



SINGLE ELECTRICITY MARKET COMMITTEE

System Services Future Arrangements

Phase III: Detailed Design & Implementation

Phased Implementation Roadmap for the System Services High Level Design

Consultation Paper

SEM-23-043

7 June 2023

EXECUTIVE SUMMARY

The SEM Committee published its High Level Design (HLD) Decision Paper in April 2022 (SEM-22-012). This Consultation paper sets out the SEM Committee's proposed approach to the phased transition from the current regulated tariff framework to the full implementation of the HLD Decision, and is the result of ongoing RA/TSO engagement. Industry feedback from the HLD consultation process included clear requests for a phased transition period and on-going consultation with industry on the implementation of the HLD. Additionally, there is a clear need to introduce competition in system services both to facilitate the climate targets in Ireland and Northern Ireland and to ensure consumer value from the money spent on system services. Accordingly, the SEM Committee has taken into consideration the need to introduce competition quickly, progress the implementation of the full set of arrangements, and the need for an incremental and stable transition to the new arrangements.

The phased transition roadmap proposed in this paper comprises a number of elements:

- Extending the current tariff arrangements and a phased reduction of tariff rates.
- Early implementation of competitive procurement for reserve services, through a simplified and pragmatic process.
- This will be followed by a full implementation of the Layered Procurement Framework and the phased introduction of Daily Auctions for the full range of system services, noting that work developing these arrangements will happen in parallel.
- Phased introduction of the governance arrangements set out in the HLD, starting with those elements necessary to run the first Layered Procurement auction including the introduction of a Code and establishment of a standalone System Service charge (to recover the required revenues to cover the costs of payments to providers), and then built upon incrementally in consultation with industry.
- In parallel to the implementation of the first auction the TSOs will consult on the volumes methodology and reporting, carry out a product review, and consult on its locational methodology. It is proposed that the volumes deliverables will be prioritised. The SEM Committee expects that the product review will be sufficiently advanced ahead of the first auction to enable informed progress.

The SEM Committee considers that this approach will ensure the early introduction of competition, allowing expenditure to be targeted at the providers most needed by the system and prices to be set by market forces. This phased incremental approach will facilitate a stable transition to fully competitive arrangements, where providers and the TSOs will gain experience in the operation of the auctions and can adjust to the market dynamics.

This approach to the transition to the full implementation of the HLD will also allow for more engagement with stakeholders and industry on the basis of experience in the early phases.

The Detailed Design Next Steps & Layered Procurement Implementation consultation will remain open for eight weeks, closing on 3 August 2023. Workshops will be arranged during the consultation period, and bilateral engagements can be arranged at the request of stakeholders. Should stakeholders have any queries or comments please contact Dylan Ashe (dashe@cru.ie) or Lauren Skillen-Baine (lauren.skillen-baine@uregni.gov.uk). All responses should be submitted by email to both these addresses.

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1 INTRODUCTION

The System Services Future Arrangements (SSFA) project was formally launched by the SEM Committee in July 2020 with the publication of a Scoping Paper (SEM-20-044) for public consultation. Following on from this the SEM Committee published the SSFA Decision Paper 1 (SEM-21-021) in March 2021. This closed the scoping phase (Phase I) and initiated the High Level Design Phase (Phase II).

The High Level Design Consultation paper (SEM-21-069) was issued in August 2021, with consultation on that paper closing on 21 October 2021. The SEM Committee subsequently published its decision on the High Level Design on 14 April 2022. The decision paper set out a range of decisions that form the SSFA High Level Design. It also closed Phase II of the project and commenced Phase III, Detailed Design and Implementation.

The purpose of this paper is to provide an update to stakeholders on the implementation status of the System Services Future Arrangements (SSFA) High Level Design (HLD) decisions, to set out a potential design for the Phased Implementation Roadmap and to consult with stakeholders on the design of a competitive framework to procure the necessary volumes of FFR, POR, SOR, TOR 1 and TOR 2 through the Layered Procurement mechanism and to transition away from tariffs for these services in the short to medium term. The proposal for the Layered Procurement mechanism aims to introduce competitive arrangements serving as a pathway for implementation of the full SSFA enduring solution.

1.1 Objective and Assessment Criteria

SEM-21-021 set out a final decision on the Objective of the project and Assessment Criteria. The objective of the project is:

“to deliver a competitive framework for the procurement of System Services, that ensures secure operation of the electricity system with higher levels of non-synchronous generation.”

In order to better facilitate the achievement of this objective, the SEM Committee has developed a set of criteria for assessing the proposed framework:

- **Consumer Value:** The pricing of services will be market-based in so far as these secure competitive outcomes in order to deliver consumer value, while taking into account levels of market power for each service;
- **European Compliance:** The arrangements will comply with relevant legislation including the Clean Energy Package (CEP) and the Electricity Balancing Guideline (EBGL) Network Code;

- **System Need:** The framework will operate in a manner which ensures the needs of the system including security of supply are maintained;
- **Alignment:** The SEM Committee will seek to ensure appropriate alignment between the markets in energy, capacity, and System Services, along with all other relevant revenue streams, to ensure an efficient overall outcome for consumers;
- **Accuracy:** The volume of services procured should match the requirements of the system as accurately as possible;
- **Adaptability:** The framework should be sufficiently agile to meet any system changes caused by future policy developments;
- **Simplicity:** The framework should be sufficiently simple and transparent to be readily understood and accessible to all stakeholders;
- **Enable the Energy Transition:** The arrangements will be cognisant of policy decisions in Ireland, Northern Ireland and the UK, and will enable the energy transition in so far as possible;
- **Clarity for Investors:** The arrangements will be clear in terms of how auctions will operate, in order to give a reasonable degree of clarity to developers in terms of financing; and
- **Transparency:** The framework will be transparent such that there will be no imbalance of information among market participants, and full sight of auction results and procurement requirements will be fully visible.

