Note dates are dependent on the SEMC publishing a decision paper in October 2023. Any changes from the consultation to the decision (e.g., Secondary Trading) may result in longer times required by EirGrid. It also requires the requisite funding to be in place from the Regulatory Authorities.

Markets				
Year	**Milestone Title and timeline**	**PR5 Incentive (Facilitating a Low Carbon Future, Increasing Efficiency for Customers or Anticipation of Future Investments)**	**Outline how this milestone is linked to the PR5 incentive identified**	**Benefits/Outcomes for customers and market participants**
	Complete ORESS 2.2 Auction – **2025**[10]			
2026	Go-Live of Daily Auctions for Future Arrangements for System Services **Q4 2026**[11]	Facilitating a Low Carbon Future, Increasing Efficiency for Customers or Anticipation of Future Investments	This sets out the longer term signal for industry around the full suite of System Service products and also identified new services needed to run the power system at world leading levels of renewable penetration.	This will put in place the investment proposition for developers to invest in the right volume and mix of technologies needed to allow operation of the power system at world leading levels of renewable electricity.
2027-2028	To be included in future MYP subject to PR6	To be included in future MYP subject to PR6	To be included in future MYP subject to PR6	To be included in future MYP subject to PR6

4.3. Operations

The workstreams included below should not be considered as a complete reflection of our incentive proposals associated with Operations. There are a number of other PR5 incentives associated with Operations that the TSO are required to report on to CRU and are included in other incentive reports.

[10] Timelines in line with the RESS Auction Schedule as published by DECC (Department of Environment, Climate and Communications)
[11] Note that this requires the requisite funding to be in place from the Regulatory Authorities.

Operations				
Year	**Milestone Title and timeline**	**PR5 Incentive(s) (Facilitating a Low Carbon Future, Increasing Efficiency for Customers, Anticipation of Future Investments)**	**Outline how this milestone is linked to the PR5 incentive(s) identified**	**Benefits/Outcomes for customers and market participants**
2024	Have entered into contractual arrangement for the delivery of Low Carbon Inertia Service for the power system **Q1 2024**	Facilitating a low carbon future Anticipation of Future Investments	Delivery this milestone will facilitate a low carbon future as it will provide inertia to the power system by low carbon providers, facilitating the reduction of conventional units on the system and facilitating more renewables. Entering contractual arrangements will enable developers to invest in low carbon technologies.	Delivery of the required system services will enable the transition to our 2030 targets, by procuring and facilitating investment in low carbon technologies. Continued secure operation of the power system while operating the future power system with fewer conventional synchronous generators.
	Commence the implementation plan to facilitate hybrid technology connections[12] **Q2 2024**	Facilitating a low carbon future Increasing Efficiency for Customers Anticipation of Future Investments	The facilitation of hybrid connection will increase the efficiency for customers by increasing the utilisation of the existing connection points in the system. Commencing the implementation plan will facilitate low carbon future and anticipate future investment in allowing greater utilisation of grid for hybrid technology connections.	Greater utilisation of existing infrastructure and support great build out of low carbon technologies Increase the electricity provided to the consumers to support the Climate Action Plan targets. More efficient project costs and potential to reduce lead time to deliver an increase in renewable energy production.
	Complete studies/analysis to inform the decision to commence 80% System Non Synchronous Penetration (SNSP) trial. **Q3 2024**	Facilitating a low carbon future Increasing Efficiency for Customers	Achieving this milestone will support the commencement of an 80% SNSP trial, undertaking this trial will facilitate greater energy production from low carbon technologies and reduce the levels of curtailment leading to a more efficient operation of the power system for consumers	Operating the future power system at an increased level of SNSP will accommodate a greater penetration of variable non-synchronous RES and keeping curtailment levels to a minimum