1.2 Paper Structure

The Paper is structured as follows:

- Transition Roadmap for the High Level Design Implementation
- Extension of the Tariff Arrangements
- Project Governance for Phase III
- Quarterly Reserve Product Auction

2 Phased Transition Roadmap for the Implementation of the High Level Design

In the HLD Decision Paper, SEM-22-012, the SEM Committee decided to have a phased implementation of the decisions set out in the HLD and committed to developing an approach for this phased implementation. This section sets out the SEM Committee's proposals in this regard, and is the result of ongoing engagement between the RAs and TSOs.

In summary this process began with the Regulatory Authorities writing to the TSOs in June 2022 ([SEM-22-039](#)) requesting that the TSOs commence work on a range of the HLD decisions, particularly those of fundamental importance to the overall operation of the arrangements and development of the system services markets, such as volumes.

The approach set out below proposes to see work progress on the foundational issues (volumes, product design, locational methodology) with urgency. In parallel it is proposed to accelerate the delivery of the first auction for a quarterly reserve product under the Layered Procurement Framework (the "LPF"). In order to deliver this first auction quickly it is proposed to introduce several simplifications so as to avoid dependencies with other workstreams where possible.

The qualification and governance arrangements will be implemented in a phased basis, with an emphasis on those elements necessary to deliver the first auction. In terms of the transition to the full market arrangements, the HLD set out three main procurement frameworks, Fixed Contracts, the LPF, and the Day-Ahead System Services Auction (the "DASSA"). The Fixed Contracts framework is already established and will also continue to operate. The LPF implementation will progress in two stages, firstly the accelerated delivery of the first reserve auction, and secondly the phased implementation of the full LPF. The DASSA will be developed in parallel, in line with the Phased Implementation Roadmap.

The SEM Committee considers that this approach will deliver benefits sooner, provide greater clarity for industry, and ensure a stable transition to the future arrangements for current providers.

2.1 Phased Implementation Roadmap

The RAs and the TSOs have been recently engaging on the development of a Phased Implementation Roadmap, which would map out all deliverables of the SSFA along a timelines out to full implementation. This will include the delivery of the Layered Procurement Framework, the Day Ahead System Services Auction (DASSA) and all aspects of the governance decision.

As part of this engagement, the TSOs have committed to delivering the outcomes of the SEM Committee's decision on the Layered Procurement for Reserves within 18 months of publication of the Decision Paper, and will ensure that necessary licence changes or introduction of Codes will be done alongside this. The TSOs have also committed to continuing to progress work on the DASSA in parallel to the delivery of the Layered Procurement Framework.

This proposed Layered Procurement mechanism aims to act as a logical stepping stone, preparatory work introducing competitive arrangements and leading to the delivery of the full SSFA enduring solution. It is expected that there will be learnings to be carried over from one phase to another, derisking the full delivery of the enduring solution.

The SEM Committee is aiming to finalise the Phased Implementation Roadmap in the Decision Paper, and welcomes views on the deliverability of the workstreams, and any measures that can be taken to derisk the project delivery. A draft of the Roadmap is on the next page.

Consultation Question:

1. Recognising the need to deliver low carbon reserve services as early as possible in the decade¹ are there variants or alternatives to the approaches set out in this paper that the SEM Committee should consider?
2. Respondants are invited to propose ways to de-risk the delivery of the project.
3. Do respondants have views on how the learnings from the early phases of the Phased Implementation can be optimised?

¹ It is noted that the carbon budgets in Ireland, established in the Climate Action and Low Carbon Development (Amendment) Act 2021], are cumulative and therefore earlier carbon reductions will have greater impact.

Deliverable	Q2 23	Q3 23	Q4 23	Q1 24	Q2 24	Q3 24	Q4 24	Q1 25	Q2 25	Q3 25	Q4 25
Layered Procurement	Consultation period	Decision		TSO Consultations on implementation of LPF	TSOs submit Recommendations papers to SEMC	SEMC Decisions on TSO Recommendations	Implementation of LPF	LPF for reserves Go-Live May 2025			
								Wind down of tariffs for reserves	Commence implementation of LPF for remaining services		
Daily Auction	<ul style="list-style-type: none"> • Publication of DotEcon Report • Industry workshops held • First consultation on detailed DASSA design 		Consultation on auction and procurement design		TSOs submit Recommendations paper to SEMC	SEMC Decision on TSO Recommendations	Implementation -> Q4 2026 Go-Live December 2026				
Code		Develop First draft Code in consultation with industry		Ongoing Code development				Version 1 Go-Live	Iterate ->		
Panel		Establish Project Panel				SS Code Panel ToR				Establish SS Code Panel	
Volumes			Methodology Consultation	TSOs submit Recommendations paper to SEMC	SEMC Decision	Implementation ->					
Standalone Charge			Layered Procurement Solution	TSOs submit Recommendations paper to SEMC	SEMC Decision				Further refinement		
Products		TSO Product Review		TSO Consultation on product design published	TSOs submit Recommendations paper to SEMC	SEMC Decision on TSO Recommendations					

2.2 Volumes

The SEM Committee considers that having an accurate forecast of the volumes of system services required across timeframes, and having accurate historical data on the volumes available to the TSOs is critically important both for industry to make informed investment decisions and to enable the Regulatory Authorities to assess the effectiveness of market arrangements and inform policy decisions. In accordance with the HLD the TSOs are to publish forecast and historic System Services volume requirements by service, and where relevant, by location.

The TSOs deliverables are to:

- Develop and consult on a methodology for determining system services volume requirements and the volumes to be procured across all timeframes;
- Annually publish a ten-year forecast of system service requirements by relevant location, and shall invite comments from stakeholders on the form of this report at least annually;
- Regularly publish short-term forecasts and volume information following public consultation on the form, frequency, and granularity of these reports; and
- Publish the volumes to be procured by auction on a daily basis.

The SEM Committee proposes that the volumes deliverables are progressed by the TSOs as a matter of priority. While some form of simplified volumes forecasting methodology will be required for the first reserve auction, it is not proposed that its delivery be dependent on the complete volumes workstream.

2.2 Products

The HLD set out that there was to be ongoing monitoring of the suite of system services products, with the TSOs carrying out periodic reviews of the services and propose changes to existing services, the introduction of new services, and/or the discontinuation of existing services. The SEM Committee proposes that the first product review be carried out in 2023. The Phased Implementation Roadmap should detail the dates for the review, the public consultation process, and the date the TSOs recommendations will be submitted to the SEM Committee.

The SEM Committee proposes that the product review is progressed by the TSOs at pace, although the SEM Committee considers the volumes deliverables to have a higher priority. While a high level review of the appropriateness of the current suite of scalars will be required ahead of the first reserve auction, it is not proposed that its delivery be dependent on a full product review.

2.3 Locational Methodology

The HLD provided for the TSOs to develop a locational methodology, which would allow for the procurement of services in locations where there was a specific need for that service(s). The

application of this methodology within the procurement frameworks will be considered separately in the development of the enduring arrangements for LPF, and the DASSA.

However, a clear understanding of the locational needs of the system will be an important element in the market design for the DASSA, product design for LPF, the Regulatory Authorities' assessment of market power issues, and to allow investors to make informed decisions. Therefore, the SEM Committee proposes that the TSOs continue to progress the development of the locational methodology, which was requested in the letter of June 2022. The Phased Implementation Roadmap should detail the timeline for the development of the methodology, the dates for the public consultation, and the date the TSOs recommendations will be submitted to the SEM Committee.

The SEM Committee proposes that the locational methodology is progressed by the TSOs at pace, although the SEM Committee considers the volumes deliverables to have a higher priority. It is not proposed that the delivery of the first reserve auction be dependent on the locational methodology workstream. However, it is noted that the locational methodology may be an important consideration for future products being procured through the LPF.

2.4 Qualification

The HLD set out a formalised process for the Qualification Trials Process (QTP). The SEMC approved the TSOs' proposed approach to the QTP in Dec 2022. Therefore, this is no longer a project deliverable and it has moved to business as usual. However, the TSOs should note the key dates for the QTP in the Phased Implementation Roadmap as a reference for industry.

The HLD also set out that a qualification process, consistent with European and UK legislation, should be established by the TSOs and that the TSOs should endeavour to complete all applications within 90 days of receipt of a valid application. The TSOs should progress with the implementation of the qualification process and include the timeline for its development, along with industry consultation, in the Phased Implementation Roadmap.

To ensure that the development of the qualification process does not delay the delivery of the first auction under the LPF the TSOs should consider whether an interim qualification process is appropriate.

2.5 Governance

The HLD set out the governance arrangements that will apply to System Services. However, it is noted that the implementation of governance arrangements can require detailed legal work, in addition to long lead times for things such as licence changes. The HLD acknowledged this, provided for the phased introduction of a System Services Code, and tasked the TSOs with developing a transition plan for the governance arrangements. The TSOs should set this out as part of the Phased Implementation Roadmap.

In the interim the TSOs were requested to place all relevant system services documents in a single place on their respective websites by the end of 2022. The TSOs have indicated that there currently is a library of documents related to System Services, and a brief description of System Services under the DS3 page. For clarity, the SEM Committee considers there to be a need for a new page to be established exclusively related to System Services. This page should clearly sign post links to documents which includes, but is not limited to product descriptions, how to tender for services, the protocol document, the market ruleset, a sample Regulated Arrangements contract, an up to date list of providers, so stakeholders can easily access key System Services documents without the need to search through an extensive document library.

As discussed in section 5 in order to avoid dependencies between the accelerated delivery of the first reserve auction and the governance workstream the TSOs should explore interim measures such as the use of a voluntary contractual framework that have lower risks to delivery.

The HLD also set out that a System Services Panel would be established. It is proposed that the terms of reference for this panel will be developed and consulted upon following the publication of the SEM Committee Decision on the proposals set out in this paper. Any initial views industry has on the terms of reference are welcome as part of the responses to this paper.

Where licence changes are necessary for the full implementation of the arrangements these will be progressed in parallel to the TSOs work on the code. However, it is not expected that any licence changes will be in place ahead of the first auction and that it is not a dependency for the running of the first auction. The Regulatory Authorities will prioritise changes to the respective TSO licences ahead of changes to the licences of other market participants.

Lastly, the HLD provided for the implementation of a System Services Charge, to be payable by suppliers. The HLD set out that this would begin as an annually set charge and as market behaviours become better understood and the relationship between energy costs and system services costs becomes clearer the SEM Committee may move to more granular timeframes, up to a trading period basis. The balance between forecasting risks of the TSOs and suppliers are noted and informed the rationale of the SEM Committee's decision to phase in the granularity of the charge over time. Initially, therefore the TSOs should propose and progress an annual €/MWh charge to recover the costs of system services payments to providers. The TSOs have indicated that a modification to the Trading and Settlement Code would be required to allow a standalone charge. The TSOs should include the timelines associated with developing the charge in the Phased Implementation Roadmap. For the avoidance of doubt, the system services charge is not a dependency for the delivery of the first auction as the TSOs can recover their costs through the existing mechanisms until the charge is put in place.

2.6 Distribution System Interactions

The SEM Committee decided that distribution system interactions will be agreed by the relevant TSOs and distribution operators in accordance with the principles set out below:

- The process will be TSO-led, in relation to the qualification of providers and the procurement of services from those providers;
- The TSOs will ensure that any limitations on a distribution-connected provider considered necessary by the relevant distribution operator for the secure and safe operation of its system are adequately reflected in the TSOs' operation of the system services arrangements; and
- All network operators should work co-operatively to safely maximise access to the system services arrangements by distribution connected providers.

The TSOs should include the timelines for this process in the Phased Implementation Roadmap. The TSOs in consultation with the respective distribution operators should submit a report to the SEM Committee on their progress putting in place these agreements by 1st December 2023.

2.3 Market Arrangements

The market arrangements set out in the HLD consist of three main frameworks.