[12] Subject to Regulatory Authority decision and approvals

Operations				
Year	**Milestone Title and timeline**	**PR5 Incentive(s) (Facilitating a Low Carbon Future, Increasing Efficiency for Customers, Anticipation of Future Investments)**	**Outline how this milestone is linked to the PR5 incentive(s) identified**	**Benefits/Outcomes for customers and market participants**
	Develop business specifications for priority tools and capability outlined in the Control Centre of the Future Implementation Plan[13] **Q4 2024**	Facilitating a low carbon future Increasing Efficiency for Customers Anticipation of Future Investments	Completing this milestone will detail the requirements to progress the develop of new tools and capabilities to facilitate more low carbon technologies on the system. These tools and capabilities will increase the efficiency in operating the power system and support the investment in new technologies.	Develop tools and capabilities to operate the future power system to accommodate large penetrations of variable non-synchronous RES and keeping curtailment levels to a minimum
2025	Complete studies/analysis to inform the decision to implement System Strength Policy **Q4 2025**	Increasing Efficiency for Customers	Implementing System Strength will support the continued secure operation of the power system, increasing the efficient operation of the power system	Identifying technical scarcities and operational needs and clarifying the system technical needs – both now and projected for the future will ensure continued secure operation of the power system
	Commence implementation and trialling of grid forming technology, models, and analysis **Q4 2025**	Facilitating a low carbon future Increasing Efficiency for Customers	Delivery of the milestone will commence the implementation of analysis and modelling to support the roll out of grid forming technology to facilitate more low carbon technologies and develop more efficient grid operations into the future	Greater utilisation of existing infrastructure and support great build out of low carbon technologies Increase the electricity provided to the consumers to support the Climate Action Plan targets.
	Commence a procurement process for low carbon inertia services Phase 2[14] **Q4 2025**	Facilitating a low carbon future Increasing Efficiency for Customers Anticipation of Future Investments	Delivery this milestone will facilitate a low carbon future as it will provide inertia to the power system by low carbon providers, facilitating the reduction of conventional units on the	Delivery of the required system services will enable the transition to our 2030 targets, by procuring and facilitating investment in low carbon technologies.

[13] Subject to Regulatory Authority approvals
[14] Subject to Regulatory Authority approvals

Operations				
Year	**Milestone Title and timeline**	**PR5 Incentive(s) (Facilitating a Low Carbon Future, Increasing Efficiency for Customers, Anticipation of Future Investments)**	**Outline how this milestone is linked to the PR5 incentive(s) identified**	**Benefits/Outcomes for customers and market participants**
			system and facilitating more renewables.	Continued secure operation of the power system whilst operating the future power system with fewer conventional synchronous generators.
	Implement new codes and standards applicable to the largest customers to ensure system security can be maintained **Q4 2025**	Increasing Efficiency for Customers Anticipation of Future Investments	Milestone delivery will ensure the continued efficient secure operation of the power system and give investment certainty to the largest customers as customers will be obligated to follow the same codes and standards.	Customer will have clarity on operating parameters. The power system will be able to identify technical scarcities and operational needs and clarifying the system technical needs – both now and projected for the future.
2026-2028	To be included in future MYP subject to PR6	To be included in future MYP subject to PR6	To be included in future MYP subject to PR6	To be included in future MYP subject to PR6

5. Initiatives – Actions and Deliverables

5.1. Networks

There needs to be a transformational step change in the volume of network reinforcement delivered across the transmission network which is required to support the delivery of the Irish Government's climate targets in an efficient and effective manner. This work also ensures greater efficiency and protection of customers.

The initiatives outlined below are directly aligned with the transmission network developments out to 2030. The future evolution of the power system beyond 2030 is also implicitly considered in delivering on ambitions to be carbon neutral before 2050.

There are a number of key strategic enablers that have been identified as being fundamental for infrastructure delivery within the required timeframes out to 2030 in the first instance and beyond that to eventually decarbonise our power system. These have been identified based on a combination of project delivery experience and arising from engagement with stakeholders and communities. Some of the key enablers proposed under this initiative are described below.

5.1.1. Tomorrow's Energy Scenarios

Tomorrow's Energy Scenarios (TES) sets out a range of pathways for Ireland to reach net zero emissions. The scenarios have been defined to provide different pathways for the future power system, in the expectation that what actually happens in the future will take elements of all the scenarios. Our scenarios are reviewed periodically to take account of changes in policy, demand, and technology. We will use the TES outputs as the starting point for testing the performance of the electricity transmission grid and how it will need to develop out to 2050.

5.1.2. Outage Transformation

The availability of sufficient outages and the utilisation of these outages is a fundamental part of the programme of works for delivering network reinforcements. This is a key constraint that must be managed both before and during maintenance works and project delivery.

There is currently a significant challenge in facilitating the outages required out to 2030. In order to mitigate this, a fundamental review of outage processes and methodologies is underway including an international review of best practises for outage management. Significant transformation is needed in this area in order to accelerate grid delivery. The key areas of focus for transformation are outage availability and utilization.