- The Fixed Contract Framework for multi-year contracts where targeted investment is needed by the system;
- the LPF for the procurement of products in the medium timeframe (anytime, up to one year, before day-ahead) where procurement before day-ahead can provide additional certainty for the TSOs or providers before day-ahead, or where a specific product is more appropriately procured in the LPF;
- and the DASSA which is the daily auction.

It is anticipated that, once all of the arrangements are in place, most volumes for standard products will be procured in the DASSA with a smaller volume procured through the LPF or Fixed Contracts.

The Fixed Contracts Framework is in place, phase I of the LCIS (Low Carbon Inertia Services) procurement is currently on-going with a TSO consultation, Consultation on Contractual Arrangements for the Procurement of a Low Carbon Inertia Service (LCIS) , published on 28 April 2023. LCIS Phase II is expected to commence following the conclusion of the Phase I procurement process.

The LPF was established in the HLD and set out the process through which the TSOs could propose to develop and procure products through auctions with a time horizon of longer than a day up to a year. The HLD set out that the TSOs should carry out an annual assessment of which services should be procured through the LPF. As discussed above the SEM Committee proposes to introduce the LPF in two main stages. The first, an accelerated delivery of a quarterly reserve product, and the second, an incremental development and expansion of the LPF based on

experience running the quarterly reserve auctions and the annual assessments, to cover the remaining System Services products as appropriate. The proposals for the accelerated delivery of this first auction are set out in section 5.

The Phased Implementation Roadmap should comprehensively cover the steps needed for the delivery of the first auction. Additionally, it should cover the timelines for the implementation of the enduring LPF processes. The LPF will require IT systems capable of efficiently procuring multiple products over different timeframes, however, in order to deliver the first auction on an accelerated timeline it is anticipated that as simple a system as possible be put in place initially. This approach will avoid long lead times for system development and will additionally facilitate developing the enduring arrangements based on experience of running auctions under the framework.

It is proposed that the daily auction, the DASSA, will be developed in parallel. In this regard the views of industry on the importance of consultation and concerns in relation to the complexity of the DASSA are noted. The SEM Committee considers that the transition path proposed in this paper addresses these concerns. This approach will put in place the foundational elements of the arrangements first, which will provide important information to industry and can inform policy development. Through the early implementation of a pragmatically scoped reserve auction, industry and the TSOs will gain experience in the operation of the arrangements which will inform further iterations and policy development. The phased implementation of the governance arrangements along with the enduring market arrangements will allow for more focused industry participation on individual issues than would be the case in larger consultations.

Accordingly, the DASSA will be developed in parallel with the transition phases set out above however it is proposed that the initial phases of the transition will take priority, in particular the delivery of the first reserve auction. As set out above in the draft Phased Implementation Roadmap, the TSOs intend to publish a consultation paper later in 2023 on the detailed DASSA design.

The HLD also provided for the development of secondary trading and a forwards market, potentially using CfDs. It is proposed that these arrangements be developed along with the development of the DASSA. However, as stated in the HLD it is anticipated that the go-live of a platform for secondary trading will be after the go-live of the DASSA. Notwithstanding this the SEM Committee has set out proposals in section 5.7 to facilitate simplified secondary trading.

3. Extension of the Tariff Arrangements

It is clear based on the draft Phased Implementation Roadmap, that an extension of the Regulated Arrangement contracts will be required. The current end date of 30 April 2024 does not allow sufficient time to introduce competitive arrangements. Given the timescale for implementation of the Layered Procurement for Reserves proposals set out in Section 4, the SEM Committee considers it prudent to extend the Regulated Arrangements by a period of 24 months. This will mean that the revised expiration date for the contracts will be 30 April 2026.

The SEM Committee considers that this will allow adequate time for the TSOs to implement the first reserves auction, and to develop thinking on how to procure the remaining services for the period ahead of introduction of the daily auction framework.

Consultation Question:

4. Do you agree with the SEM Committee's proposal to extend the tariff arrangements by 24 months?

4. PROJECT GOVERNANCE

4.1 Regulatory Authorities and TSOs Co-ordination

The RAs and TSOs are currently engaging on developing an agreed project governance document. This will set out the schedule of TSO/RA engagements to allow for regular monitoring of delivery of all elements of the High Level Design decisions above.

The governance structure will also cover other SEM projects such as Scheduling and Dispatch and Reintegration. This will enable the SEM Committee to maintain a co-ordinated approach to policy development across all areas of substantive change in the market and facilitate oversight of the TSOs implementation progress across all of these projects.

4.2 Regulatory Authorities and Industry Co-ordination

Additionally, there is also a need to formalise how stakeholders will be engaged with on project delivery. The HLD Decision indicated that the SEM Committee would consider introducing a stakeholder panel to facilitate and streamline regular consultation and engagement with industry on System Services. The SEM Committee proposes that this panel will be made up of representatives from industry associations, EirGrid, SONI, ESB Networks, and NIE Networks. The purpose of this forum is to compliment the normal public consultation process, not replace them, additionally for the avoidance of doubt it is not proposed that this panel would be a decision-making forum.

It is proposed that this panel would meet quarterly and more frequently as needed. Draft terms of reference are set out in the Appendix. Expressions of interest to be a member of the Panel can be made in response to this paper and comments on the draft terms of reference are invited.

Consultation Question:

5. SEMC invites expressions of interest in participation on the consultative SSFA Project Panel
6. Do you have any comments on the draft Terms of Reference for the consultative SSFA Project Panel set out in Appendix 1.

5 LAYERED PROCUREMENT FOR RESERVES

Following on from publication of the High Level Design Decision, the SEM Committee and TSOs engaged on the delivery of the detailed design. Through this engagement, and following separate engagement with stakeholders, the SEM Committee concluded that the daily auction design would be significantly complex and would have long lead in times. It was also established that the daily auction outcomes would not be effectively aligned with system dispatch until the TSOs have concluded their Scheduling and Dispatch Review, which is currently expected to be concluded in 2028.