Based on experience of outage constraints, early consideration of outage requirements has been identified as a key enabler for project delivery. This means that outages will feed into the decision making and "optioneering" for projects in terms of deliverability.

The optimisation of the Network Delivery Programme (NDP) currently targeted in 2024 is a process that seeks to produce a robust portfolio of projects including known constraints such as outages. Coupling this with an alignment of projects/programmes will facilitate EirGrid's ability to accommodate the necessary transmission outages and enable EirGrid and ESB Networks to improve utilisation of these outages.

The Outage Transformation programme will enable the improvement of availability and utilisation of transmission outages as well as improving the management and prioritisation of the portfolio of projects required to deliver the required networks enhancements over the coming years. Improved forecasting will be a result of the programme allowing for the appropriate application of required resources to accommodate the volume of work over the coming years. It is anticipated that projects/programmes in the outage season of 2025 will yield the significant benefits of this programme. In the meantime, EirGrid and ESB Networks will continue to work closely to deliver the outage programme and in turn the NDP as effectively and efficiently as possible.

5.1.3. Asset Management

Asset Reliability Report

The Asset Reliability Report will calculate the reliability performance of transmission assets over the period 2017 – 2023 and benchmark against published international data. The report will provide data to the EirGrid System Planning Team and will assist the team with making transmission system planning decisions into the future. In addition, the reliability performance will be used as inputs for planning maintenance activities, identifying trends and asset management.

Review and identification of opportunities for changing from Time Based Maintenance to Condition and Risk Based

The aim of this strategic objective will be to review opportunities to move from our current Time-Based Maintenance Strategy closer to the Condition or Risk Based Strategies that aim to make maintenance decisions based on asset condition and role within the system and finding a balance between cost, risk, and performance. Due to the extent of outages required to facilitate capital expenditure works on the transmission system, outage availability for transmission maintenance activities is becoming increasingly challenging. This is a challenge that is being experienced by TSO's globally and many are exploring new maintenance strategies.

Actions and Deliverables – Networks

Year	Milestone	Actions	Deliverables
2024	Publish Tomorrow's Energy Scenarios	• Prepare Scenario Framework - 2023 • Consult on Scenarios – Q4 2023 • Update Scenario Analysis Publication of Final Scenarios	Publication of Tomorrow's Energy Scenarios
	Outage Transformation – commence the implementation of the Outage Transformation Roadmap Optimise the Network Delivery Programme (NDP) and integrate outage constraints	Projects in the Network Delivery Programme will be analysed and assessed in terms of the requirements for outages (duration, timing, complexity etc) and how they can be accommodated in the overall outage programme.	An updated, constrained Network Delivery Programme will be developed and published that includes project completion dates that have been reviewed in the context of known outage constraints
	Implementation of the Outage Transformation Roadmap coupled with the optimised NDP	This roadmap will involve a range of initiatives which will drive the transformation of the development and delivery of the outage programme. The key actions will be on increasing outage utilisation, optimisation, and availability. It is anticipated that projects/programmes in the outage season of 2025 will yield the benefits of the Outage Transformation Roadmap however the implementation of the roadmap will commence in 2024.	The key deliverable following the implementation of this roadmap is the development and delivery of an optimised outage programme.

Year	Milestone	Actions	Deliverables
2024	Participation in the International Transmission Asset Management Survey (ITAMS)	ITAMS is a Global Learning Consortium conducted every two years by UMS Group. The ITAMS program focuses on the tactical level of Asset Management.	Participation in this international benchmarking exercise will provide a valuable comparator against similar organizations in both Asset Management practices and results (value realisation) and where there is room for improvement versus “best practice”.
	Asset Reliability Report	Calculation of the reliability performance of transmission assets over the period 2017 – 2023 and benchmark against published international data.	Asset Reliability Report completed
2025	Review and identification of opportunities for changing from Time Based Maintenance to Condition and Risk Based	Review opportunities to move from our current Time-Based Maintenance Strategy closer to the Condition or Risk Based Strategies that aim to make maintenance decisions based on asset condition and role within the system and finding a balance between cost, risk, and performance.	Report detailing findings of the review and opportunities for improvements
	Implementation of the Outage Transformation Roadmap coupled with the optimised NDP	Implementation of the Outage Transformation Roadmap will continue in 2025. This roadmap will involve a range of initiatives which will drive the transformation of the development and delivery of the outage programme. The key actions will be on increasing outage utilisation, optimisation, and availability. It is anticipated that projects/programmes in the outage season of 2025 will yield the benefits of the Outage Transformation Roadmap.	The key deliverable following the implementation of this roadmap is the development and delivery of an optimised outage programme.

5.2. Markets

The Single Electricity Market (SEM) will play an integral role in providing the necessary incentives for third-party investment and the financial support needed for renewable assets. This is key for the procurement of necessary energy and system services needed to operate the power system at high levels of electricity from Renewable Energy Sources (RES-E).

Achieving this goal will require industry stakeholder commitment and extensive engagement with governments, Regulatory Authorities, market participants, consumers, and other interested parties to agree, develop and approve the market rules, process and market system changes needed to achieve the 2030 targets.

To achieve the higher levels of renewable supply mandated in the Renewable Ambition, will require additional system and adequacy services to be available to ensure we can meet demand requirements securely with close to 95% non-synchronous generation. The alignment between the energy, capacity, system services markets, and related investment drivers with operational requirements is essential. Failure to do so may increase the risk of inefficient investment resulting in higher than necessary costs to the consumer and the risk of falling short of the 2030 targets.

There are currently a number of key inflight programmes of work in the markets area to help support the energy transition.

5.2.1. Scheduling and Dispatch

Renewable Energy Sources (RES) in the SEM have priority dispatch which effectively means their output is maximised in dispatch – e.g., whatever they are producing (based on the weather conditions) is used by the TSOs in dispatch, displacing other generation (fossil fuel), subject to security of supply and other statutory requirements. RES is dispatched down (turned down or off) only as a last resort for two reasons - curtailment (too much wind overall) or constraint (too much in a part of the network). Following decisions at European level in the Clean Energy Package, changes to how wind is to be treated in dispatch and redispatch (Article 12 & Article 13) have been under consideration by the Regulatory Authorities (RA).

The EU Clean Energy Package (CEP) has a number of implications for SONI's operations. In particular, CEP requires that TSOs provide for the dispatch of 'non-priority dispatch' renewables (until this point, renewables in the SEM have been subject to priority dispatch, functioning as 'price-takers' in the market to ensure this). In support of Northern Ireland Government renewables targets for the electricity sector, SONI has also undertaken to define and implement a set of initiatives to allow them to operate the system under conditions of 80% total renewable energy and 95+% system non-synchronous penetration (SNSP) on an instantaneous basis. A number of these initiatives relate to how the system is scheduled and dispatched, and in conjunction with the related changes required to support compliance with the CEP we have grouped these together into the Scheduling & Dispatch Programme (SDP).

The RA decision paper on Dispatch, Redispatch and Compensation pursuant to Regulation (EU) 2019/43 (SEM-22-009) was published following on previous consultations relating to Articles 12 and 13 of the Clean Energy Package. Decisions included (but were not limited to) the following:

- Treatment on non-priority dispatch RES (and other previously eligible units) in dispatch
- Compensation for non-market based redispatch down of generation
- Timeline for pay-out of compensation.

The decision also acknowledges the complexity of issues, which will require workshops and engagement between SONI TSO and EirGrid TSO (due to the all-island nature of the system) and industry to discuss future solutions.

The functional scope of the SDP is under Tranche 1 and Tranche 2. Tranche 1 involves the treatment of Non-Priority Dispatch Renewable of renewables in scheduling and dispatch, Energy Storage Power Station (ESPS) integration and wind dispatchability improvements. Tranche 2 involves Fast Frequency Response (FFR), reserve services scheduling and dispatch and synchronous condenser scheduling and dispatch.

The Programme Phases are currently defined as:

- Phase 1 – Analysis – Completed ✓
- Phase 2 – Detailed Design: detailed market design; process definition; detailed definition of solution requirements; selection of solution/service providers; rule/code change definition, etc. – Commenced
- Phase 3 – Implementation: of system and service provider solutions; testing; data; procedure definition; operational capability changes, etc.
- Phase 4 – Readiness & Rollout (may overlap other phases): training; market and operational readiness; trailing/commissioning; rollout and cutover.
- Phase 5 – Support: enhanced support through operational stability; planning for deferred items

Phases *3 to 5* will commence during the period outlined in this Multi-Year Plan and the approach to these phases is delivery via:

Phase 3

Implementation: This phase will implement the people, process, and technology changes for the Scheduling & Dispatch initiatives. It will carry out the main activities of system build, formal arrangement approval, business process definition and external engagement including participant testing. The activities of phase 3 will follow the proven market and system change processes used in previous major projects relating to SEM changes. These are formal arrangements proposed to relevant committees, system build, test approach and associated artefacts, conduct solution testing, Business Process Definition (L2) & Procedures Definition (L3) and training approach & plan

Phase 4

Readiness & Rollout: This phase will conduct internal and external readiness for the introduction and incorporation of Scheduling & Dispatch changes to the people, processes, and technology. It will focus on preparing the business and industry for the introduction of the Scheduling & Dispatch initiatives as well as preparing and delivering on the system deployment and cutover. The activities of phase 4 will follow the proven market and system change processes used in previous major projects relating to SEM changes. These are stakeholder engagement, business training, business readiness assessment, market participant training, market participant readiness assessment, deployment/cutover plans, and go/no-go approvals.

Phase 5

Support: This phase will support the implementation in the period immediately following go live and also formally close out the programme in a controlled manner. The activities of phase 4 will follow the proven market and system change processes used in previous major projects relating to SEM changes. These are system and business post go live support, transition support to operational teams and programme close out.

5.2.2. Future Arrangements for System Services

The Future Arrangements for System Services (FASS) project was formally launched by the SEM Committee (SEMC) in July 2020. This project is aligned under our Markets pillar of work within our Shaping Our Electricity Future Roadmap. The SEMC consulted on the System Services Future Arrangements High Level Design (SEM-21-69) from August to October 2021. A decision on the High-Level Design (HLD) was published in April 2022 (SEM-22-012 FASS High Level Design Decision Paper).

EirGrid has engaged with the Regulatory Authorities[15] (RAs) to provide all information requested to aid in the SEMC HLD decision making process. The CRU priority regarding the facilitation of new technologies plays a key part in this programme. In the future, it is expected that the TSOs will increasingly contract for the provision of System Services from new technology types. These will likely include, amongst others, solar PV units and residential demand aggregators. It is anticipated that units aggregating residential demand will provide certain operating reserve services in the coming years. The Qualification Trial Process[16] provides a mechanism for trialling new technologies for the provision of system services.

The existing system services arrangements (DS3) were designed to meet the 2020 renewable targets of 40% RES-E and will not be sufficient to deliver the needed capability to achieve the target of 80% renewable generation by 2030. Attracting investment and procuring sufficient volumes of system services capability from both existing service providers and new prospective providers, will be critical to meeting this target. It is important that the design for the future arrangements is agreed as soon as possible to ensure that appropriate arrangements can be implemented to further ensure that there is no break in the investment that is needed to meet 2030 targets.

EirGrid is currently working with the RAs on scoping the full programme of work. We expect this will include phases such as Establishment, Procurement, Design, Build and Operate. There is a growing need to drive new investment in system services to meet the technical challenges of managing real time operations of up to 95% SNSP by 2030. The suggested introduction of a new system services market design will need a number of years to mature to deliver the necessary investment in the required services.

The plan we have proposed has significant project implementation risks. These potential risks include the need for timely and appropriate regulatory decisions, both market design and programme resourcing, as well as a complimentary application of resources by EirGrid and SONI in delivering to these challenging timelines. This can only be achieved with a coordinated and focused industry working together to successfully achieve the Renewable Ambition.

5.2.3. Long Duration Storage

A key output of Shaping Our Electricity Future v1.1 (July 2023) is that there is a need for Long Duration Energy Storage (LDES). This is needed to facilitate storing renewable electricity during times when renewables exceed the system demand. It also allows for congestion management on the transmission system, where a local network bottleneck does not allow us to get the renewables from where it is generated to where it is needed. This supports overall a reduction in carbon emissions on the power system and helps reduce consumer costs.

[15] The Regulatory Authorities (RAs) consist of the Utility Regulator for the Northern Ireland and the Commission for the Regulation of Utilities (CRU) for the Republic of Ireland.

Industry feedback is that there is a remuneration gap for investors to develop LDES. To investigate this the Market Operators and Transmission System Operators have commenced work, which will feed into a future expected decision by the SEM Committee, on this matter.