Accordingly, and taking into account the views of stakeholders that a phased transition is necessary for system services, the SEM Committee considers that it is important to implement the new arrangements in a measured and incremental manner, allowing sufficient consultation with industry and incorporating learnings from experience into the subsequent phases of the implementation.

Separately, in July-August 2022, the TSOs commenced engagement with the RAs in relation to the requirement to review System Services Regulated Arrangements tariffs as a result of “over-heating” in reserve services. As part of this engagement, the SEM Committee requested the TSOs to include an option using the LPF to competitively procure the reserve services under the TSOs’ Tariff Rate Review consultation, which was published in September 2022. Through engagement on the tariff review process, it is apparent that there is sufficient volumes of FFR, POR, SOR, TOR1 and TOR2 to facilitate competition. Ultimately in January 2023, the SEM Committee decided to freeze the System Services tariff rates for the 2022/23 tariff year, while competitive procurement is put in place for the reserve services (SEM-23-020).

In the context of the complexity of the daily auction design, the need to complete the Scheduling and Dispatch review, and its confidence in sufficient competition, the SEM Committee considers there to be a need to prioritise the use of the LPF to introduce competition for FFR, POR, SOR, TOR1 and TOR2, and potentially Replacement Reserve. This approach will enable synergies and learnings which will increase the efficiency of the implementation of the daily auction framework, while mitigating the risk of continued downward pressure on tariff rates for all providers through ongoing extensions of the Regulated Arrangements.

In Ireland, the Government has published its Climate Action Plan 2023, this plan sets out a range of actions across the economy to reduce Ireland’s carbon output and to ensure that it remains within the limits set by the carbon budgets. One of those actions placed on the CRU and EirGrid is to ensure that the competitive procurement of reserve services is accelerated, that reserve requirements can be met by zero-carbon sources and that that procurement of reserve services from carbon-emitting providers is phased out by 2027. It is important to note that a Climate Action Plan for Northern Ireland is currently under development, and any actions which come out of this will need to be delivered.

Therefore, in the context of all of the above considerations, the SEM Committee remains of the view that a phased introduction of the arrangements as envisaged in the HLD is appropriate. However, the SEM Committee proposes to accelerate the implementation of the first auction for reserves, taking a pragmatic approach to implementation to do so. This will allow the transition away from tariff payment for all reserve providers regardless of the system needs, towards the procurement of volume limited services based on system needs with prices being set competitively.

This will ensure competitively set prices for consumers are introduced more quickly, and that a more targeted procurement of zero-carbon reserve sources can happen more quickly. However, the SEM Committee notes the importance of maintaining a stable investment environment in system services and therefore sets out several proposals to facilitate a stable and measured transition to the competitive arrangements.

The SEM Committee would welcome views from stakeholders on potential additional measures that may offer further incentives to the participation of low carbon sources of System Services through the SSFA.

Consultation Question:

7. Do you have any views on potential additional measures that may offer further incentives to the participation of low carbon sources of System Services through the SSFA.

This remainder of this section sets out proposals on how the LPF will be used to procure reserves for the accelerated process. Views are invited on the parameters set out below for the proposed competitions. The aim is to have this framework implemented within 24 months from the publication of this paper. The full set of enduring arrangements for the LPF will be implemented by the TSOs in parallel and it is envisaged that the TSOs will make incremental improvements to the processes in addition to the procurement of additional products, covering different timeframes and services.

5.1 Overview

It is proposed to utilise the LPF, put in place as part of the HLD, to procure all necessary volumes of FFR, POR, SOR, TOR 1 and TOR 2 to safely operate the system through a quarterly competition under a single all-island zone. The remaining System Services will continue to be procured through tariff based arrangements, though the SEM Committee considers it important that the implementation model considers the flexibility to adapt to procurement of other services a matter of priority in the design.

Winners of the competition will be required to provide a fixed MW quantity of the relevant product across all trading periods within the quarter. The obligation is centered on the ex-ante market position of the providing unit i.e. its FPN and availability; which must comply with the units' reserve

obligation during the three-month period. Payment for winners will be based on the auction clearing price and the fixed MW quantity.

A remuneration framework for providers who were unsuccessful in the auction but provided the service in real time due to their dispatched position/availability is also proposed. Options for this are set out in the below sections.

It is also proposed that in parallel those providers with contracts under the Regulated Arrangements will continue to receive tariff payments as normal. In section 3 of this paper the SEM Committee invites comments on its proposals to extend the tariff arrangements.

It is essential that the delivered solution is as forward-compatible as possible and that innovations, learnings and settings in business processes be made with future-proofing in mind, for the development of the detailed daily auction design and the implementation of all remaining aspects of the HLD. Accordingly, the SEM Committee encourages the TSOs to consider efficient, flexible solutions, especially in the running of the first auctions.

It is anticipated that the progression of the HLD decisions, in conjunction with the evolution of work on Scheduling and Dispatch, will continue alongside the implementation of the accelerated implementation of the Layered Procurement framework for reserves, as set out in the draft Phased Implementation Roadmap.

As noted in Section 4 the TSOs will include an approach to the phasing in the governance arrangements in the Phased Implementation Roadmap and the SEM Committee encourages the TSOs to consider simplified or interim governance and contractual arrangements where they will reduce the risks to delivery of the first auction.

Scoping of the systems requirements to enable the quarterly competitions is the responsibility of the TSOs.

5.1 Competition Parameters: Quarterly Reserve Product

This section sets out in detail, the SEM Committee's proposals for the auctioning of reserve services through the LPF. It sets out sub-sections for each parameter of the competition.

5.1.1 Duration & Frequency

The SEM Committee proposes that the competitions are held every three calendar months (quarterly). The delivery window will commence one month from the date of Clearing and lasts for three calendar months. Throughout this document the three-month contractual period is referred to as the procurement period. Quarterly periodicity has been proposed as it is considered that it provides for relatively frequent competitions, allowing learnings between each, and it is a sufficiently long period between competitions to allow the TSOs to administer them with necessary

systems requirements. While there may be benefits to more frequent competitions (e.g. monthly or weekly) it is likely that they would drive more IT systems requirements.