The tasks undertaken so far include:

- A dedicated manager and team have been put in place.
- Engagement with industry representative bodies, government agencies, the Distribution System Operators, and the Regulatory Authorities
- Shaping Our Electricity Future indicates the volume, duration, and locations for LDES. We are also investigating further studies to look at the impact of not being able to deliver LDES, to support any regulatory submissions around the needs case.
- We have engaged a strategic partner, who has significant developer experience, to advise on the costs an investor would incur to develop LDES. This will support us in developing the remuneration needed to incentivise LDES; and
- Work has been ongoing on the market options available to incentivise LDES. The options could include existing mechanisms such as the Capacity Remuneration Market or System Services. Equally it could be a new mechanism such as a support scheme, similar to the Renewable Electricity Support Scheme (RESS) in Ireland. We will engage with industry on these options, prior to making a formal recommendation to the RAs. Further industry engagement will take place during 2023 and 2024 in relation to this new product.

5.2.4. RESS Auctions

The Renewable Electricity Support Scheme (RESS) is a Government of Ireland initiative that provides support to renewable electricity projects in Ireland. EirGrid has been tasked with operating the RESS auctions (including qualification) on behalf of the Government of Ireland. RESS is a pivotal component of Programme for Government and the Climate Action Plan 2021 and is a major step in achieving Ireland's target of at least 80% renewable electricity by 2030. Support under RESS is allocated by way of auctions. RESS auctions will be delivered by Department of Environment, Climate and Communications (DECC) with the support of Commission for Regulation of Utilities (CRU) and EirGrid, the Transmission System Operator (TSO).
With a primary focus on cost effectiveness, the RESS delivers a broader range of policy objectives, including:

- providing an Enabling Framework for Community Participation through the provision of pathways and supports for communities to participate in renewable energy projects
- increasing technology diversity by broadening the renewable electricity technology mix
- delivering an ambitious renewable electricity policy to 2030.
- increasing energy security, energy sustainability and ensuring the cost effectiveness of energy policy

Action and Deliverables - Markets

Year	Milestone	Actions	Deliverables
2024	Implement Tranche 1 of the Scheduling & Dispatch Programme[17]	Tranche 1 of the Scheduling & Dispatch Programme includes Operation of Non-Priority Dispatch Renewables, Energy Storage Power Station, and Improvements to Wind/Solar Dispatchability. For Operation of Non-Priority Dispatch Renewables this will implement aspects of the SEMC decision outlined in SEM-22-009	Changes to the market systems to implement the required RA changes associated with Non-Priority Dispatch Renewables. Changes to the market systems to allow market participants submit negative Physical Notifications (PNs). Changes to the dispatch systems to allow for more equitable dispatching of wind/solar
	Publish a recommendations paper to the CRU around a Long Duration Energy Storage market mechanism	The development of this recommendations paper will follow an industry consultation that will be completed in 2023. The actions to complete this milestone involve the collation and analysis of the results from the consultation process and the development of the recommendations paper which will be provided to CRU.	Recommendations paper on Long Duration Energy Storage Market Mechanism will be submitted to the RAs. This will include the need, the funding gap, and a recommended option to address this.
	Future Arrangements for System Services – Layered Procurement Framework[18]	The actions associated with this workstream include the development of: a) Design Consultation Paper – Q2 2024 b) Design Recommendations Paper – Q3 2024	• TSOs will publish a Design Consultation Paper on the layered procurement framework • TSOs will submit a Design Recommendations Paper to the RAs on the layered procurement framework

[17] Specific timelines have not been stated as they remain subject to securing funding on an all-island basis

[18] Note dates are dependent on the SEMC publishing a decision paper in October 2023. Any changes from the consultation to the decision (e.g., Secondary Trading) may result in longer times required by EirGrid.

Year	Milestone	Actions	Deliverables
2024	Future Arrangements for System Services – Daily Auctions	The actions associated with this workstream include the development of: a) Procurement Design Recommendations Paper – Q2 2024 b) Product Review Consultation Paper – Q2 2024 c) Product Review Recommendations Paper – Q3 2024	• TSOs will submit a Procurement Design Recommendations Paper to the RAs on the daily auction framework • TSOs will publish a Product Review Consultation Paper for the daily auction framework • TSOs will submit a Product Review Recommendations Paper to the RAs
	Complete RESS 4 Auction Complete ORESS 2.1 Auction	The actions associated with this workstream include the development of: a) Conduct and complete Qualification Process b) Conduct and Complete Auction Process c) Conduct and Complete Post Auction Process	• Qualification Information Pack Published • Auction Information Pack Published • Auction Results Published
2025	Implement Tranche 2 of the Scheduling & Dispatch Programme[19]	Tranche 2 of the Scheduling & Dispatch Programme includes Fast Frequency Response, Reserve Services Scheduling and Dispatch and Synchronous Condenser Scheduling and Dispatch.	The market systems will be updated to allow us to schedule and dispatch the full suite of reserves from new technologies. It will also allow for the scheduling and dispatch of synchronous compensators.
	Go-Live of Layered Procurement Framework for Future Arrangements for System Services i.e., quarterly auctions for reserve[20]	Actions are putting in place the requirement from the SEMC in relation to Quarterly Auctions for Reserve products.	The approved design from the SEM Committee for layered procurement framework (quarterly auctions for reserve) will go-live to market participants.

[19] Note that firm timelines cannot be provided. This is an all -island market programme and is subject to funding approval from the Utility Regulator

[20] Note dates are dependent on the SEMC publishing a decision paper in October 2023. Any changes from the consultation to the decision (e.g. Secondary Trading) may result in longer times required by EirGrid. It also requires the requisite funding to be in place from the Regulatory Authorities

Year	Milestone	Actions	Deliverables
	Complete RESS 5 Auction Complete ORESS 2.2 Auction[21]	The actions associated with this workstream include the development of: a) Conduct and complete Qualification Process b) Conduct and Complete Auction Process c) Conduct and Complete Post Auction Process	• Qualification Information Pack Published • Auction Information Pack Published • Auction Results Published
2026	Go-Live of Daily Auctions for Future Arrangements for System Services[22]	Actions are putting in place the requirement from the SEMC in relation to Daily Auctions.	The approved design from the SEM Committee for the daily auction framework will go-live to market participants.

[21] Timelines in line with the RESS Auction Schedule as published by DECC
[22] Note that this requires the requisite funding to be in place from the Regulatory Authorities

5.3. Operations

In order to deliver on government renewable energy policies, it will be necessary to accommodate unprecedented levels of variable non-synchronous RES such as offshore wind, onshore wind, and solar whilst keeping curtailment levels to a minimum.

This will require a significant evolution of the operation of the power system and for EirGrid and SONI to deal with unique challenges that will not be faced in larger more heavily AC (Alternating Current) interconnected power systems for years to come.

We have developed a programme of work which will enable us to enhance our power system operational capability out to 2030. This all-island programme of work will build upon the programme of activity that was carried out, and the extensive knowledge, learnings and experience developed, as part of the "Delivering a Secure Sustainable Electricity System" (DS3) Programme which was a key enabler in achieving the 2020 RES-E target of at least 40%.

This programme of work is focused on ensuring we have the system services that are required to support managing the resilience of the power system. New system service capabilities from low carbon sources are required to address the technical and operational challenges arising from the need to operate with SNSP levels up to 95% by 2030. In addition, it will help release the full potential of demand-side flexibility which will be critical to ensuring we can enable the transition to high levels of RES-E and facilitate electrification of the heat and transport sectors while maintaining power system security. In 2022, we published Phase 2 of an "Operational Policy Roadmap to 2023 - 2030" which set out our plans to the end of 2030 across a range of key metrics. This roadmap will be reviewed and updated every two years.

The System Operations work will be arranged around four main workstreams:

1. **Operational Policy:** The objectives of this workstream are to undertake operational studies and analysis and develop operational policies to facilitate the transition to 80% RES-E by 2030.
2. **Standards & Services:** The objective of this workstream is to ensure we have the appropriate operational standards and system services frameworks to support investment in required capability.
3. **Operational Tools:** The objective of this workstream is to identify and oversee the delivery of enhanced and new integrated control centre technologies and tools that are required to operate the system securely and efficiently with increasing levels of variable non-synchronous RES; and
4. **Technology Enablement:** The objective of this workstream is to facilitate the development and integration of new technologies and innovations on the power system to enable them to operate efficiently and effectively.

Some of the key activities arising from these workstreams included in the Operations section of the Multi-year Plan in Section 4. The System Operations objectives will also include considerable interaction and engagement with the DSO, which is captured under the TSO/DSO incentive.