5.1.2 Product Definition

For simplicity, it is proposed that the products be defined in line with the current service definitions for FFR, POR, SOR, TOR1 and TOR2 (additionally it is proposed to request the TSOs to consider replacement reserves), and an availability requirement for all trading periods in the procurement period. There is scope for greater complexity, as learnings are gained from initial auctions – but at the outset the SEM Committee considers a simple approach most prudent. The TSOs may introduce new reserve products over time to better reflect the needs of the system, for example there may be different technical specifications for some products.

Views are sought from respondents on whether the services should be procured as a bundled product or as five individual products.

Under the first option providers would submit a single bid with a price for the bundled provision of all five of the services. The assessment of bids and setting of the clearing price would be carried out on the basis of the costs of each bundle. Therefore, providers would either be successful in all five of the services or would not be successful in the competition.

Under the second option providers would submit a single bid for each of the five services individually (i.e. five bids, one for each service). The assessment of bids and the setting of the clearing price would be carried out on the basis of the costs of each individual service. Therefore, providers could be successful in the competition for some services and not for others.

5.1.3 Procurement Process

The SEM Committee proposes that for the initial auctions a pragmatic and straightforward approach be taken to the auction process. Therefore, the proposals set out below aim to simplify the process to facilitate an accelerated implementation timeframe. The SEM Committee is not proposing to prescribe the administrative process that the TSOs adopt e.g. use of an auction platform or a tender process. However, the TSOs should adopt, for the first auction, the process that can be put in place most quickly. It is acknowledged that the enduring LPF, involving products across varying timeframes, will likely need a more robust IT solution than is envisaged for the first auction(s). Similarly it is expected that the Daily Auction will require robust IT systems.

The auction process will be by sealed bid. Each provider will submit a single bid. Depending on the decision on product design, as discussed above, this will be a single bid for the bundled reserve product or five separate bids for each of the reserve products. It is proposed that bids would be subject to a bid cap, this cap will be developed by the TSOs as part of the implementation process. The sealed bids will be ranked from cheapest to most expensive up to the volume requirement. It is proposed that the bids be assessed on an all-island basis. More

sophisticated auction designs, such as combinatorial bidding as being developed for the Daily Auction, may be developed and proposed by the TSOs for subsequent auctions.

A simple demand curve is proposed initially, whereby all bids up to the volume requirement will be accepted and the provider that puts the total volume over the volume requirement will be rejected². The last accepted bid would set the clearing price. It is anticipated that the TSOs will develop a more sophisticated demand curve for subsequent auctions and for any new products proposed.

Consultation Questions:

8. Do you have any comments on a) the quarterly frequency of the competitions or b) the timing of the competition, one month ahead of the procurement period.
9. Do you agree with the SEM Committee's proposal to retain the existing reserve services, at least for the initial auctions?
10. Regarding product definition, should the SEM Committee adopt option 1, a bundled reserve product, or option 2, individual reserve products?
11. Do you agree with the SEM Committee's proposals on the auction process?

5.2 Volumes

The TSOs will set the volume requirement for each procurement period at a flat requirement across the procurement period. This may mean that there are times of over procurement during times when the reserve requirements are lower, but it improves efficiency relative to the Regulated Arrangements, and is in line with the simplified approach indicated previously.

The SEM Committee proposes that initially the volume requirement be set at the level of the maximum reserve requirement expected for the procurement period,. This volume requirement can include a contingency volume if the TSOs consider it appropriate.

The HLD Decision has a number of requirements for volumes forecasting and reporting by the TSOs. As the methodology for this is developed and becomes more sophisticated this may influence the complexity of the volumes forecasting for Layered Procurement. Additionally, greater complexity in product definitions may also change the way volumes are forecast.

² For example if the volume requirement is 100MW, accepted bids total 90MW, and the next ranked bid is for 20MW that bid will be rejected and the bid of the last accepted provider will set the clearing price.

Consultation Question:

12. Do you agree with the SEM Committee's proposals on volume setting?

5.3 Commitment obligations

It is proposed that parties who are successful in the auction will be paid the auction clearing price and will have a commitment obligation to ensure their FPN, and associated available reserve, is in line with their reserve commitment under the auction. This section addresses proposals in relation to what payments the provider should make to the TSOs in the event that they do not meet their availability obligations. A separate matter is if a provider does not perform the service as expected when activated, that is discussed in the next section.

The commitment obligation will apply in all the trading periods of the procurement period and it is the provider's responsibility that they maintain an availability for the service in the ex-ante market, and their FPN is compatible with their obligations under the auction. It is noted that the relationship between FPN and available reserve varies between technologies.

It is recognised that it will be difficult for many technologies to accurately forecast their availability in advance and remuneration arrangements will take this into consideration. Providers will have to balance the payments received when available against the probability that they will be unavailable for some of the procurement period. In the options set out below the SEM Committee has sought to incentivise providers that can have the highest availability, those that can be available during periods of high wind, and those that can provide early notice of periods of unavailability to the TSOs.

The SEM Committee has developed a number of options on how to incentivise meeting commitment obligations, set out below, and invites the views of stakeholders on these proposals.

5.3.1 Option 1: Market Deficiency Payment

Under this option, the provider would not receive a payment in each trading period they were unavailable for and would make an additional market deficiency payment. It is proposed that the payment is set at the clearing price in the auction and adjusted for the amount of notice given to the TSOs:

Notice Period	Payment (per MW unavailable for a trading period)
Greater than two months	(Clearing Price)*(0.1)
Greater than one month	(Clearing Price)*(0.2)
Greater than three weeks	(Clearing Price)*(0.3)
Greater than two weeks	(Clearing Price)*(0.5)
Greater than one week	(Clearing Price)*(0.7)
Greater than one day	(Clearing Price)*(1)
Less than 24 hours	(Clearing Price)*(1.5)
None	(Clearing Price)*(2)

We anticipate that this will sharpen the incentives for high reliability and reward those providers that can predictably provide reliable reserve under most system conditions. Under this approach a winning provider who does not meet their commitment obligation will firstly forego payment for any volume not provided and then in addition must make a payment based on the clearing price for the volume deficiency.