Action and Deliverables - Operations

2024 deliverables for the System Operations initiatives for this incentive are detailed below. At this stage it is not practical to provide detailed information on the actions and deliverables post 2024. More detail on the proposed deliverables for future years will be provided as part of the 2025 submission.

Year	Milestone	Actions	Deliverables
2024	Have entered into contractual arrangement for the delivery of Low Carbon Inertia Service for the power system	Actions involve the completion of the Request for Proposal and the publication of notices of award.	• Publication of notices of award of contract • Evidence of execution of contractual arrangements with successful participants of the Request for Proposal
	Commence the implementation plan to facilitate hybrid technology connections[23]	Carry out assessment of Regulatory Authority decisions. Commence workstreams relating to facilitating hybrid technology connections	• Presentation to RAs on assessment of decisions and timelines to implement
	Complete studies/analysis to inform the decision to commence 80% SNSP trial	All required studies and analysis to be completed.	Summary report of the completed studies/analysis to inform the decision.
	Develop business specifications for priority tools and capability outlined in the Control Centre of the Future Implementation Plan[24]	Complete business specifications for priority tools and capability outlined in the Control Centre of the Future Implementation Plan	Business specifications as described

[23] Subject to Regulatory Authority decision and approvals
[24] Subject to Regulatory Authority approval

6. Interdependencies/Assumptions

Some of the milestones outlined in the sections above are reliant on a number of key macro interdependencies and assumptions. Foremost amongst these are Price Review 6 (PR6), prompt decision-making from the regulatory authorities, a stable wider policy environment and close cooperation from the two DSOs on the island of Ireland.

The development of this multi-year incentive plan takes place within the context of the development of the broader PR6 programme and submission process. It is therefore not considered prudent to make specific programmatic commitments without firstly considering the alignment with the strategic elements of the future PR6 submission. Further detailed information is expected to be available for the 2025 incentive plan development.

There are some references to these dependencies in the tables and in general it is assumed, for any deliverables which are reliant on a pilot, regulatory decision, or statutory decision in advance, that the necessary pre-requisite or dependency has been successfully achieved in a timeframe allowing for any required subsequent action by EirGrid for their delivery.

The 2024 plan is more detailed, and it is envisaged that the detail of subsequent years will be refined and updated in subsequent revisions to the multi-year plan.

7. Performance Assessment

We propose the balanced scorecard be weighted evenly across the workstream initiatives with deliverables to be achieved in each calendar year. For each of the initiatives proposed above, the outcome is clear. In the TSO outturn performance report to CRU each year we will evidence how we have performed against the multi-year programme, incorporating feedback from stakeholders as proposed in the PR5 incentives framework.

The potential allowed upside in each calendar year is €0.5 million. We propose that the allowed upside be calculated on a linear basis with the quantum of deliverables achieved per calendar year directly related in percentage terms to the allowed upside.

8. Acronyms

Acronym	Definition
AC	Alternating Current
CAP	Climate Action Plan (Government 2030 Targets)
CRU	Commission for Regulation of Utilities

CEP	Clean Energy Package
DECC	Department of Environment, Climate & Communications
DHPLG	Department of Housing, Planning, & Local Government
DS3	Delivering a Secure Sustainable Electricity System Programme
DSO	Distribution System Operator
ESBN	ESB Networks
ETBI	Education and Training Board Ireland
EU	European Union
FFR	Fast Frequency Response
GB	Great Britain
ISO55001	International Organisation for Standardisation – standard 55001 is for Asset management – Management systems
ITAMS	International Transmission Asset Management Survey
MWs	Megawatt-second – measurement of inertia
MYP	Multi-Year Plan
NDP	National Development Plan
NSEE	Networks Stakeholder Engagement Evaluation
OLCM	Online condition monitoring
PR5	Price Review 5
PR6	Price Review 6
PN	Physical Notification
RA	Regulatory Authorities
RES	Renewable Energy Systems

RES-E	Electricity from Renewable Energy Sources
RESS	Renewable Electricity Support Scheme
ORESS	Offshore Renewable Electricity Support Scheme
RGI	Renewables Grid Initiative
SEM	Single Electricity Market
SEMC	Single Electricity Market committee
SDP	Scheduling & Dispatch Programme
SNSP	System Non-Synchronous Penetration
SOEF	Shaping Our Electricity Future
TAO	Transmission Asset Owner
TES	Tomorrow's Energy Scenario
TSO	Transmission System Operator