Respondents views are also sought on whether net payments should be capped at zero where total deficiency payments to the TSO exceed total reserve payments to the provider over the procurement period.

While this approach may lead certain providers to include a risk premium in their bids it will provide an incentive proportionate to the payments (and inframarginal rents) that providers will be earning over a given procurement period.

5.3.2 Option 2: Administered Deficiency Payment

Under this option providers will be encouraged to meet their commitment obligation through a fixed €/MW deficiency payment which would be set ahead of the auction for failure to deliver in a trading period. A provider not meeting their commitment obligation would forego their payment for that trading period and be required to pay the TSO a deficiency payment. This payment would be set in advance of the auction and would be adjusted according to the notice given as in option 1 above. The fixed rate may need to be evaluated in advance of future auctions following observation of its impact.

An administratively set payment will provide clarity to the providers before they submit their bids. However, while under option 1 the deficiency payments will be proportionate to the revenues received by the providers, under this option the deficiency payments may be set too high or too low and not appropriately incentivise availability and accurate bidding in the auction.

As a transitional measure it may facilitate a lower deficiency payment which will reduce the cost to providers of making the commitment and participating in the auction. However, it also increases

the likely percentage of times providers will not meet their commitments. Following each procurement period the payment could be adjusted based on experience.

5.3.3 Option 3: Deficiency Scalar

This option would see no deficiency payment applied to providers, rather a scalar would be applied to future auctions based on the amount of commitment obligations not met in a procurement period. So, a unit that routinely misses commitment obligations would not be paid for any missed trading periods and would then have a scalar applied to payments in the next three month period, if successful in the auction. This would then also render them less competitive in future auctions.

The scalar would apply to payments, effectively derating the unit and reducing the amount received by the provider for the relevant procurement period, proportionate to its reliability in meeting its commitment obligations. The scalar would be set at a maximum of one and reduce on a scale as proposed below.

% Obligations met	>80%	79%-70%	69%-60%	59%-50%	<50%
Scalar	1.0	0.7	0.6	0.5	0.4

Consultation Question:

13. What are your views on the proposed options for commitment obligations?

5.4 Performance Scalar

Implementation of scalars can assist in ensuring that the required flexibilities and levels of performance will be incentivised and delivered. The use of scalars should ensure that the service providers will be remunerated appropriately for the value these services provide to the system, ensuring lower payments from the consumer for a lower level of performance. Reliable provision of the service when activated will yield the higher scalar values.

It is proposed that we apply the Performance Scalar in line with how it is defined and applied currently for the Regulated Arrangements, pending TSO considerations as part of the product review. In the current regime “Performance Scalar” is defined as a multiplicative factor which adjusts the payment for a given DS3 System Service to reflect a Providing Unit’s delivery of the service as determined in accordance with the provisions of the Protocol^[1]. It is proposed to calculate a performance scalar for all providers, those successful in the auction and those who were not.

This will reduce the €/MW payment received by reference to the scalar applied in the existing procurement period and will carry over into future procurement periods. This will in effect also reduce the competitiveness of non-performing units in future auctions as the scalar will need to be factored into their bid price. Therefore it will incentivise performance from all providers.

Consultation Question:

14. Do you have any comments on the use of scalars under the LPF?

5.5 Carbon Scalar

As previously indicated, there is a requirement for the CRU and EirGrid to phase out carbon intensive sources of reserves by 2027 under the [Climate Action Plan 2023](#). There are also broader decarbonisation targets in both jurisdictions. In that context, the RAs are exploring ways to ensure that carbon intensive System Service provision is phased out in the coming years. One means to support this would be to introduce a carbon scalar which would reduce System Services payments to carbon intensive technologies. The SEM Committee proposes to trial this through the LPF, but this could also be extended out to all services if effective.

Consultation Question:

15. Do you have any views on the use of a carbon scalar?

5.6 Payments for constrained on providers

The TSOs' dispatch of the power system must take into account constraints to ensure system security. As a result, actual dispatch will at times deviate from the unconstrained market schedule. Out-of-merit generators that the TSO dispatches are compensated their short run marginal costs incurred due to the TSO action. These payments are funded through Imperfections. For system services, as is the case in the energy market, there will be occasions when the winners in the reserve auction have been constrained off by the TSOs and market participants that were not successful in the auction are constrained on by the TSOs for system reasons, including for system services. Imperfections costs are currently very high. It is expected that as the efficiency of the TSOs dispatch increases through construction of network infrastructure and removal of operational constraints that such imperfections should decline from their current levels over time. Some level of imperfections are normal on a system. However, it is likely to continue to be a significant feature of the system for several years. The options set out below propose ways of addressing these situations.

5.6.1 Option 1: No additional payments

Under this option energy market settlement will occur as it does currently, and no additional system services payments would be made to constrained on providers. Providers will continue to

be bound by Grid Code obligations, receive their constraint payments and will incur no additional costs.

The tariffs running in parallel means that constrained-on providers will continue to receive additional payments for the transitional period of time only. This option increases the importance of securing a position in the market but may reduce an unsuccessful participant's incentive to maximise system services volumes available in real time to the TSO.

5.6.2 Option 2: Dispatch Payments

Under this option and option 3 units would receive a payment in addition to their constraint payments. For option 2 a discount factor would be applied to the clearing price. This would then be paid for the volumes that have been made available due to real time dispatch, which were not already cleared in the prior procurement process.

The level of compensation provided is to be calculated as follows:

$$[\text{Auction Clearing Price}] \times [\text{Discount Factor}] \times [\text{Volume factor}] = \text{Constrained on Payment}$$

The Discount Factor needs to be set at a level that encourages units to partake in the auction, but set at a level of remuneration for the volumes provided which were not already cleared in procurement to incentivise greater availability. An initial discount factor of 0.4 is proposed to be applied to the auction clearing price.

The Volume Factor would be calculated as follows:

$$[\text{Residual Service Requirement} / \text{Total Dispatched service volume}]$$

The Residual Service Requirement is the TSOs Volume requirement for that service minus the available volume from the auction winners. Where the available volume from winners is greater than the requirement then the Volume Factor is set to zero (it cannot be a negative number).

This ensures that the payments will be proportionate to the needs of the system and the value of the dispatched providers. This will be higher in times of scarcity and lower when there are excess volumes; controlling costs and limiting the customers exposure to TSO dispatch decisions.

5.6.3 Option 3: Payments on merit order

Option 2 is similar to Option 3 in that it is paying a discount on the clearing price based on real-time physical dispatch position. However, it is not paying all providers who has a real-time position, it is paying only those with a position up to the volume required based on merit order.

Therefore, the need to discount the payment would be lessened as the volume selection process naturally reduces the overall payment.

Under this option a merit order would need to be established for payment of providers who were not successful in the auction. The system would select the volume for input to the merit order which would be based on the actual physical provision of the service by the unit vs what it is qualified for vs what it has already contracted for in procurement process. The TSOs would be required to develop proposals on how best to adapt the merit order and discount factor to best incentivise the right mix of generation to declare availability and maintain and improve capability to deliver high quality service provision. The TSOs have advised that the implementation of this would be complex for arrangements to be delivered in the short term.

Consultation Question:

16. What are your views on the proposed options for payments for constrained on providers?

5.7 Secondary Trading

It will not be possible to implement a fully operational secondary trading platform in the timeframe of the first quarterly reserve auction. Establishing such a market is likely to involve complexities and will take time to develop and implement. As noted in section 2 the HLD envisages the implementation of secondary trading after the go-live of the enduring LFP and first DASSA. However, the SEM Committee considers that there may be benefits to introducing a simplified version of secondary trading that requires minimal TSO involvement. This simplified secondary trading would permit providers to transfer their obligations to another technically qualified provider and notify the TSOs of this transfer before the relevant trading period. The commercial and contractual terms of these transfers would be agreed bilaterally between the providers. There would be no trading platform implemented. The minimum period of advance notice of the transfer, as well as the form of that notification would be developed by the TSO.

While a simplified process as set out above would have clear limitations in terms of market transparency, efficiency and liquidity when compared against a fully scoped market platform, it does have benefits when compared against the absence of any mechanism for shorter-term adjustments. By providing an, albeit limited, mechanism to facilitate shorter-term adjustments facilitates greater efficiency in the market and reduces risks on providers over the procurement period.

Views are sought on whether simplified secondary trading would be beneficial to the arrangements and should be facilitated or whether no such arrangements should be facilitated. For the avoidance of doubt secondary trading with greater complexity, such as the introduction of a platform, is not a viable option in the timeframe envisaged in these proposals.

Consultation Question:

17. What are your views on the proposals around secondary trading?

6 NEXT STEPS

The Detailed Design Next Steps & Layered Procurement Implementation consultation will remain open for eight weeks closing on 3 August 2023. Workshops will be arranged during the consultation period, and bilateral engagements can be arranged at the request of stakeholders. Should stakeholders have any queries or comments please contact Dylan Ashe (dashe@cru.ie) or Lauren Skillen-Baine (lauren.skillen-baine@uregni.gov.uk). All responses should be submitted by email to both these addresses.

Consultation Question:

1. Recognising the need to deliver low carbon reserve services as early as possible in the decade³ are there variants or alternatives to the approaches set out in this paper that the SEM Committee should consider?
2. Respondants are invited to propose ways to de-risk the delivery of the project.
3. Do respondants have views on how the learnings from the early phases of the Phased Implementation can be optimised?
4. Do you agree with the SEM Committee's proposal to extend the tariff arrangements by 24 months?
5. SEMC invites expressions of interest in participation on the consultative SSFA Project Panel
6. Do you have any comments on the draft Terms of Reference for the consultative SSFA Project Panel set out in Appendix 1.
7. Do you have any views on potential additional measures that may offer further incentives to the participation of low carbon sources of System Services through the SSFA.
8. Do you have any comments on a) the quarterly frequency of the competitions or b) the timing of the competition, one month ahead of the procurement period.
9. Do you agree with the SEM Committee's proposal to retain the existing reserve services, at least for the initial auctions?
10. Regarding product definition, should the SEM Committee adopt option 1, a bundled reserve product, or option 2, individual reserve products?
11. Do you agree with the SEM Committee's proposals on the auction process?
12. Do you agree with the SEM Committee's proposals on volume setting?
13. What are your views on the proposed options for commitment obligations?
14. Do you have any comments on the use of scalars under the LPF?
15. Do you have any views on the use of a carbon scalar?

³ It is noted that the carbon budgets in Ireland, established in the Climate Action and Low Carbon Development (Amendment) Act 2021, are cumulative and therefore earlier carbon reductions will have greater impact.

16. What are your views on the proposed options for payments for constrained on providers?

17. What are your views on the proposals around secondary trading?

APPENDIX 1: Terms of Reference of the SSFA Project Panel

The objective of the SSFA Project Panel is to provide a regular forum to track progress and allow stakeholder input on the System Services Future Arrangements Project against the Phased Implementation Roadmap.

Membership:

The Panel shall consist of:

- A chairperson appointed by the SEM Committee
- A representative from the CRU
- A representative from the UR
- A representative from EirGrid
- A representative from SONI
- A representative from ESBN DSO
- A representative from NIEN DSO
- A representative from conventional generators
- A representative from wind/solar generators
- A representative from storage units
- A representative from DSUs
- A representative from demand customers
- A representative from interconnector owners
- A representative from suppliers
- A representative from energy communities
- A representative from consumer interest groups

The RA representatives will carry out the secretariat function on an alternating basis.

Each person shall be allowed to appoint an alternate.

Meetings

Meetings will be held at least three times per annum. Meetings shall be arranged with at least 10 business days notice by the secretariat.